Malibu Creek Ecosystem Restoration Study

Los Angeles and Ventura Counties, California

Appendix U

Resource Agency Coordination Documents (ESA and 401)

U.S. Army Corps of Engineers
Los Angeles District

November 2020

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Appendices

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Appendix U1

Section 7 of the Endangered Species Act (ESA)

Policy Exception

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DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON, DC 20310-0108

DEC 17 2019

MEMORANDUM FOR THE COMMANDING GENERAL, U.S. ARMY CORPS OF ENGINEERS

SUBJECT: Malibu Creek, California Feasibility Study, Section 7 of the Endangered Species Act (ESA) Policy Exception Request

1. Reference memorandum, CECW-SPD, 1 Oct 2019, subject: Malibu Creek, California – Feasibility Study – Request for Policy Waiver to Defer Section 7 of the Endangered Species Act Formal Consultation with the National Marine Fisheries Service to the Preconstruction, Engineering and Design Phase.

2. I am responding to your memorandum requesting an exception to the policy requirement to complete ESA Section 7 consultation prior to completion of the feasibility study for the Malibu Creek, California project.

3. My staff has reviewed the memorandum and recommendations by the San Francisco District and South Pacific Division and the assessment by Corps Headquarters. I approve the requested policy exception for Malibu Creek. Completing the Malibu Creek ESA consultation in PED will allow the Corps to develop the necessary information to inform the services of impacts to endangered steelhead, while avoiding unnecessary costs and time during the feasibility study.

4. If there are any questions, your staff may contact Mr. Douglas Gorecki, Project Planning and Review at (202) 761-0028.

R.D. JAMES
Assistant Secretary of the Army
(Civil Works)

CF:
CECW-ZA
CECW-ZB

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

September 6, 2017

Environmental Resources Branch

Mr. Chris Yates
Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4221

Dear Mr. Yates:

Enclosed is a copy of the Biological Assessment (BA) for the Malibu Creek Ecosystem Restoration Project. The BA addresses potential effects of the proposed project on the southern California steelhead (*Oncorphyncus mykiss*) and its designed critical habitat in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.).

The BA concluded that the proposed project may affect but is not likely to adversely affect the southern California steelhead and is not likely to destroy or adversely modify critical habitat. The BA includes conservation measures to offset potential adverse effects. Please review the enclosed NA and respond in writing with the Service's position (concurrence or non-concurrence), including any additional conservation measures.

Should you require additional information or have any questions, please contact Mr. Larry Smith, Project Environmental Coordinator, at (213) 452-3846, email: lawrence.j.smith@usace.army.mil.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

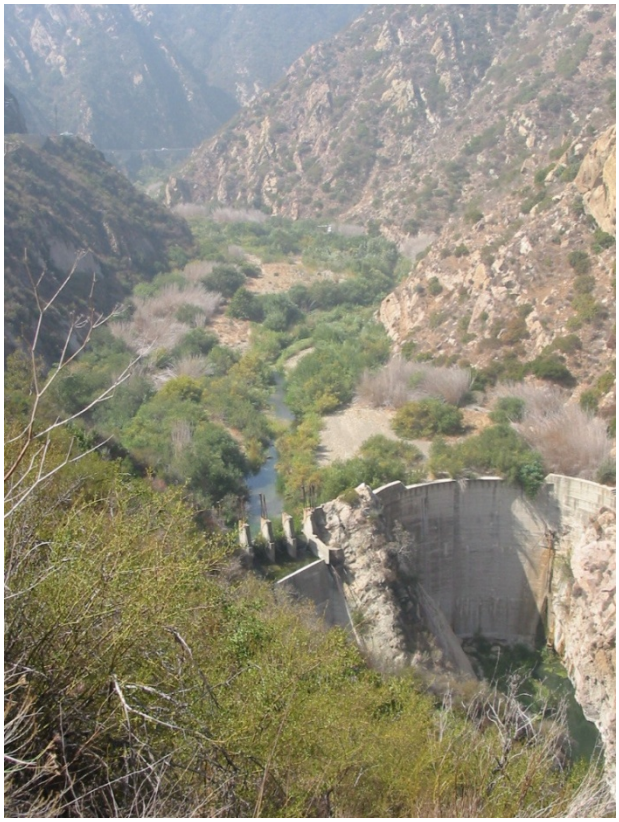
Enclosure

Malibu Creek Ecosystem Restoration Project

Los Angeles and Ventura Counties, California

Biological Assessment and Section 7 Consultation

National Marine Fisheries Service



U.S. Army Corps of Engineers
Los Angeles District

September 2017

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1 INTRODUCTION

This Biological Assessment has been prepared to document the potential impacts of the Malibu Creek Ecosystem Restoration Project in Los Angeles County, California, on the steelhead (southern California DPS) and its designated critical habitat. It has been prepared to facilitate the formal consultation pursuant to Section 7 of the Endangered Species Act, 16 U.S.C. 1536(c), between the U.S. Army Corps of Engineers (USACE) and the National Marine Fisheries Service (NMFS). This Biological Assessment was prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (ESA) (50 CFR 402; 16 U.S.C. 1536 (c)).

1.1 Species and Critical Habitat Considered in this Document

Special-status species for this project are defined as all plant and wildlife species identified by NMFS as endangered, threatened, or candidate species under the federal Endangered Species Act (ESA). Table 1 includes Federal threatened, endangered, and candidate species under the jurisdiction of the NMFS taken from a species list request provided to the NMFS during initial ESA consultation. This table identifies species status and critical habitat, habitat requirements, and the likelihood of occurrence within the project area. The only species and critical habitat identified as under the jurisdiction of NMFS and potentially affected by the Project is the steelhead and its critical habitat.

1.2 Organization of the Biological Assessment

Section 2 describes the proposed project. Section 3 provides a brief description of those federal special-status species that have the potential or are likely to occur in the Action Area. Section 4 discusses the environmental baseline and cumulative effects. Section 5 assesses the potential impacts of the proposed project on biological resources and presents an alternative to the proposed project. Section 6 presents the conclusions and the USACE ESA determinations.

1.3 Agency Coordination

The USACE and the non-Federal sponsor, the California Department of Parks and Recreation (CDPR), have coordinated extensively with USFWS, NMFS, and the other resource agencies throughout the planning process for this project.

To facilitate coordination among the resource agencies and special interest groups concerned about Malibu Creek and Santa Monica Bay, the Malibu Creek Ecosystem Restoration Technical Advisory Committee (TAC) was formed. Frequent meetings of this group have been held since June 2008 to provide a forum for the various agencies and groups with an interest in Malibu Creek to identify their concerns, goals, objectives, and potential restoration efforts for Malibu Creek.

1.4 Coordination with NMFS

In addition to coordinating with NMFS during the planning process through NMFS participation on the TAC, discussions between the USACE and NMFS determined that a formal Section 7

consultation was appropriate considering the presence of listed species and their designated critical habitat within the project area.

Table 1 Federal Threatened, Endangered, or Proposed Special-Status Species

Species	Status	Habitat	Potential for Occurrence in the Project Area
Fish			
Southern California Steelhead *Oncorhynchus mykiss*	FE CH	Pacific coast streams and marine environments	Observed in Malibu Creek below Rindge Dam. Malibu Creek from Rindge Dam downstream to the ocean is designated as critical habitat (NMFS, 2005).
FE= Federal Endangered Species *FT = Federal Threatened Species* *FC= Federal Candidate Species* *CH = Critical Habitat*			

2 Description of the Proposed Action

The USACE and the CDPR intend to re-establish aquatic habitat connectivity in Malibu Creek by removing Rindge Dam as well as modifying/removing upstream aquatic barriers on Cold Creek and Las Virgenes Creek. The Malibu Creek Study Area is shown on Figure 1. Authority for project studies was initially contained in the Water Resources Development Act of 1999 (P.L. 106-53, Sect. 211) as an amendment to the Water Resources Development Act of 1996.

Currently the aquatic habitat in Malibu Creek is not connected above and below Rindge Dam, a 100-foot (ft) tall concrete arch dam. The dam itself is no longer functional and is filled with approximately 780,000 cubic yards (cy) of a variety of sediment types. The Malibu Creek Watershed contains habitat for endangered and threatened species. The dam, as well as the area surrounding the dam, is within lands operated by CDPR. The dam and sediment impound area are shown on Figure 2.

In order to re-establish aquatic habitat connectivity in Malibu Creek, three primary components make up the Proposed Action: removal of the dam (either entirely by removing the main dam arch and the spillway structure; or in part by removing the main dam arch only leaving the spillway structure in place), removal of sediments contained behind the dam; and modification/removal of upstream barriers on Las Virgenes and Cold Creeks. Disposal of concrete associated with the dam removal will take place at the Calabasas Landfill. More detail on these components of the Proposed Action is provided below. Stream excavation sites would be revegetated to enhance ecosystem function and values. This includes areas impacted by the restoration of access roads, and the removal of upstream barriers. Vegetation will be removed outside of the nesting season for migratory birds (February 1 through August 15) to the extent possible. If vegetation removal must be conducted during the nesting season, the area will be surveyed by a qualified biologist and

Figure 1 Study and Project Area

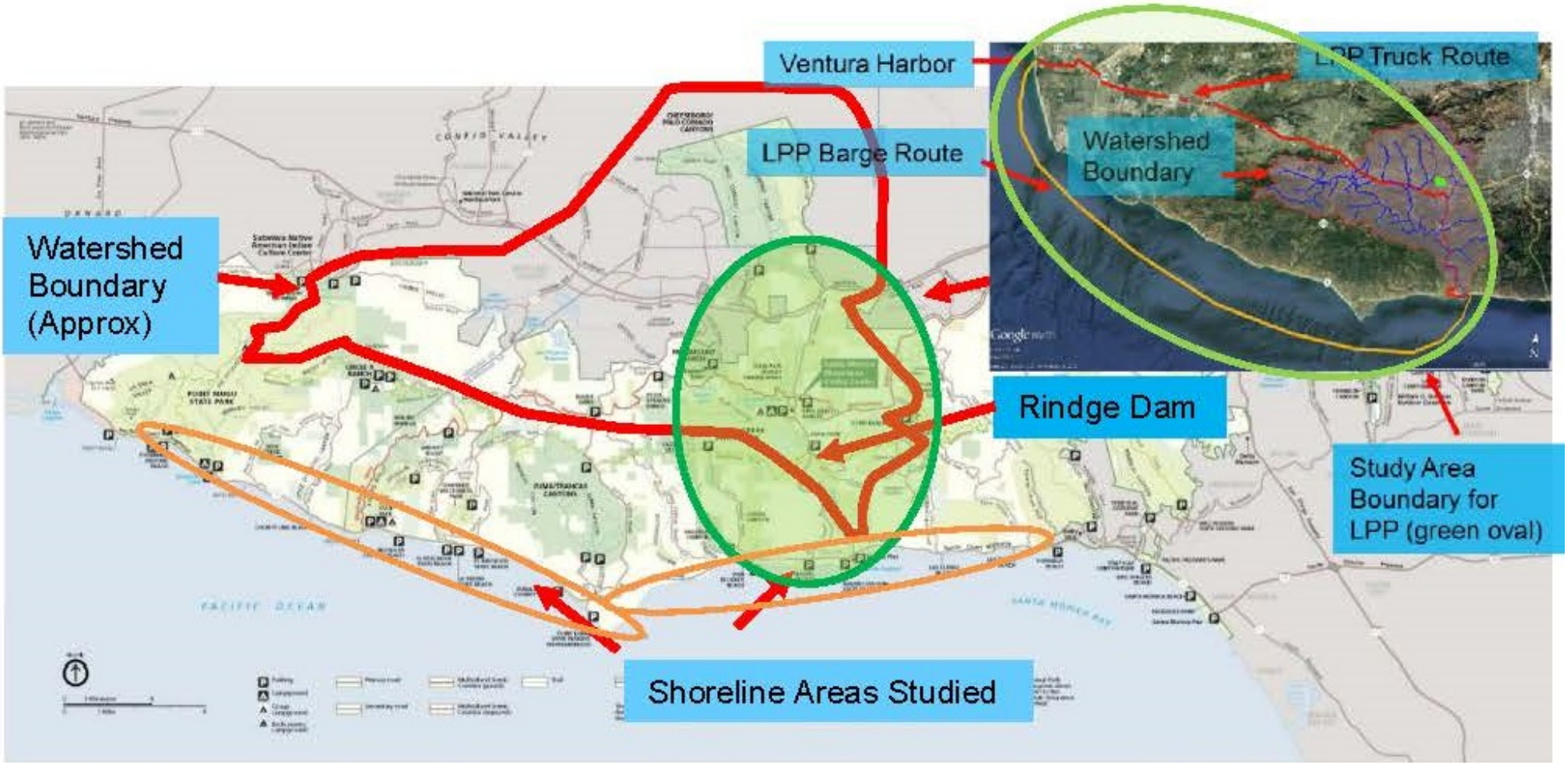
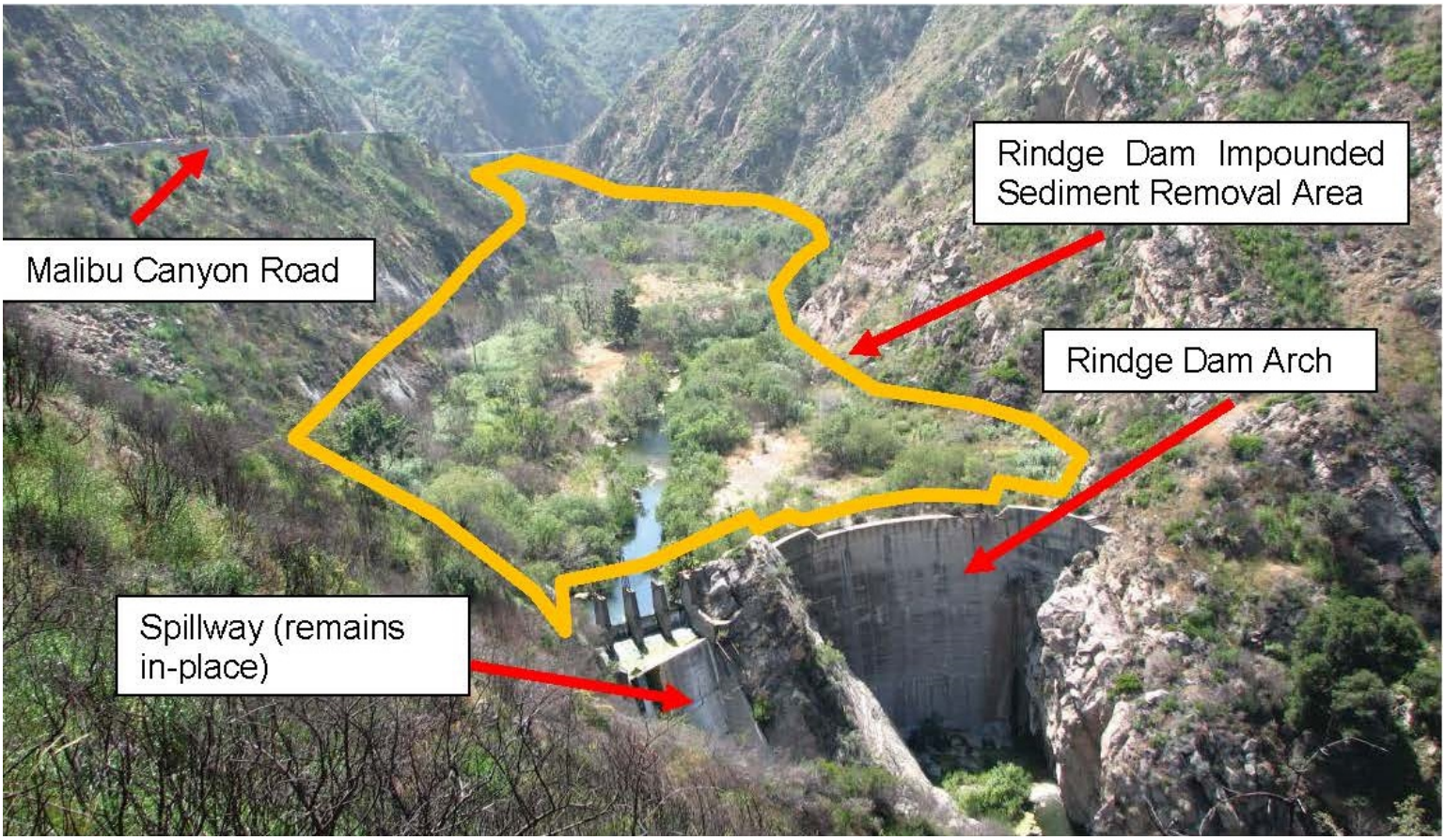


Figure 2. Rindge Dam and Impounded Sediment Removal Area



appropriate buffers will be identified in consultation with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to ensure impacts to nesting birds do not occur.

There are two project alternatives addressed in this BA, as the final Recommended Plan has not been confirmed. The two are very similar in terms of potential impacts to southern California steelhead and its designated critical habitat in Malibu Creek. The two alternatives are the National Ecosystem Restoration (NER) Plan and a Locally Preferred Plan (LPP). The major differences between the two are that the NER Plan removes the dam arch only while the LPP removes the dam arch and spillway structure. The difference here is primarily construction duration. Removal of the dam arch only would take less time than removal of the dam arch plus spillway, however the nature and extent of the impacts would otherwise be the same. The NER Plan places the sand fraction on the beach, while the LPP places the sand fraction into a near shore placement site. There is no difference in effect on southern California steelhead or its designated critical habitat between these two alternatives in this respect.

2.1 Action Area

Malibu Creek is located approximately 30 miles west of downtown Los Angeles, California. The drainage area covers approximately 110 square miles of the Santa Monica Mountains and Simi Hills. Malibu Creek and its tributaries drain into Malibu Lagoon and Santa Monica Bay. Elevations in the watershed range from over 3,100 feet at Sandstone Peak in Ventura County to sea level at Santa Monica Bay. It is the largest coastal watershed in the Santa Monica Mountains, and is encompassed by one of the largest areas of protected open space left in southern California, the Santa Monica Mountains National Recreation Area, managed by the National Park Service, California State Parks, Mountains Recreation and Conservation Authority, and others. Approximately two-thirds of the watershed is located in northwestern Los Angeles County, and the remaining one-third is in southeastern Ventura County. Malibu Creek runs at the base of Malibu Canyon, which contains steep to very steep sloping hills, in a generally southern route.

Tributary creeks, typically within steep mountainous canyons, converge to form Malibu Creek at Malibou Lake, a private residential and recreational community. Malibu Creek itself is approximately 10 mi in length and runs from Malibou Lake to Malibu Lagoon. Primary tributary flows into Malibu Creek in the lower portion of the watershed are from Las Virgenes Creek and Cold Creek. Stokes Creek and Liberty Canyon Creek are tributaries to Las Virgenes Creek, while Dark Canyon Creek is tributary to Cold Creek. A variety of streambed modifications are evident throughout the watershed, particularly in the upper, urbanized areas. However, the majority of the streambed in the area of study (Figure 1) remains unimproved (i.e., is not armored with stone or concrete on bank or bed), though at times natural meanders of the creeks are constricted by roads and other development.

Currently, Malibu Creek runs for a three-mile stretch below Rindge Dam that is listed as critical habitat for steelhead (NMFS 2005). Above Rindge Dam, up to the first impassable barriers on Malibu, Cold, and Las Virgenes Creeks, it is estimated that approximately 5-1/2 stream miles of good to excellent steelhead habitat are currently inaccessible as a result of the impassible barrier

created by the dam. Removal of the eight upstream barriers would restore access to an additional 9-1/2 miles of good to excellent steelhead habitat that are currently inaccessible as a result of the impassible barrier created by the dam and the nine upstream barriers. This increases available habitat from three to eighteen miles.

The three stream miles below Rindge Dam and approximately 5-1/2 stream miles above Rindge Dam, plus the immediate area surrounding the dam to be restored, and the small fish passage barriers upstream (along Las Virgenes and Cold Creek) of Rindge Dam that could be removed for additional fish habitat to open constitute the "Action Area". This area is depicted in Figure 3. The study area also includes shoreline and nearshore locations outside the watershed. A portion of the Ventura Harbor area was also included in the study area.

Malibu Canyon Road/Las Virgenes Road is the primary north/south route through the watershed, running generally parallel to Malibu Creek from Pacific Coast Highway (PCH, Highway 1) to the San Fernando Valley, past Interstate Highway 101 (Hwy 101). This route is one of the only major traffic arteries through the Santa Monica Mountains that connects the coastal (PCH) and valley (Hwy 101) routes.

2.2 Proposed Project

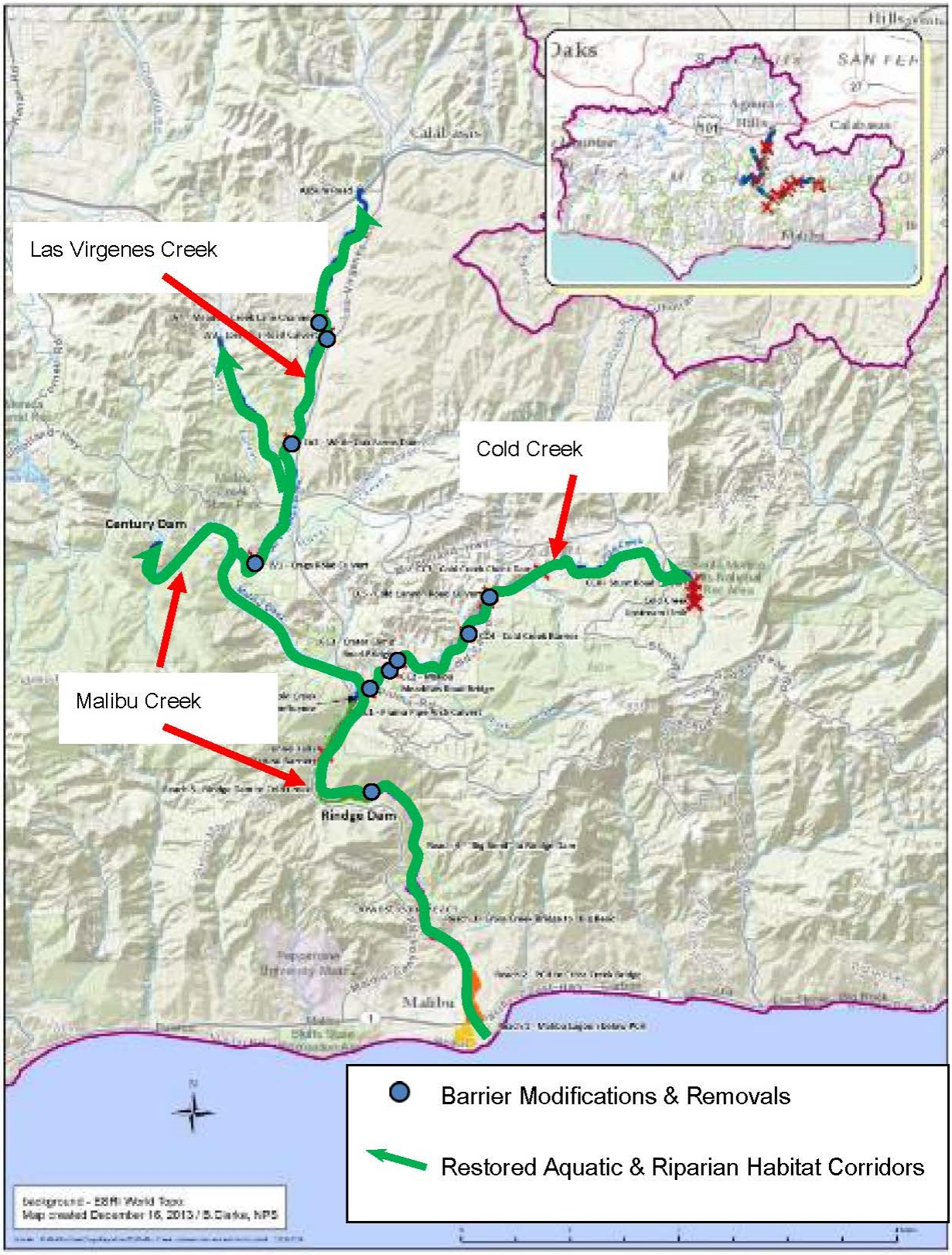
2.2.1 National Ecosystem Restoration (NER) Plan - Alternative 2d1—Dam Removal with Mechanical Transport, Upstream Barrier Removal, and Beach Placement

This alternative includes incremental removal of Rindge Dam's concrete arch over an estimated 7-year construction window, working during the dry seasons. The 780,000 cy of impounded sediment behind the dam would be mechanically removed using excavators, bulldozers, and other similar equipment, and hauled away using 20 cy trucks to offsite locations each construction season. The dam would be removed in lifts concurrently with the removal of impounded sediment. Dam concrete blocks would be transported to the Calabasas Landfill using 20 cy trucks.

Restrictions in the construction schedule due to environmental windows, weather, daily hauling restrictions, and other factors require the removal of sediment and dam and spillway structure to be phased over seven years. Vegetation will be removed outside of the nesting season for migratory birds (February 1 through August 15) to the extent possible to avoid impact to nesting migratory bird species. Weather restrictions prohibit construction activities during the winter rainy season of October-April when it is not safe to work in Malibu Canyon. Daily hauling is assumed to be limited to 6 hours for non-school days and Saturdays to comply with LA County highway restrictions, operating from 9am-3pm. No hauling would occur at night or on Sundays. On school days, trucking is limited to 5 hours per day, from 9-2.

During the first construction year, all the vegetation on the surface of the sediment impoundment area would be cleared, including mature trees and shrubs, with diversion and control of the creek water through construction of a temporary coffer dam and water pipeline. Dewatering wells would be installed to extract ground water from the impounded sediment area. The top layer of coarse-grained material from the impounded sediment area would be used to construct two access ramps

Figure 3 Restored Aquatic Habitat Connectivity - Upstream Barriers



for equipment and crew access to the site, allowing trucks and other equipment to travel in a southbound and northbound direction on Malibu Canyon Road. The former access road used to conduct surveys within the study area would be rebuilt to accommodate the southbound truck ramp.

About 100,000 cy of the gravel and cobble would be used to construct the temporary access ramps used to access the site during construction, to be removed at the end of construction and disposed of at the Calabasas Landfill. About 278,000 cy of beach-compatible sand would be placed on the shoreline. The remaining volume of gravel, cobble, and other material (including concrete and steel) would be permanently disposed of at the Calabasas Landfill.

The Rindge Dam concrete arch would be lowered each year in alignment with sediment removal, leaving an equal elevation for remaining impounded sediment and dam arch each storm season during construction. All creek flow would pass over the dam arch by the end of the first construction year since the top of the spillway, a concrete apron attached to a bedrock outcrop, would remain at a higher elevation than the remaining section of partially removed dam arch and impounded sediment. Aquatic habitat connectivity would be reestablished after the impounded sediment and dam arch is removed in an estimated 7 year timeframe.

It is expected that construction would stop during the storm season (~October to April) unless extended due to drought or lack of rainfall. Construction would resume the following year. Some ramp repairs are likely during construction as a result of damages due to storm flows and expected erosion of portions of the ramps during winter storm seasons. Additional clearing and grubbing would occur, as needed, at the restart of each construction season. Creek sites disturbed by excavation activities would be revegetated to enhance ecosystem function and values.

During the middle of the second construction year, the sediment excavated will be relatively homogenous beach-compatible sand. The excavation will produce sand for the following two and a half years, with the fifth year through seventh year of construction then yielding silts, clays, and other fine particles. The fine-grained sediment at the bottom of the impounded sediment would be permanently disposed of at the Calabasas landfill.

The beach compatible sediment will be transported along Malibu Canyon Road to a temporary storage area (Upland Site F) adjacent to Mulholland Highway west of Las Virgenes Road. Placement of the material at the Surfrider Beach placement site would occur after Labor Day and prior to Memorial Day during construction years 2-5 to avoid impacts to the summer beach season. Sands would be trucked from Upland Site F to the parking lot located adjacent to the Malibu Pier and stockpiled for placement on the beach, across from the rock rip rap.

The USACE provided chemical and grain size sediment test results of the impounded sediments to the Southern California Dredge Material Management Team (SC-DMMT) for review. The SC-DMMT is comprised of representatives from multiple regulatory and government agencies. The results indicate that the sand layer is suitable for beach or nearshore placement, an initial determination with which the SC-DMMT concurred.

Eight upstream barriers, four on Cold Creek and four on Las Virgenes Creek, would also be removed or modified as part of this project. Removal of those barriers combined with removal of Rindge Dam will open up an estimated 15 miles of creek to southern California steelhead. However, Rindge Dam will still be an impediment to southern California steelhead migration during removal of the upstream barriers, so that southern California steelhead will not have access to any of the sites during construction. Implementation of BMPs to control turbidity and the lack of access will result in no effect to southern California steelhead during removal of any of the upstream barriers.

2.2.2 Locally Preferred Plan (LPP) - Alternative 2b2— Dam and Spillway Removal with Mechanical Transport, Upstream Barrier Removal, and Nearshore Placement

The CDPR intends to pursue Alternative 2b2 as the LPP. The LPP is similar to the NER Plan in regards to actions described for the Rindge Dam and impounded sediment removal. The strategy for modification and removal of the upstream barriers is also the same as the NER plan. The differences in these plans include the method of transport and placement of the sands, using trucks and barges for nearshore placement, and adding the removal of the Rindge Dam spillway.

The likely LPP allows for direct transport of sediment mined from the Rindge Dam impounded sediment area up Malibu Canyon and Las Virgenes Road, to Lost Hills Road, U.S. Highway 101 and the Ventura Harbor about 41 mi away from the dam. Material would be offloaded from the trucks and placed on barges to be transported to the Malibu nearshore placement site, to the east of the pier. The use of barge allows for more flexibility in the location for placement of mostly sands, reducing risks of habitat and species disturbances during placement activities. The location of the nearshore placement site was based on a survey of the nearshore areas (USACE, 2016) in the project area. The site was selected based on the sandy nature of the bottom avoiding impacts to rocky reef or vegetated bottoms.

As in the NER Plan, the fine-grained sediment at the bottom of the impounded sediment would be permanently disposed of at the Calabasas landfill. About 100,000 cy of the gravel and cobble amount will be used to construct the temporary access ramps used to access the site during construction, to be removed at the end of construction and disposed of at the Calabasas Landfill. About 278,000 cy of sand would be placed in the nearshore area by the Malibu Pier. The remaining volume of gravel, cobble, and other material (including concrete and steel) would be permanently disposed of at the Calabasas landfill.

As in the NER Plan, eight upstream barriers, four on Cold Creek and four on Las Virgenes Creek, would also be removed or modified as part of this project. Removal of those barriers combined with removal of Rindge Dam will open up an estimated 15 miles of creek to southern California steelhead. However, Rindge Dam will still be an impediment to southern California steelhead migration during removal of the upstream barriers, so that southern California steelhead will not have access to any of the sites during construction. Implementation of BMPs to control turbidity and the lack of access will result in no effect to southern California steelhead during removal of any of the upstream barriers.

Habitat Evaluation outputs remain the same as those calculated for the NER Plan, but overall costs increase. The likely LPP construction timeframe is estimated to be 8 years.

3 Status of Species and Critical Habitat in the Action Area

One federally-protected fish species under NMFS jurisdiction was identified as potentially occurring in the Action Area. The federally protected species are detailed below. Malibu Creek from Rindge Dam downstream to the ocean is designated as critical habitat (NMFS, 2005) for this Distinct Population Segment (DPS).

3.1 Fish

3.1.1 Southern California Steelhead (Oncorhynchus mykiss)

Southern California steelhead (*Oncorhynchus mykiss*) were listed as endangered on August 18, 1997. Critical habitat was designated on September 2, 2005. Malibu Creek from its mouth up to Rindge Dam is southern California steelhead critical habitat in the Action Area.

This species is an ocean-going form of rainbow trout that are native to Pacific coast streams from Alaska south to northwestern Mexico (Moyle 1976). Historic distribution of southern California steelhead included virtually every coastal stream from Monterey, San Luis Obispo, and Santa Barbara Counties south to San Diego County and Baja California. River systems include the Los Angeles and San Gabriel River and Malibu and Topanga Creeks in Los Angeles County; San Onofre, San Mateo Creeks, Santa Margarita, San Luis Rey, San Diego and Tijuana Rivers in San Diego County (NMFS, 2012). It was common to find southern California steelhead in coastal lagoons through the 1930's (Swift et al. 1993).

The population of steelhead in the southern California evolutionary significant unit (ESU) is federally endangered and has adapted to survive the semi-arid climates and the rainfall patterns of southern California. The population is currently known from San Luis Obispo County south to San Luis Rey River watershed in San Diego County (CDFW 2010; NMFS 1997; Wong 2004).

Once hatched, juvenile steelhead may stay in freshwater for one or two years before migrating to the ocean. This outward migration primarily occurs during the winter and spring months when river flows are relatively high. Steelhead mature at age two to four and migrate back upstream to natal spawning areas. The upstream migration generally occurs from January through March, but is dependent on the intensity of storms and subsequent outflow. Females create a depression (redd) in the gravel of the streambed to lay eggs, males fertilize the eggs with milt, and the nest is covered by the female who loosens gravel immediately upstream, which the stream currents carry downstream to cover the eggs. The eggs remain in the nest for a period of weeks or months before hatching.

Populations in California have declined primarily due to water development (dams, reservoirs, and water harvest), land use practices, and urbanization.

Currently, the 3-mile stretch of Malibu Creek below Rindge Dam is suitable steelhead habitat. Good quality habitat is located below the dam (Abramson 1998; Dagit and Abramson 2007; Dagit and Krug 2011). Above Rindge Dam it is estimated that some 5-1/2 miles of good to excellent steelhead habitat are currently inaccessible as a result of the impassible barrier created by the dam. Removal of eight upstream barriers would restore access to an additional 9-1/2 miles of stream once Rindge Dam is removed, resulting in an increase in accessible stream from 3 to 18 miles as a result of the proposed project. The Final Rule issued by the NMFS (70 FR 170 pp52488, Sep. 2, 2005) on critical habitat for the Steelhead Evolutionarily Significant Units identifies the reaches downstream of Rindge Dam as critical habitat. Removal of Rindge Dam and restoration of access to upstream reaches is a recommendation of the Southern California Steelhead Recovery Plan (NMFS 2012) concluding that historically this currently inaccessible habitat provided the principal spawning and rearing habitat for steelhead within the Malibu Creek watershed. Steelhead occur below Rindge Dam on Malibu Creek.

4 Environmental Baseline and Cumulative Effects

The environmental baseline is part of regulations implementing Section 7 of the ESA. The baseline summarizes the past and present impacts of federal, state or private actions and other activities in the Action Area. The environmental baseline also lists the anticipated effects of all proposed federal projects in the Action Area that have undergone Section 7 consultation, and the impacts of state and private actions that are contemporaneous with the consultation in progress (50 C. F. R. 402.02). Section 4.1 describes the existing conditions within and adjacent to the Action Area. Section 4.2 discusses cumulative effects.

4.1 Description of the Environmental Baseline

The Malibu Creek watershed drainage area covers approximately 110 mi^2 of the Santa Monica Mountains and Simi Hills. Elevations in the watershed range from over 3,100 ft at Sandstone Peak in Ventura County to sea level at Santa Monica Bay. Malibu Creek runs at the base of Malibu Canyon, which contains steep to very steep sloping hills, in a generally southern route. Malibu Creek itself is approximately 10 mi in length and runs from Malibou Lake to Malibu Lagoon. Although the watershed is modified by residential development, reservoirs, and agricultural operations, a large majority of the land is held as part of the Santa Monica Mountains National Recreation Area (SMMNRA), including Malibu Creek State Park, operated by the Sponsor, or is part of unincorporated Los Angeles County. Malibu Creek from Malibou Dam to its mouth is also part of the Malibu Creek State Park, and is the focus for restoration opportunities.

A variety of streambed modifications are evident throughout the watershed, particularly in the upper, urbanized areas. However, the majority of the streambed in the action area remains unchannelized (i.e., is not armored with stone or concrete on bank or bed), though at times its natural meander is constricted by roads and other development. Rindge Dam, built in 1926, is the largest disruption to stream flow and aquatic and terrestrial habitat connectivity on Malibu Creek between Malibou dam and the Pacific Ocean. It was built as a private water supply dam for the Rindge family ranch and other business concerns. The reservoir originally provided approximately 574 acre-ft (af) of water storage for agricultural needs. No reservoir currently exists behind Rindge

Dam, and the sediment impounded behind the dam has filled to the crest of the dam's spillway, nearly 100 ft above the elevation of the original streambed. It is estimated that approximately 780,000 cy of sediment, approximately one-third of which could be used beneficially to restore area beaches, are impounded behind the dam.

Malibu Creek is a major drainage that connects coastal regions of Los Angeles County with interior regions of Los Angeles and Ventura counties. As such, Malibu Creek is an important regional corridor linking riparian ecosystems from the immediate coastal plain with the interior plains and valleys of the region. The 110 mi^2 study area, including government managed lands by National Park Service, California State Parks, and Mountains Recreation and Conservation Authority, with its extensive non-developed areas, provides a wealth of biological resources. The Santa Monica Mountains support a remarkably abundant wildlife community considering its close proximity to one of the largest urban areas of the United States. The Santa Monica Mountains are reported to support over 450 vertebrate species, including 50 mammals, 384 species of birds, and 36 reptiles and amphibians.

The vegetation in the action area provides for a variety of habitat types, including sensitive riparian and emergent wetland habitats. Riparian and emergent wetlands occur throughout the Creek and provide wildlife with shade, protection from predators, foraging habitat, nesting, and breeding habitat. The upland vegetation communities that occur adjacent to the stream (e.g., chaparral, annual grassland and oak savannah) support a wide variety of species, and contribute to the overall wildlife species diversity.

In Malibu Creek, within the project area, wildlife species can move relatively unimpeded downstream or upstream of Rindge Dam, but not over the dam. East west migration is inhibited by a heavily used scenic byway of Malibu Canyon Road and precipitous slopes. In addition, Malibu Canyon Road serves as a partial barrier to wildlife movement because of the amount of noise, motion, light, and startle impacts associated with traffic on this highway.

Currently, the three-mile stretch of Malibu Creek below Rindge Dam is listed as critical habitat for steelhead (NMFS 2005). Above Rindge Dam it is estimated that approximately 5-1/2 stream miles of good to excellent steelhead habitat are currently inaccessible as a result of the impassible barrier created by the dam. Removal of eight upstream barriers on the Cold Creek and Las Virgenes Creek tributaries would restore access to an additional 9-1/2 miles of stream once Rindge Dam is removed, resulting in an increase in accessible stream from 3 to 18 miles as a result of the proposed project. The National Marine Fisheries Service (2004) had previously requested comment on the proposal that the inaccessible reaches of Malibu Creek above Rindge Dam be identified as critical habitat. Although the area above the dam is not currently designated critical habitat, NMFS concluded that historically this currently inaccessible habitat provided the principal spawning and rearing habitat for steelhead within the Malibu Creek watershed (NMFS 2004). Historical records show that runs within Malibu Creek have been estimated as high as 1,000 steelhead (Nehlsen et al. 1991), where the current population is estimated in the dozens (Franklin et al. 1989; Dagit and Abramson 2007; and Dagit and Krug 2011). Only one dying fish was observed in 2017 to date (Rosi Dagit, personal communication).

The Rindge Dam site is also an attractive nuisance, which is contributing to steelhead habitat impacts. Illegal recreation is resulting in increased erosion on adjacent slopes from volunteer trails. increased water turbidity, and accumulated trash and other pollutants.

Los Angeles County Department of Beaches and Harbors maintains 19 beach areas throughout Los Angeles County. Malibu Surfrider Beach is a county maintained beach within the study area. Surfrider Beach is often identified as one of southern California's premier surfing areas. Recreational opportunities on Surfrider Beach include surfing, swimming, and fishing (Los Angeles County Department of Beaches and Harbors 2005). The proposed beach placement site for the NER Plan is on Surfrider Beach east of the Malibu Pier and is outside the primary surfing area located adjacent to Malibu Lagoon. Recreational uses are beach-going and swimming. Fishing takes place off the adjacent Malibu Pier. The proposed nearshore placement site for the LPP is located immediately offshore of this same beach.

4.2 Critical Habitat

The 3-mile stretch of Malibu Creek below Rindge Dam is listed as critical habitat for the southern California steelhead (NMFS, 2005). Primary Constituent Elements (PCE) of critical habitat for southern California steelhead were listed in the Final Critical Habitat Designation for the southern California steelhead (NMFS 2005) and were used in designating Malibu Creek as critical habitat. They are:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.

2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and 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 free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural

cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Potential impacts are discussed relative to these PCEs in Section 5.2 below.

4.3 Cumulative Effects

4.3.1 Future and Concurrent Actions

Projects proposed in the immediate vicinity of the Action Area that may affect biological resources include:

Malibu Lagoon

Moffat and Nichols, Heal the Bay, The California Coastal Conservancy, California Department of Parks and Recreation, and the Resource Conservation District of the Santa Monica Mountains have recently implemented a restoration and enhancement plan for Malibu Lagoon within the Malibu Lagoon State Park in order to: "restore and improve the natural structure and function of the lagoon ecosystem, including water quality, circulation, habitat, and biodiversity, and to enhance public access and education opportunities" (JSA 2006). While initial construction has been completed, monitoring and management activities will still be ongoing.

Malibu Creek Watershed

The Malibu Creek Watershed Council prepared a *Malibu Creek Watershed Natural Resources Plan* in 1995 that "addresses watershed resources, water quality and quantity issues, and pollution reduction strategies in the Malibu Creek watershed" (MCWC 2008a). A main highlight of the plan are 44 action items that provide the guiding principles for restoration in the watershed. The following is a list of the top ten watershed restoration priorities included in the *Making Progress: Restoration of the Malibu Creek Watershed* report (MCWC 2008b).

- Map all existing and potential sources of pollution in the watershed. Implement measures to pinpoint sources of pollution in both the upper and lower watershed.
- Acquire key parcels of land for habitat protection.
- Remove *Arundo donax* from the entire watershed.
- Review general land use practices and past practices for each city and for unincorporated areas in the watershed to predict the impacts on public health, natural and aquatic resources, and recreational benefits.
- Reduce sedimentation and erosion along stream banks, roadways, and at construction sites.
- Implement the coordinated watershed-wide monitoring plan developed by the Monitoring and Modeling subcommittee and develop a centralized database for the monitoring data.

- Synthesize water quality data to establish minimum standards for native species of locality and identify where gaps in data still exist.
- Develop/revise monitoring plan to address data gaps.
- Develop a plan to identify, remove, and prevent exotic plant and animal species from impacting the watershed.
- Help/encourage watershed cities to develop uniform development plans and ordinances which would:
  - Set slope minimums for hillside building and construction activities.
  - Establish native plan vegetation requirements.
  - Prevent disturbances to natural drainage channels.
  - Retain runoff on-site to the maximum extent practicable (including use of pervious surfaces).
  - Prevent sediment loadings to creeks/streams both during and after construction.
  - Review development planning on a watershed basis, rather than a project-by-project basis.
  - Set standards for streets, sidewalks, driveways, and parking lots.
  - Establish 200-ft buffer-zone standards near sensitive habitats.
  - Ensure adequate monitoring and/or enforcement activities so that these requirements are met" (MCWC 2008b).

Although no formal environmental documentation of the effects of these proposed actions has been developed by the Malibu Creek Watershed Council, council members are actively working on the priority goals.

Malibu Creek State Park

The CDPR completed the *Malibu Creek State Park General Plan and Final Environmental Impact Report* (CDPR 2005) outlining "a broad vision for the long-term management of" Malibu Creek State Park. The general plan outlines the goals and guidelines for work within the Malibu Creek State to ensure protection of natural and cultural resources, while providing a quality visitor experience.

Chapter 3 of the General Plan and EIR provides more detail on specific resources and area goals. Chapter 4 summarizes these components by stating: "Chapter 3 comprises two major components: goals and guidelines and area-specific management and facility prescriptions. Management goals and supporting guidelines in the General Plan are designed to address the currently identified critical planning issues and to mitigate the adverse environmental effects of uses that would be permitted in the Park. Area-specific management and facility prescriptions are not intended to represent site-specific facility planning in terms of precise placement of facilities. The prescriptions will serve as a guide for the placement of proposed future developments. Under the tiered environmental process, changes from existing conditions and operations proposed by the Department would require site-specific planning and environmental review as each individual development project (e.g., Area Development Plans) is proposed to avoid or minimize impacts to resources. Based on the area-specific management and facility prescriptions, the Department can implement the issue-specific management goals and guidelines presented in the General Plan to the most appropriate locations to ensure consistency between uses and management".

Impacts for the General Plan include: the large open space and natural areas of the Park host a variety of plant and animal species, a number of which are rare or endangered. The Park's biologically diverse and sensitive areas are threatened by development encroaching upon its boundaries. This General Plan encourages not only maintenance and preservation of the Park's natural resources, but also development of new Park facilities. Facilities development, infrastructure improvements, increased visitation, and invasive species in the Park all have the potential to impact the native species and wildlife corridors in the Park. There are no [Habitat Conservation Plans] (HCPs) or [Natural Community Conservation Plans] (NCCPs) in effect for the Park. Potential impacts to biological resources would be reduced to below the level of significance with implementation Goals NR-1, NR-2, NR-3, NR-4, NR-5, NR-6, NR-7, TAP-1, INT-1, REC-1, FAC-1, SR-1, CTA-1, WAS-1, and the associated guidelines. These goals and guidelines would reduce impacts and improve protection of the natural biological resources within the Park.

Vegetation and wildlife within the Park have been exposed to many land management practices and outside factors that have affected the ecological conditions in the Park. Implementation of the General Plan has the potential to impact native species within the Park; therefore a thorough understanding of the natural ecosystems and relationships amongst the biological resources in the Park is needed to provide a basis for management and preservation. General Plan Goals NR-1, NR-2, and NR-3 and the associated guidelines outline study methods and scientific research for the vegetation communities in the Park. Guidelines NR-1.1, NR-2.1, NR-2.2, and NR-3.1 would require research, surveys, and inventory, of both native and invasive species, which would provide a basis for management. Guidelines NR-1.2 and NR-3.2 require specific management actions and coordination with agencies that would implement the plans to restore and maintain the resources, while minimizing human impact from Park usage.

Implementation of Goals NR-4 and NR-5 are similar to NR-1 through NR-3, but focus specifically on wildlife resources. Similar to the goals and guidelines for vegetation, these goals require research, surveys, and an inventory of the wildlife in the Park. Guideline NR-4.2 specifically requires regular monitoring of wildlife populations and movement that would provide a baseline for future management efforts. Guideline NR-4.3 entails the implementation of breeding and reintroduction programs, if it is determined that it would enhance native populations and is scientifically feasible. Guideline NR-5.1 identifies the need to further evaluate the natural preserve boundaries for maximum resource protection. The research and management plans that would result from implementation of these goals would improve the knowledge base and protect the biological resources in the Park.

Vegetation and wildlife in the Park have experienced periodic and, at times, severe fire events that have the potential to greatly impair or promote regeneration and growth. Goal NR-6 highlights the need for appropriate, scientifically-based wildfire management practices. Potentially detrimental effects to biotic resources as well as structures will be minimized to less than significant through implementation of a wildfire management program, creation of buffer zones, and education, as outlined in Guidelines NR-6.1 through NR-6.4, respectively.

In addition to the Park-wide planning components, the General Plan also provides goals and guidelines for specific areas within the Park. Tapia Park has high visitation, and is home to important oak woodland resources. Goal TAP- 1 and Guideline TAP-1.1 require proper care and management of the oak woodlands, the health of which is inversely correlated to Park usage, and is therefore a good indicator of over-use in the Park. Implementation of Goal TAP- 1 would ensure that significant impacts do not occur to the oak woodland communities of Tapia Park.

Implementation of the General Plan would improve Park features, in turn encouraging increased visitation. The increase in Park users would expose biological resources to outside factors that have the potential to influence the habitat and relationships of the vegetation and wildlife in the Park. Implementation of Goal INT-1 requires and encourages education and enhanced visitor knowledge of the natural, cultural, historic, and aesthetic resources in the Park. Guideline INT-1.3 specifically requires a comprehensive education program that would help to protect the natural resources from the threat of human influence: guideline INT-2.3 provides additional guidance on key topics for the interpretive program. Additionally, REC-1, FAC-1 and CTA-1 provide guidelines for the locations and consolidation of facilities, services, trails, and access to the Park, thereby reducing natural resource exposure to the new developments within the Park. Education of Park visitors and careful Park development, combined with research and management efforts, would protect and enhance the biological resources in the Park and would reduce impacts to less than significant level".

As noted above, because much of the area is protected within Malibu Creek State Park, cumulative effects on special-status species in the action area are primarily related to temporary construction impacts, the majority of which are located outside critical habitat. These include temporary loss of habitat, potential mortality associated with heavy equipment usage, and disturbance of foraging, roosting, and nesting habits due to construction noise and other disturbance. Long-term changes in bed elevation are expected as Malibu Creek moves toward a new equilibrium of water and sediment regimes in the absence of Rindge Dam. These changes are likely to redistribute habitat types along the creek, but are not expected to do so in a manner adverse to aquatic organisms in the creek. However, the primary purpose of the projects being undertaken is preservation and restoration of habitat; therefore, the overall cumulative effect would be beneficial.

5 Effects of the Proposed Action

The effects of the Proposed Action were estimated based on the following conditions:

A qualified biologist would be responsible for overseeing compliance with protective measures for the biological resources during clearing and construction activities within designated areas.

Implementation of a spill prevention plan would reduce the risk of fuel or oil spills from construction and transportation equipment.

The implementation of Best Management Practices (BMPs) would control soil erosion due to construction activities, and minimize potential construction-related effects on water quality. BMP's include: oil-absorbing floating booms will be kept onsite and the contractor will respond

to aquatic spills during construction; vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids, If such leaks or drips do occur, they will be cleaned up immediately, equipment maintenance and/or repair will be confined to one location, and runoff in this area will be controlled to prevent contamination of soils and water; a Storm Water Pollution Prevention Plan (SWPPP) will be required to prevent construction materials (fuels, oils, and lubricants) from spilling or otherwise entering the creek.

Effects of the Proposed Action would result from demolition and removal activities adjacent to and within the riparian corridor, in upland terrestrial areas, and in shoreline beach areas for the NER Plan/nearshore placement area for the LPP. These activities would be short-term in duration. Vegetation loss would be limited to disturbance of riparian, upland, and beach areas which would be restored following disturbance.

No changes are expected to the downstream reaches during winter storms that occur during years that construction takes place. Rindge Dam does not impede sediment flows during winter storms because the area behind the dam is full so that flows carry sediments over the dam into the lower reaches. That would continue to happen during winter storms in the construction years when construction would be halted. The impound area upstream of the dam would be cleared as part of the initial site preparation work. This does mean that increased sediments could be available for transport downstream during winter storms. However, this area is relatively small compared to the overall watershed and will decrease over time as the creek is moved down into a narrowing canyon. The construction contractor will be required to prepare the site for winter each year adding BMPs to reduce introduction of turbidity below the dam to the maximum extent feasible. There would be no effect to the species or to designated critical habitat.

Eight upstream barriers, four on Cold Creek and four on Las Virgenes Creek would also be removed as part of this project. Removal of those barriers combined with removal of Rindge Dam will open up an estimated 15 miles of creek to southern California steelhead. However, Rindge Dam will still be an impediment to southern California steelhead migration during removal of the upstream barriers, so that southern California steelhead will not have access to any of the sites during construction. Implementation of BMPs to control turbidity and the lack of access will result in no effect to southern California steelhead during removal of any of the upstream barriers.

A fish rescue and relocation plan will be developed prior to commencing work each year for southern California steelhead. The fish rescue and relocation will be conducted under the supervision of a qualified biologist and will entail measures to reduce effects to steelhead and other fish associated with in-water construction activities. Procedures will be established in consultation with the CDPR and NMFS during Preliminary Engineering Design (PED).

5.1 Effects on Federally Protected Species – Southern California Steelhead

Southern California steelhead are known to inhabit Malibu Creek for spawning and rearing. However, they are unable to pass above Rindge Dam. Sediment removal efforts have the potential to affect steelhead and its habitat during and immediately after dam removal. Debris generated during dam removal, could fall into the pools immediately downstream of the dam posing a hazard

to any individuals located in the pool. Minor sediment volumes may also enter Malibu Creek during construction (although considered to be minimized by implementation of BMPs to control water flow and sediment removal). The resulting turbidity could affect individual southern California steelhead in pools below the dam. Minor amounts of sediment may remain at the end of each construction year, including the final construction period that could be flushed down the creek. These sediments could alter stream bottom habitat until stream flows flush them out to sea. These are considered to be temporary construction impacts.

Due to the higher likelihood of impacts to the immediate downstream reach, the Corps is proposing to catch and relocate any southern California steelhead found in the Dam Pool located at the face of the dam and from and the Big Boulder Pool prior to the initiation of construction activities (see 5.4.1). Catch, transport, and relocation will be conducted in consultation with the CDPR and NMFS and will be repeated each year prior to the initiation of construction activities for that year.

Long-term impacts include changes to river hydrology associated with a free-flowing creek including degradation and aggradation of stream sediments. This may result in a shift of habitat types within the three mile reach below the dam site, but should not result in any overall habitat changes in this reach. The removal of Rindge Dam and opening of upstream habitat for fish passage, spawning, and rearing will provide long-term benefits for steelhead allowing access to a greater range of good quality habitat for spawning and early life history stage survival and growth.

5.1.1 NER Plan

The temporary construction impacts described above would persist over the seven year construction period plus one year post-construction.

5.1.1 LPP

The temporary construction impacts described above would persist over the eight year construction period plus one year post-construction.

5.2 Effects on Designated Critical Habitat – Southern California Steelhead

The proposed project has the possibility of short-term, adverse effects to designated critical habitat during construction. However, these effects are short term in nature and will not lead to adverse modification of the critical habitat. These effects will be primarily to one of the six PCEs (PCE 1) identified for critical habitat for southern California steelhead.

PCE 1 relates to freshwater spawning sites. Due to the addition of fine sediments during project construction some downstream areas are expected to accumulate sediments while others may see increased erosion. The reach immediately downstream of the dam is expected to be one of those areas that accumulate sediments. BMPs are expected to control sediment entry into the stream to the maximum extent feasible, however there is no guarantee that sufficient sediments may enter the creek that could affect the ability of the pool immediately adjacent to the dam to function as a spawning site. BMPs include channelizing the creek flow around the work area, revegetation of

disturbed areas, sloping the final impound surface at the end of each construction year, cutting the Dam simultaneously with reducing impound elevations, construction of a cofferdam for control of flows, removal of the cofferdam during the winter season, development of slope stability measures for areas previously saturated by groundwater in the impounded sediment footprint, and construction ramp stability measures. Added measures may be imposed by the California Coastal Commission as part of it Coastal Consistency Determination review prior to release of the Final IFR.

The CDPR will be responsible for obtaining a Streambed Alteration Agreement from the California Department of Fish and Wildlife that may also add special conditions. BMPs to control turbidity are likely to be added as conditions for the 401 Water Quality Certification. Certification will be sought from the Los Angeles Regional Water Quality Control Board during Preliminary Engineering Design (PED) phase of the project. Additionally, a storm water pollution prevention plan (SWPPP) will be prepared to address potential impacts to storm water quality from construction equipment, construction crews, and construction practices. The SWPPP shall include best management practices to prevent accidental spills and other contamination of Malibu Creek, and shall include provisions for in-the-dry construction at the barrier sites, and regular monitoring of water quality, including turbidity, during construction and in the winter runoff season. The SWPPP will include a provision for adaptive measures to be taken in the event of excess contamination or turbidity. Construction will not be conducted during the winter rainy season, thus not affecting the species or its critical habitat during times when the lagoon is more likely to be open allowing access to and from the ocean.

Downstream reaches, including Malibu Lagoon, are not expected to be significantly impacted during construction. The amounts of sediment flushed downstream are expected to be minor and within the normal range of existing conditions. Long-term impacts include changes to river hydrology associated with a free-flowing creek including degradation and aggradation of stream reaches. The removal of Rindge Dam and restoration of more natural sediment regimes will provide long-term benefits for Malibu Lagoon. A normal hydrologic regime is expected to establish after construction restoring water hydrology and quality to the creek. PCEs 2 & 3, related to freshwater rearing sites and freshwater migration corridors respectively, are not expected to be affected (either adversely or beneficially) either during or after project construction. Malibu Creek should retain its ability to support southern California steelhead rearing and migration.

The lack of impacts to Malibu Lagoon also means that PCE 4 will not be affected. PCE 4 relates to estuarine areas free of obstruction. Malibu Lagoon serves as the estuarine endpoint of Malibu Creek and is the entry/exit point for southern California steelhead migrating into and out of Malibu Creek into the Pacific Ocean. That estuarine endpoint is not expected to be affected by the proposed project and is expected to retain its current functionality for southern California steelhead.

The project is not expected to impact the nearshore marine areas off shore of Malibu Creek. PCE 5, related to the quality of nearby marine areas, would not be affected. Placement of beach-compatible either on the beach or in the nearshore would have negligible impacts due to the relatively small volume to be placed over an extended three-year period. Marine surveys of the

nearshore placement site have confirmed that the nearshore placement site is unconsolidated sandy bottom habitat (USACE 2016).

Placement of sand, either on the beach for the NER Plan or into the nearshore for the LPP, is not expected to affect offshore marine areas (PCE 6) as habitat for southern California steelhead. Turbidity resulting from sediment placement is expected to be highly localized and short term and to be easily avoidable by individual southern California steelhead. Therefore, no affect is expected from the project on PCE 6.

5.3 Effects of Alternatives to the Proposed Action

Currently both action alternatives (the NER Plan (Alternative 2d1) and the LPP (Alternative 2b2)) considered in this Biological Assessment include removal of the dam arch; the LPP would additionally remove the dam spillway. The major difference involved in removal of the dam versus dam and spillway is the additional year of construction required for dam and spillway removal. Under both alternatives the proposed action is to mechanically remove all sediments beneficially reusing beach-compatible sands on the beaches for the NER Plan or into a nearshore placement site for the LPP.

Other alternatives were evaluated and dismissed for a variety of reasons. The major differences are in the method for removing accumulated sediments from behind the dam. Removal of the Rindge Dam impounded sediments by natural transport (Alternative 3) places all of the accumulated sediments into the downstream reaches resulting in substantial impacts to downstream habitats, including critical habitat for the southern California steelhead and tidewater goby. Removal of sediments by a hybrid mechanical/natural transport (Alternative 4) also results in decreased impacts to downstream habitats from the use of natural transport to move some of the accumulated sediments downstream, but still results in substantial impacts to downstream habitats, including critical habitat for the southern California steelhead and tidewater goby. The action alternatives involving natural transport of the accumulated sediments, therefore, would likely result in a greater chance for adverse impacts to California steelhead likely resulting in findings of adverse impacts, but still not to a jeopardy determination for the continued existence for the distinct population segment. The action alternatives involving natural transport of the accumulated sediments would also likely result in adverse modifications to designated critical habitat for the southern California steelhead. Alternatives 3 and 4 also require the construction of floodwalls in Reach 2 of Malibu Creek.

The only other alternative is the No Action Alternative. Under the No Action Alternative, Rindge Dam would remain in place. Currently the dam holds 780,000 cubic yards of sediment allowing only silt and clay to pass over and downstream of the dam. This will allow for continued aggradation in the reach immediately downstream of the dam upwards of 9.8 feet over 75 years. This hydrologic disruption may cause stream narrowing, erosion, and development of a coarse streambed altering vegetation composition and habitat diversity. The existence of the dam will continue to act as a wildlife barrier. Species that depend upon Malibu Creek to pass up and downstream would continue to be unable to pass from coastal to interior habitats over Rindge Dam. As with vegetation and habitat impacts, altered hydrology will reduce the movement of

large sediment particles such as gravel and cobble downstream of the dam. This sediment starvation of the creek's downstream reaches may impact steelhead spawning habitat. Additionally, with the dam in place 15 miles of upstream habitat will remain unavailable to steelhead. As with general wildlife impacts, the dam will continue to function as a wildlife barrier and impacts on special-status species will be similar to those discussed under wildlife impacts.

5.4 Proposed Conservation Measures

5.4.1 Southern California Steelhead

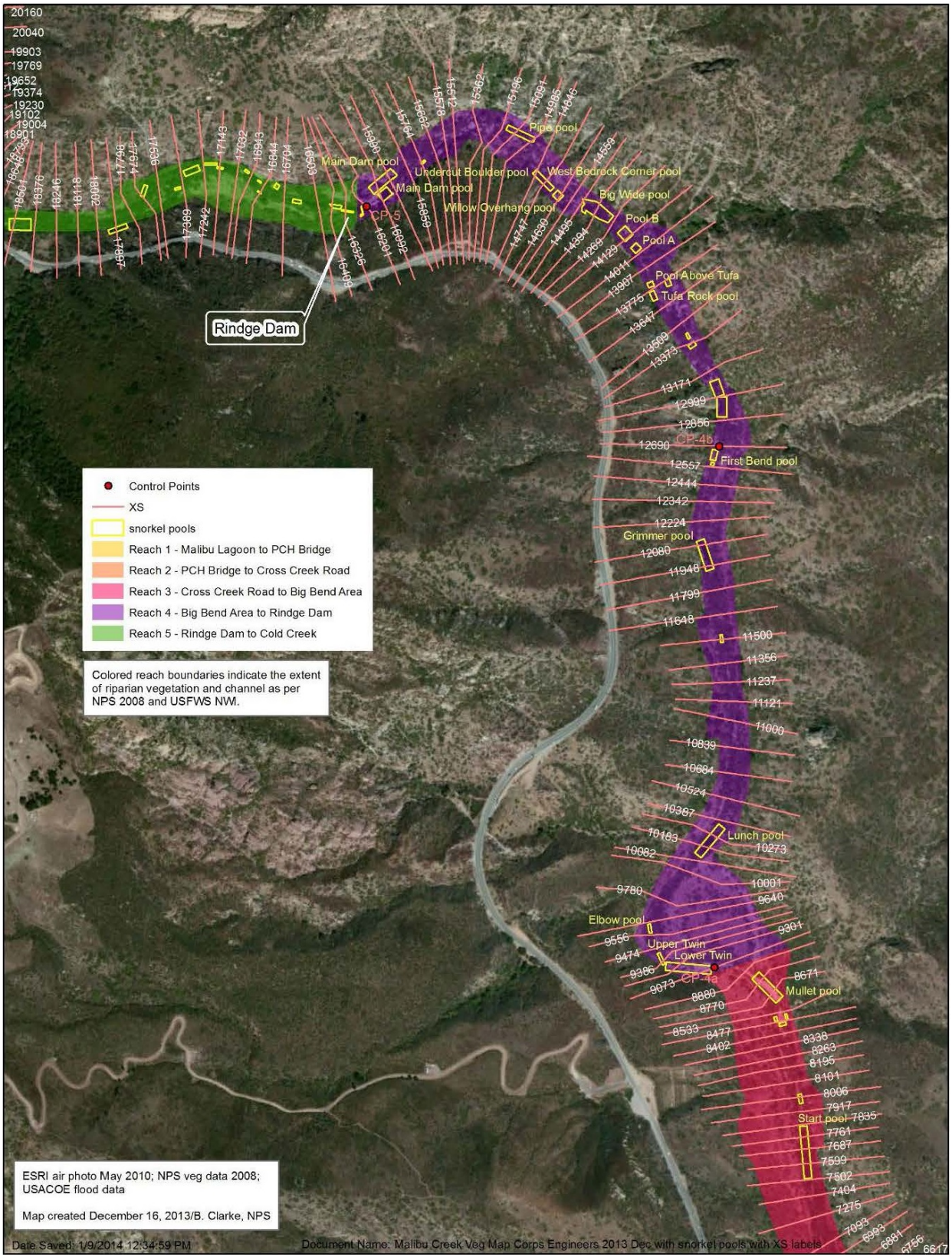
In order to avoid direct affects to southern California steelhead during dam removal activities, pre-construction surveys will be conducted each year of construction to identify the presence/absence of fish below the dam within the construction zone. If southern California steelhead are present, their relocation to suitable habitat will be coordinated with CDPR and NMFS. Relocation efforts would focus on suitable pools located within Malibu Creek downstream from the dam and out of the area of influence from construction activities. This minimizes the shock of catch, transport, and release, and increases chances for survival for individual fish. Catch and release would utilize standard methodology either seining or efishing, subject to review by the NMFS. Individuals handling steelhead will be properly permitted to do so through the NMFS.

Steelhead would be removed from the Main Dam Pool and the Undercut Boulder Pool and relocated downstream. Pool locations are shown on Figure 4. Blocking nets would be installed across Malibu Creek downstream of the Big Boulder Pool to prevent relocated steelhead from swimming back upstream into either of these two pools. There is a location between the downstream end of that pool and a short run/riffle complex where nets could reasonably be set. Blocking nets will need to be long enough to cover bankfull width, 2 m tall and mesh can be 0.25 -1 cm. They can be anchored with fence posts and zip ties.

Construction BMPs to reduce turbidity will reduce the likelihood for downstream impacts during construction. Specific measures will be determined during PED in consultation with CDPR and NMFS as well as the Regional Water Quality Control Board. Recommended measures are discussed above in Section 5.1.

Assuming continued funding is available, current monitoring of southern California steelhead in Malibu Creek would continue and should provide both a pre-construction baseline as well as post-construction monitoring of recovery, including the use of the added habitat by returning southern California steelhead.

Figure 4. Mainstem Pools and Refugia



6 Conclusions and Determination

Table 2 lists the expected outcome based on the above information and the data collected up to this point. Conservation measures have been proposed for all species that may be affected by the Proposed Action whether or not they will be adversely affected in order to avoid jeopardy. Construction impacts may adversely affect both individual southern California steelhead as well as designated critical habitat. These impacts are determined to be short-term in nature. Relocating individual southern California steelhead downstream into pools that would not be impacted by construction, should minimize the chances of injury or death to individual specimens. Keeping individual specimens within the watershed minimizes travel time and differing water quality that may be found in other watersheds. Once a normal stream flow is restored, the downstream habitats should recover rapidly and any adverse impacts to designated critical habitat should disappear. Long-term effects are therefore beneficial within the existing critical habitat along with the expanded habitat made available by removal of the dam and upstream structures and will lead to performance of an important recommendation of the Southern California Steelhead Recovery Plan.

Table 2 Determination of Effects

		Effects Analysis					
		Species Effects Determination			**Critical Habitat Determination**		
Species	**Status**	**No Effect**	**May Affect, Not Likely to Adversely Affect**	**May Affect, Likely to Adversely Affect**	**No Effect**	**Not Likely to Destroy or Adversely Modify**	**Likely to Destroy or Adversely Modify**
Fish							
Southern California Steelhead, *Oncorhynchus mykiss*	FE CH			X		X	
	FE= Federal Endangered Species *FT = Federal Threatened Species* *FC= Federal Candidate Species* *CH = Critical Habitat*						

7 List of Documents

This section provides a list of the documents that have bearing on the project or the consultation, including relevant reports, such as any environmental impact statements prepared for the project.

- Malibu Creek Ecosystem Restoration Project Draft Integrated Report (USACE 2017)
- Malibu Creek Environmental Restoration Project Habitat Evaluation (Appendix J to USACE 2017)
- Barrier and Habitat Assessment of Upstream Tributaries to Malibu Creek, Prepared by CDM, Inc. September 2008
- Draft Fish and Wildlife Coordination Act Report, Prepared by US Fish and Wildlife Service. May 2013

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Appendix U2

Regional Water Quality Control Board Letter

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CALIFORNIA Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

December 20, 2019

Ed DeMesa
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U.S. Army Corps of Engineers
Los Angles District
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Via email

LETTER OF SUPPORT FOR THE PROPOSED MALIBU CREEK ECOSYSTEM RESTORATION PROJECT

Dear Mr. DeMesa:

The California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) is the public agency with primary responsibility for the protection of ground and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura Counties, including Malibu Creek. The Los Angeles Water Board issues permits under the federal Clean Water Act including National Pollution Discharge Elimination System (NPDES) permits and Clean Water Act Section 401 Water Quality Certifications in addition to implementing the State of California's Porter-Cologne Water Quality Control Act within our area of authority.

The Los Angeles Water Board supports the proposed Malibu Creek Ecosystem Restoration Project. We anticipate the proposed restoration efforts will provide long-term benefits to the aquatic ecosystem within the Malibu Creek watershed.

The Los Angeles Water Board received the Los Angeles District of the U.S. Army Corps of Engineers' (Corps) request for support of the Malibu Creek Ecosystem Restoration Project Study in November of 2017. Details of the proposed project are described in the Draft Integrated Feasibility Report with Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (IFR), prepared by the Corps and the California Department of Parks and Recreation (CDPR). The proposed project has been the topic of discussions between the project proponents, Corps, and Los Angeles Water Board staff for many years through the Malibu Technical Advisory Committee.

The proposed project would be constructed by the Federal government, in coordination with the local sponsor, CDPR. The Corps is required to submit an application for a Clean Water Act section 401 Water Quality Certification (WQC) for the project but has not yet done so.

The Los Angeles Water Board understands that the Corps will submit its application for WQC during the project's Pre-construction Engineering and Design phase (PED), when more detailed information on the design and construction of project features will be available. The Los Angeles Water Board's final action on the WQC will occur at that time. However, we are not aware of any substantive issues that need to be resolved and we do not have any major concerns that would hinder the certification process.

In particular, we support the Locally Preferred Plan (LPP) (Alternative 2B2) as this alternative discharges sediments removed from Rindge Dam to nearshore waters via barge which may allow for greater control of over placement of the sediments as opposed to other alternatives which would allow for depositing the sediments to nearshore waters from the shore. Based on the information contained in the Draft IFR for the LPP, the Los Angeles Water Board has determined that, at this stage, the proposed federal activities will not compromise state water quality standards.

We anticipate that the WQC developed with assistance from the Corps will include conditions requiring Best Management Practices (BMPs) for the protection of water quality; environmental monitoring; conditions for reporting and construction notifications; and conditions that allow for revisions when proposed project descriptions are updated. As this proposed project is a restoration project, compensatory mitigation will not be required.

We look forward to working with the Corps as we develop the Clean Water Act Section 401 Water Quality Certification for the project.

Sincerely,

Jenny Newman for

Renee Purdy
Executive Officer

cc:
Christopher Solek, US Army Corps of Engineers
Kenneth Wong, US Army Corps of Engineers
Elizabeth Payne, Division of Water Quality, State Water Resources Control Board
Melissa Scianni, Office of Water, US EPA, Region 9

Appendix U3

National Marine Fisheries Service Letter

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DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

November 13, 2017

Environmental Resources Branch

Mr. Chris Yates
Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4221

Dear Mr. Yates:

This letter serves as the request to initiate formal consultation under Section 7 of the Endangered Species Act (ESA) of 1973, as amended, for the Malibu Creek Ecosystem Restoration Project for the southern California steelhead (*Oncorhynchus mykiss*) and its designated critical habitat. A Biological Assessment (BA) was prepared for the Malibu Creek Ecosystem Restoration Project and submitted to your office dated September 6, 2017. The BA concluded that the proposed project may affect and is likely to adversely affect the southern California steelhead and may affect, but is not likely to destroy or adversely modify critical habitat. The BA includes conservation measures, including surveying, relocation, and Best Management Practices to limit water quality affects, to offset potential adverse effects to the species.

Proposed conservation measures for potential impacts to the species include a relocation program for southern California steelhead, which is considered to be incidental take. Please find the attached request for an incidental take authorization under section 10(a)(1)(B) of the Endangered Species Act. This take is incidental to the overall project purpose to restore aquatic and riparian habitat connectivity along Malibu Creek and tributaries, which includes removal of Rindge Dam and restoration of access and is meant to protect individuals from construction impacts by relocating individuals within the water course.

Thank you for your attention to this document. If you have any questions regarding the above, please contact Mr. Larry Smith, Project Biologist, at (213) 452-3846 or by email at lawrence.j.smith@usace.army.mil.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

Enclosure

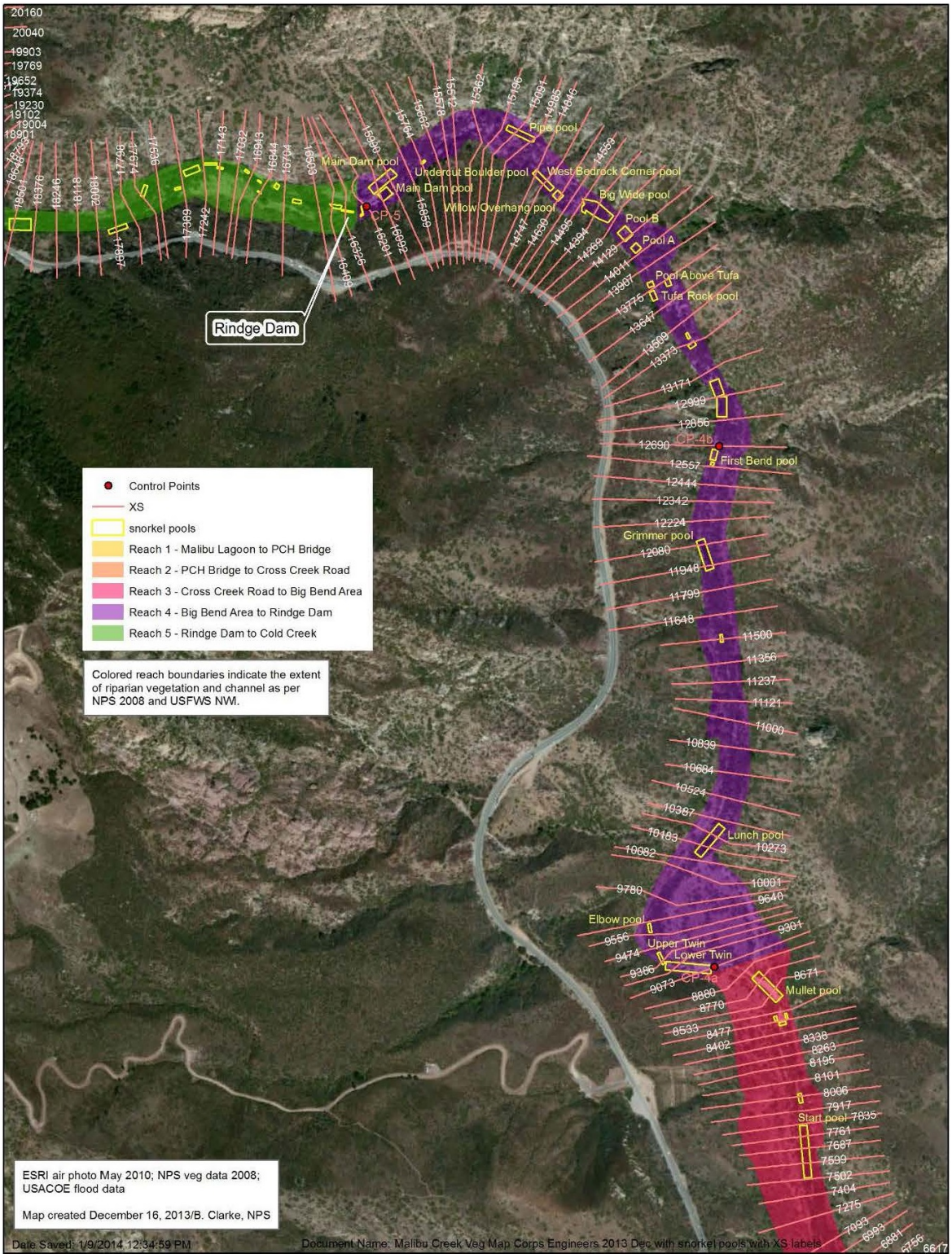
Malibu Creek Ecosystem Restoration Project Incidental Take Request

TAKE DESCRIPTION AND LEVELS

The U.S. Army Corps of Engineers anticipates the following levels of take for the southern California steelhead (*Oncorhynchus mykiss*) could occur as a result of the proposed action:

1. In order to avoid direct affects to southern California steelhead during Rindge Dam removal activities, preconstruction surveys will be conducted in the spring of each year of construction to identify the presence/absence of fish below the dam within the construction zone. If southern California steelhead are present, their relocation to suitable habitat will be coordinated with California Department of Parks and Recreation (CDPR), National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW). Relocation efforts would focus on suitable pools located within Malibu Creek downstream from the dam and out of the area of influence from construction activities. Identification of suitable pools would occur each year based on hydrologic conditions in the downstream pools, relocating into pools with sufficient water depth, flow, and water quality including dissolved oxygen levels above 5mg/l, and water temperatures under 23^{o} C. This minimizes the shock of catch, transport, and release; and increases chances for survival for individual fish. Catch and release would utilize standard methodology either angling, seining, or efishing, subject to review by the NMFS. Individuals handling steelhead will be properly permitted to do so through the NMFS. Survey and relocation teams would be accompanied by CDPR staff, or their designees, familiar with the area providing access to the pools.
2. Steelhead would be removed from the Main Dam Pool and the Undercut Boulder Pool and relocated downstream. Pool locations are shown on the attached figure. Blocking nets would be installed across Malibu Creek downstream of the Big Boulder Pool to prevent relocated steelhead from swimming back upstream into either of these two pools. There is a location between the downstream end of that pool and a short run/riffle complex where nets could reasonably be set. Blocking nets will need to be long enough to cover bank full width, 2 m tall and mesh can be 0.25 -1 cm. They can be anchored with fence posts and zip ties.
3. An unknown number of southern California steelhead may be trapped during the relocation process. Total incidental take of southern California steelhead will be difficult to predict due to fluctuating population levels within Malibu Creek. There are, for example, no steelhead currently in Malibu Creek based on monthly snorkel surveys conducted by the Resource Conservation District of the Santa Monica Mountains (RCDSMM; Rosi Dagit, Sr. Conservation Biologist, RCDSMM, personal communication). The RCDSMM biologists estimated that up to 300 juveniles and 100 adults may need to be relocated in any given year, should the population recover to pre-drought numbers.
4. No mortalities are expected from this relocation program, however we are requesting that a limit of mortality be set at of 30 juveniles and 10 adults per year to account for possible accidents during the relocation process. If any of these levels are exceeded, the take limit will be exceeded. This represents a maximum 10% mortality during relocation efforts (Rosi Dagit, personal communication).

Refer to the Biological Assessment prepared for Section 7 consultation provided under separate cover for further details on the project and on potential project impacts to this species and its critical habitat.



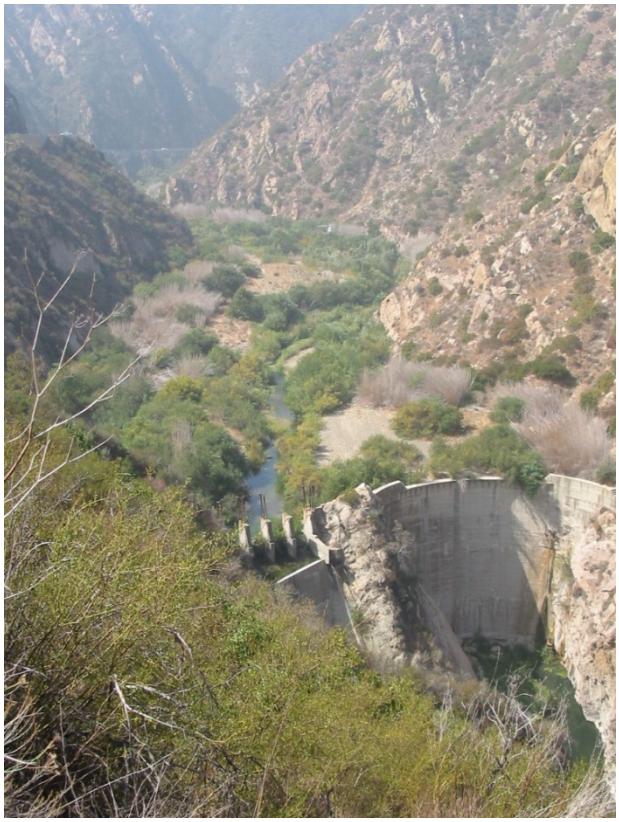
Malibu Creek Mainstem Pools and Refugia

Malibu Creek Ecosystem Restoration Project

Los Angeles and Ventura Counties, California

Biological Assessment and Section 7 Consultation

National Marine Fisheries Service



U.S. Army Corps of Engineers
Los Angeles District

September 2017

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1 INTRODUCTION

This Biological Assessment has been prepared to document the potential impacts of the Malibu Creek Ecosystem Restoration Project in Los Angeles County, California, on the steelhead (southern California DPS) and its designated critical habitat. It has been prepared to facilitate the formal consultation pursuant to Section 7 of the Endangered Species Act, 16 U.S.C. 1536(c), between the U.S. Army Corps of Engineers (USACE) and the National Marine Fisheries Service (NMFS). This Biological Assessment was prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (ESA) (50 CFR 402; 16 U.S.C. 1536 (c)).

1.1 Species and Critical Habitat Considered in this Document

Special-status species for this project are defined as all plant and wildlife species identified by NMFS as endangered, threatened, or candidate species under the federal Endangered Species Act (ESA). Table 1 includes Federal threatened, endangered, and candidate species under the jurisdiction of the NMFS taken from a species list request provided to the NMFS during initial ESA consultation. This table identifies species status and critical habitat, habitat requirements, and the likelihood of occurrence within the project area. The only species and critical habitat identified as under the jurisdiction of NMFS and potentially affected by the Project is the steelhead and its critical habitat.

1.2 Organization of the Biological Assessment

Section 2 describes the proposed project. Section 3 provides a brief description of those federal special-status species that have the potential or are likely to occur in the Action Area. Section 4 discusses the environmental baseline and cumulative effects. Section 5 assesses the potential impacts of the proposed project on biological resources and presents an alternative to the proposed project. Section 6 presents the conclusions and the USACE ESA determinations.

1.3 Agency Coordination

The USACE and the non-Federal sponsor, the California Department of Parks and Recreation (CDPR), have coordinated extensively with USFWS, NMFS, and the other resource agencies throughout the planning process for this project.

To facilitate coordination among the resource agencies and special interest groups concerned about Malibu Creek and Santa Monica Bay, the Malibu Creek Ecosystem Restoration Technical Advisory Committee (TAC) was formed. Frequent meetings of this group have been held since June 2008 to provide a forum for the various agencies and groups with an interest in Malibu Creek to identify their concerns, goals, objectives, and potential restoration efforts for Malibu Creek.

1.4 Coordination with NMFS

In addition to coordinating with NMFS during the planning process through NMFS participation on the TAC, discussions between the USACE and NMFS determined that a formal Section 7

consultation was appropriate considering the presence of listed species and their designated critical habitat within the project area.

Table 1 Federal Threatened, Endangered, or Proposed Special-Status Species

Species	Status	Habitat	Potential for Occurrence in the Project Area
Fish			
Southern California Steelhead *Oncorhynchus mykiss*	FE CH	Pacific coast streams and marine environments	Observed in Malibu Creek below Rindge Dam. Malibu Creek from Rindge Dam downstream to the ocean is designated as critical habitat (NMFS, 2005).
FE= Federal Endangered Species *FT = Federal Threatened Species* *FC= Federal Candidate Species* *CH = Critical Habitat*			

2 Description of the Proposed Action

The USACE and the CDPR intend to re-establish aquatic habitat connectivity in Malibu Creek by removing Rindge Dam as well as modifying/removing upstream aquatic barriers on Cold Creek and Las Virgenes Creek. The Malibu Creek Study Area is shown on Figure 1. Authority for project studies was initially contained in the Water Resources Development Act of 1999 (P.L. 106-53, Sect. 211) as an amendment to the Water Resources Development Act of 1996.

Currently the aquatic habitat in Malibu Creek is not connected above and below Rindge Dam, a 100-foot (ft) tall concrete arch dam. The dam itself is no longer functional and is filled with approximately 780,000 cubic yards (cy) of a variety of sediment types. The Malibu Creek Watershed contains habitat for endangered and threatened species. The dam, as well as the area surrounding the dam, is within lands operated by CDPR. The dam and sediment impound area are shown on Figure 2.

In order to re-establish aquatic habitat connectivity in Malibu Creek, three primary components make up the Proposed Action: removal of the dam (either entirely by removing the main dam arch and the spillway structure; or in part by removing the main dam arch only leaving the spillway structure in place), removal of sediments contained behind the dam; and modification/removal of upstream barriers on Las Virgenes and Cold Creeks. Disposal of concrete associated with the dam removal will take place at the Calabasas Landfill. More detail on these components of the Proposed Action is provided below. Stream excavation sites would be revegetated to enhance ecosystem function and values. This includes areas impacted by the restoration of access roads, and the removal of upstream barriers. Vegetation will be removed outside of the nesting season for migratory birds (February 1 through August 15) to the extent possible. If vegetation removal must be conducted during the nesting season, the area will be surveyed by a qualified biologist and

Figure 1 Study and Project Area

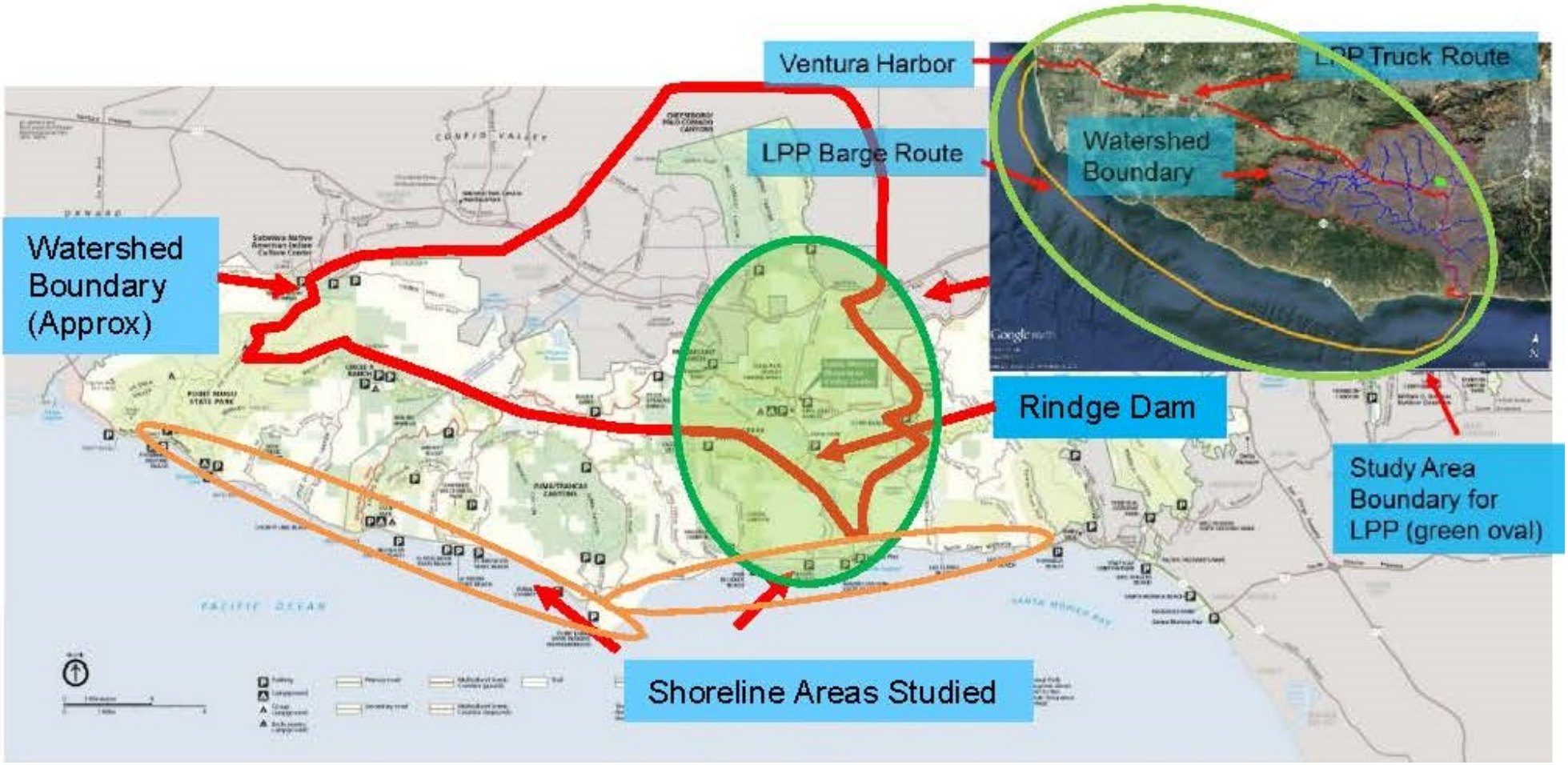
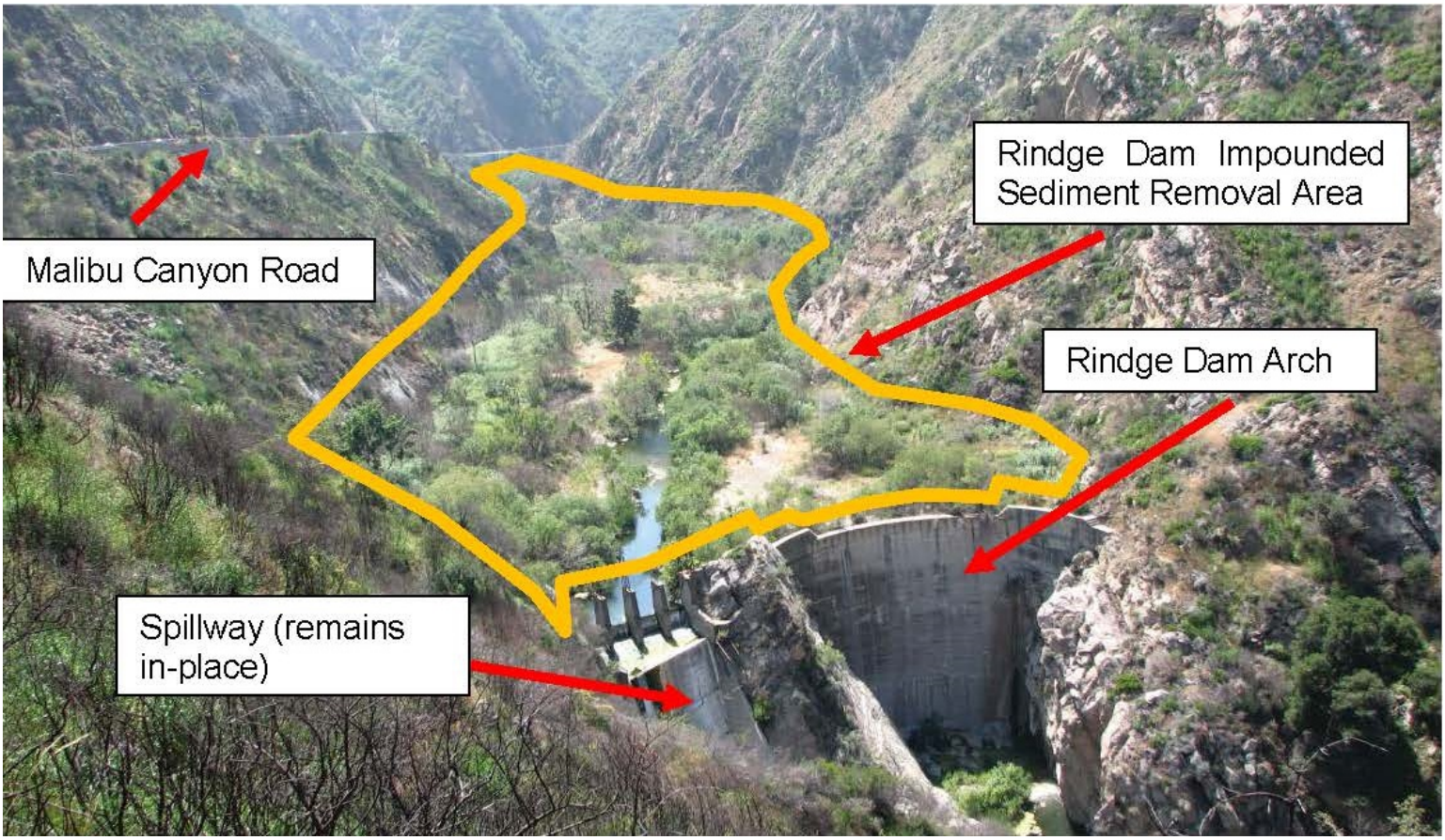


Figure 2. Rindge Dam and Impounded Sediment Removal Area



appropriate buffers will be identified in consultation with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to ensure impacts to nesting birds do not occur.

There are two project alternatives addressed in this BA, as the final Recommended Plan has not been confirmed. The two are very similar in terms of potential impacts to southern California steelhead and its designated critical habitat in Malibu Creek. The two alternatives are the National Ecosystem Restoration (NER) Plan and a Locally Preferred Plan (LPP). The major differences between the two are that the NER Plan removes the dam arch only while the LPP removes the dam arch and spillway structure. The difference here is primarily construction duration. Removal of the dam arch only would take less time than removal of the dam arch plus spillway, however the nature and extent of the impacts would otherwise be the same. The NER Plan places the sand fraction on the beach, while the LPP places the sand fraction into a near shore placement site. There is no difference in effect on southern California steelhead or its designated critical habitat between these two alternatives in this respect.

2.1 Action Area

Malibu Creek is located approximately 30 miles west of downtown Los Angeles, California. The drainage area covers approximately 110 square miles of the Santa Monica Mountains and Simi Hills. Malibu Creek and its tributaries drain into Malibu Lagoon and Santa Monica Bay. Elevations in the watershed range from over 3,100 feet at Sandstone Peak in Ventura County to sea level at Santa Monica Bay. It is the largest coastal watershed in the Santa Monica Mountains, and is encompassed by one of the largest areas of protected open space left in southern California, the Santa Monica Mountains National Recreation Area, managed by the National Park Service, California State Parks, Mountains Recreation and Conservation Authority, and others. Approximately two-thirds of the watershed is located in northwestern Los Angeles County, and the remaining one-third is in southeastern Ventura County. Malibu Creek runs at the base of Malibu Canyon, which contains steep to very steep sloping hills, in a generally southern route.

Tributary creeks, typically within steep mountainous canyons, converge to form Malibu Creek at Malibou Lake, a private residential and recreational community. Malibu Creek itself is approximately 10 mi in length and runs from Malibou Lake to Malibu Lagoon. Primary tributary flows into Malibu Creek in the lower portion of the watershed are from Las Virgenes Creek and Cold Creek. Stokes Creek and Liberty Canyon Creek are tributaries to Las Virgenes Creek, while Dark Canyon Creek is tributary to Cold Creek. A variety of streambed modifications are evident throughout the watershed, particularly in the upper, urbanized areas. However, the majority of the streambed in the area of study (Figure 1) remains unimproved (i.e., is not armored with stone or concrete on bank or bed), though at times natural meanders of the creeks are constricted by roads and other development.

Currently, Malibu Creek runs for a three-mile stretch below Rindge Dam that is listed as critical habitat for steelhead (NMFS 2005). Above Rindge Dam, up to the first impassable barriers on Malibu, Cold, and Las Virgenes Creeks, it is estimated that approximately 5-1/2 stream miles of good to excellent steelhead habitat are currently inaccessible as a result of the impassible barrier

created by the dam. Removal of the eight upstream barriers would restore access to an additional 9-1/2 miles of good to excellent steelhead habitat that are currently inaccessible as a result of the impassible barrier created by the dam and the nine upstream barriers. This increases available habitat from three to eighteen miles.

The three stream miles below Rindge Dam and approximately 5-1/2 stream miles above Rindge Dam, plus the immediate area surrounding the dam to be restored, and the small fish passage barriers upstream (along Las Virgenes and Cold Creek) of Rindge Dam that could be removed for additional fish habitat to open constitute the "Action Area". This area is depicted in Figure 3. The study area also includes shoreline and nearshore locations outside the watershed. A portion of the Ventura Harbor area was also included in the study area.

Malibu Canyon Road/Las Virgenes Road is the primary north/south route through the watershed, running generally parallel to Malibu Creek from Pacific Coast Highway (PCH, Highway 1) to the San Fernando Valley, past Interstate Highway 101 (Hwy 101). This route is one of the only major traffic arteries through the Santa Monica Mountains that connects the coastal (PCH) and valley (Hwy 101) routes.

2.2 Proposed Project

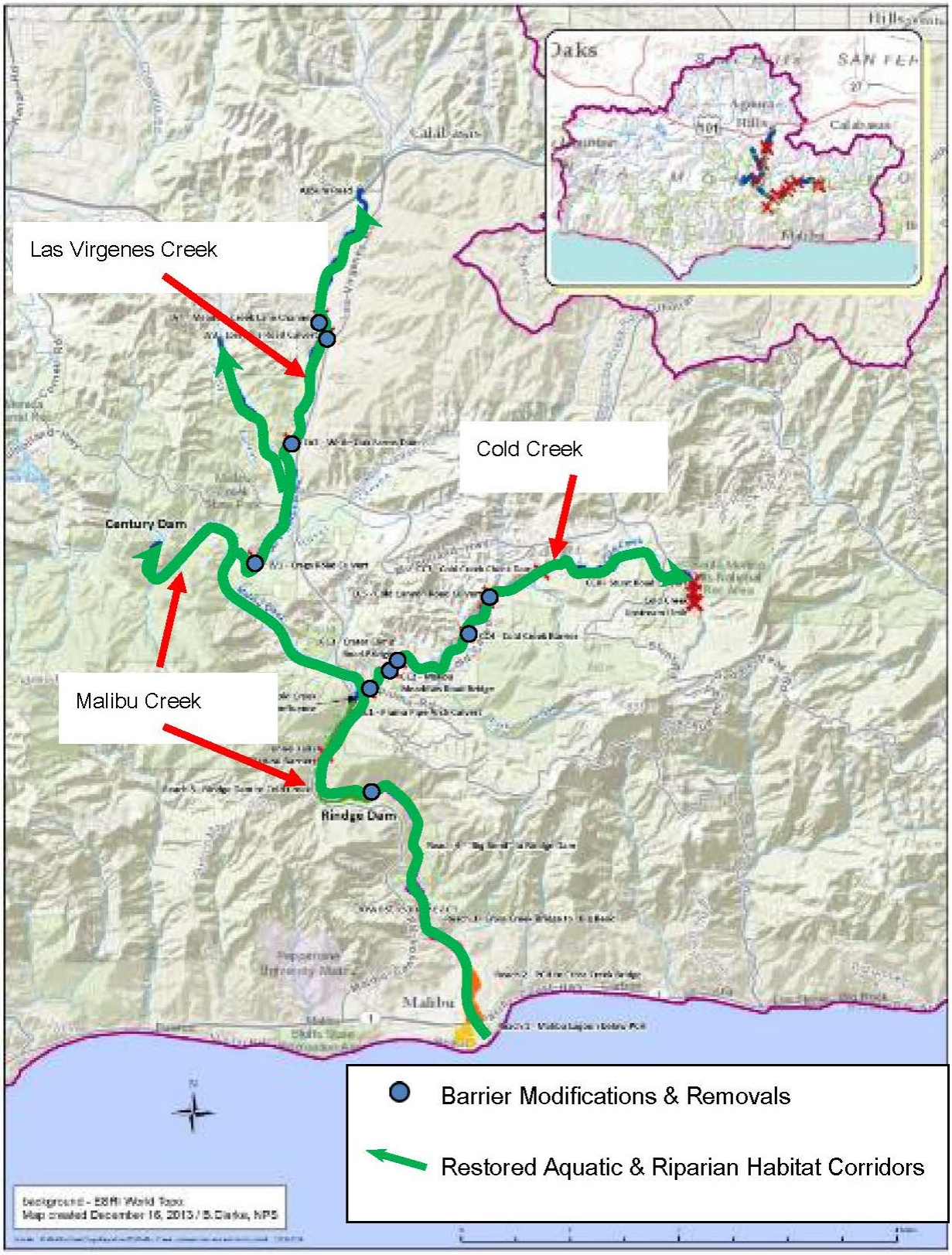
2.2.1 National Ecosystem Restoration (NER) Plan - Alternative 2d1—Dam Removal with Mechanical Transport, Upstream Barrier Removal, and Beach Placement

This alternative includes incremental removal of Rindge Dam's concrete arch over an estimated 7-year construction window, working during the dry seasons. The 780,000 cy of impounded sediment behind the dam would be mechanically removed using excavators, bulldozers, and other similar equipment, and hauled away using 20 cy trucks to offsite locations each construction season. The dam would be removed in lifts concurrently with the removal of impounded sediment. Dam concrete blocks would be transported to the Calabasas Landfill using 20 cy trucks.

Restrictions in the construction schedule due to environmental windows, weather, daily hauling restrictions, and other factors require the removal of sediment and dam and spillway structure to be phased over seven years. Vegetation will be removed outside of the nesting season for migratory birds (February 1 through August 15) to the extent possible to avoid impact to nesting migratory bird species. Weather restrictions prohibit construction activities during the winter rainy season of October-April when it is not safe to work in Malibu Canyon. Daily hauling is assumed to be limited to 6 hours for non-school days and Saturdays to comply with LA County highway restrictions, operating from 9am-3pm. No hauling would occur at night or on Sundays. On school days, trucking is limited to 5 hours per day, from 9-2.

During the first construction year, all the vegetation on the surface of the sediment impoundment area would be cleared, including mature trees and shrubs, with diversion and control of the creek water through construction of a temporary coffer dam and water pipeline. Dewatering wells would be installed to extract ground water from the impounded sediment area. The top layer of coarse-grained material from the impounded sediment area would be used to construct two access ramps

Figure 3 Restored Aquatic Habitat Connectivity - Upstream Barriers



for equipment and crew access to the site, allowing trucks and other equipment to travel in a southbound and northbound direction on Malibu Canyon Road. The former access road used to conduct surveys within the study area would be rebuilt to accommodate the southbound truck ramp.

About 100,000 cy of the gravel and cobble would be used to construct the temporary access ramps used to access the site during construction, to be removed at the end of construction and disposed of at the Calabasas Landfill. About 278,000 cy of beach-compatible sand would be placed on the shoreline. The remaining volume of gravel, cobble, and other material (including concrete and steel) would be permanently disposed of at the Calabasas Landfill.

The Rindge Dam concrete arch would be lowered each year in alignment with sediment removal, leaving an equal elevation for remaining impounded sediment and dam arch each storm season during construction. All creek flow would pass over the dam arch by the end of the first construction year since the top of the spillway, a concrete apron attached to a bedrock outcrop, would remain at a higher elevation than the remaining section of partially removed dam arch and impounded sediment. Aquatic habitat connectivity would be reestablished after the impounded sediment and dam arch is removed in an estimated 7 year timeframe.

It is expected that construction would stop during the storm season (~October to April) unless extended due to drought or lack of rainfall. Construction would resume the following year. Some ramp repairs are likely during construction as a result of damages due to storm flows and expected erosion of portions of the ramps during winter storm seasons. Additional clearing and grubbing would occur, as needed, at the restart of each construction season. Creek sites disturbed by excavation activities would be revegetated to enhance ecosystem function and values.

During the middle of the second construction year, the sediment excavated will be relatively homogenous beach-compatible sand. The excavation will produce sand for the following two and a half years, with the fifth year through seventh year of construction then yielding silts, clays, and other fine particles. The fine-grained sediment at the bottom of the impounded sediment would be permanently disposed of at the Calabasas landfill.

The beach compatible sediment will be transported along Malibu Canyon Road to a temporary storage area (Upland Site F) adjacent to Mulholland Highway west of Las Virgenes Road. Placement of the material at the Surfrider Beach placement site would occur after Labor Day and prior to Memorial Day during construction years 2-5 to avoid impacts to the summer beach season. Sands would be trucked from Upland Site F to the parking lot located adjacent to the Malibu Pier and stockpiled for placement on the beach, across from the rock rip rap.

The USACE provided chemical and grain size sediment test results of the impounded sediments to the Southern California Dredge Material Management Team (SC-DMMT) for review. The SC-DMMT is comprised of representatives from multiple regulatory and government agencies. The results indicate that the sand layer is suitable for beach or nearshore placement, an initial determination with which the SC-DMMT concurred.

Eight upstream barriers, four on Cold Creek and four on Las Virgenes Creek, would also be removed or modified as part of this project. Removal of those barriers combined with removal of Rindge Dam will open up an estimated 15 miles of creek to southern California steelhead. However, Rindge Dam will still be an impediment to southern California steelhead migration during removal of the upstream barriers, so that southern California steelhead will not have access to any of the sites during construction. Implementation of BMPs to control turbidity and the lack of access will result in no effect to southern California steelhead during removal of any of the upstream barriers.

2.2.2 Locally Preferred Plan (LPP) - Alternative 2b2— Dam and Spillway Removal with Mechanical Transport, Upstream Barrier Removal, and Nearshore Placement

The CDPR intends to pursue Alternative 2b2 as the LPP. The LPP is similar to the NER Plan in regards to actions described for the Rindge Dam and impounded sediment removal. The strategy for modification and removal of the upstream barriers is also the same as the NER plan. The differences in these plans include the method of transport and placement of the sands, using trucks and barges for nearshore placement, and adding the removal of the Rindge Dam spillway.

The likely LPP allows for direct transport of sediment mined from the Rindge Dam impounded sediment area up Malibu Canyon and Las Virgenes Road, to Lost Hills Road, U.S. Highway 101 and the Ventura Harbor about 41 mi away from the dam. Material would be offloaded from the trucks and placed on barges to be transported to the Malibu nearshore placement site, to the east of the pier. The use of barge allows for more flexibility in the location for placement of mostly sands, reducing risks of habitat and species disturbances during placement activities. The location of the nearshore placement site was based on a survey of the nearshore areas (USACE, 2016) in the project area. The site was selected based on the sandy nature of the bottom avoiding impacts to rocky reef or vegetated bottoms.

As in the NER Plan, the fine-grained sediment at the bottom of the impounded sediment would be permanently disposed of at the Calabasas landfill. About 100,000 cy of the gravel and cobble amount will be used to construct the temporary access ramps used to access the site during construction, to be removed at the end of construction and disposed of at the Calabasas Landfill. About 278,000 cy of sand would be placed in the nearshore area by the Malibu Pier. The remaining volume of gravel, cobble, and other material (including concrete and steel) would be permanently disposed of at the Calabasas landfill.

As in the NER Plan, eight upstream barriers, four on Cold Creek and four on Las Virgenes Creek, would also be removed or modified as part of this project. Removal of those barriers combined with removal of Rindge Dam will open up an estimated 15 miles of creek to southern California steelhead. However, Rindge Dam will still be an impediment to southern California steelhead migration during removal of the upstream barriers, so that southern California steelhead will not have access to any of the sites during construction. Implementation of BMPs to control turbidity and the lack of access will result in no effect to southern California steelhead during removal of any of the upstream barriers.

Habitat Evaluation outputs remain the same as those calculated for the NER Plan, but overall costs increase. The likely LPP construction timeframe is estimated to be 8 years.

3 Status of Species and Critical Habitat in the Action Area

One federally-protected fish species under NMFS jurisdiction was identified as potentially occurring in the Action Area. The federally protected species are detailed below. Malibu Creek from Rindge Dam downstream to the ocean is designated as critical habitat (NMFS, 2005) for this Distinct Population Segment (DPS).

3.1 Fish

3.1.1 Southern California Steelhead (Oncorhynchus mykiss)

Southern California steelhead (*Oncorhynchus mykiss*) were listed as endangered on August 18, 1997. Critical habitat was designated on September 2, 2005. Malibu Creek from its mouth up to Rindge Dam is southern California steelhead critical habitat in the Action Area.

This species is an ocean-going form of rainbow trout that are native to Pacific coast streams from Alaska south to northwestern Mexico (Moyle 1976). Historic distribution of southern California steelhead included virtually every coastal stream from Monterey, San Luis Obispo, and Santa Barbara Counties south to San Diego County and Baja California. River systems include the Los Angeles and San Gabriel River and Malibu and Topanga Creeks in Los Angeles County; San Onofre, San Mateo Creeks, Santa Margarita, San Luis Rey, San Diego and Tijuana Rivers in San Diego County (NMFS, 2012). It was common to find southern California steelhead in coastal lagoons through the 1930's (Swift et al. 1993).

The population of steelhead in the southern California evolutionary significant unit (ESU) is federally endangered and has adapted to survive the semi-arid climates and the rainfall patterns of southern California. The population is currently known from San Luis Obispo County south to San Luis Rey River watershed in San Diego County (CDFW 2010; NMFS 1997; Wong 2004).

Once hatched, juvenile steelhead may stay in freshwater for one or two years before migrating to the ocean. This outward migration primarily occurs during the winter and spring months when river flows are relatively high. Steelhead mature at age two to four and migrate back upstream to natal spawning areas. The upstream migration generally occurs from January through March, but is dependent on the intensity of storms and subsequent outflow. Females create a depression (redd) in the gravel of the streambed to lay eggs, males fertilize the eggs with milt, and the nest is covered by the female who loosens gravel immediately upstream, which the stream currents carry downstream to cover the eggs. The eggs remain in the nest for a period of weeks or months before hatching.

Populations in California have declined primarily due to water development (dams, reservoirs, and water harvest), land use practices, and urbanization.

Currently, the 3-mile stretch of Malibu Creek below Rindge Dam is suitable steelhead habitat. Good quality habitat is located below the dam (Abramson 1998; Dagit and Abramson 2007; Dagit and Krug 2011). Above Rindge Dam it is estimated that some 5-1/2 miles of good to excellent steelhead habitat are currently inaccessible as a result of the impassible barrier created by the dam. Removal of eight upstream barriers would restore access to an additional 9-1/2 miles of stream once Rindge Dam is removed, resulting in an increase in accessible stream from 3 to 18 miles as a result of the proposed project. The Final Rule issued by the NMFS (70 FR 170 pp52488, Sep. 2, 2005) on critical habitat for the Steelhead Evolutionarily Significant Units identifies the reaches downstream of Rindge Dam as critical habitat. Removal of Rindge Dam and restoration of access to upstream reaches is a recommendation of the Southern California Steelhead Recovery Plan (NMFS 2012) concluding that historically this currently inaccessible habitat provided the principal spawning and rearing habitat for steelhead within the Malibu Creek watershed. Steelhead occur below Rindge Dam on Malibu Creek.

4 Environmental Baseline and Cumulative Effects

The environmental baseline is part of regulations implementing Section 7 of the ESA. The baseline summarizes the past and present impacts of federal, state or private actions and other activities in the Action Area. The environmental baseline also lists the anticipated effects of all proposed federal projects in the Action Area that have undergone Section 7 consultation, and the impacts of state and private actions that are contemporaneous with the consultation in progress (50 C. F. R. 402.02). Section 4.1 describes the existing conditions within and adjacent to the Action Area. Section 4.2 discusses cumulative effects.

4.1 Description of the Environmental Baseline

The Malibu Creek watershed drainage area covers approximately 110 mi^2 of the Santa Monica Mountains and Simi Hills. Elevations in the watershed range from over 3,100 ft at Sandstone Peak in Ventura County to sea level at Santa Monica Bay. Malibu Creek runs at the base of Malibu Canyon, which contains steep to very steep sloping hills, in a generally southern route. Malibu Creek itself is approximately 10 mi in length and runs from Malibou Lake to Malibu Lagoon. Although the watershed is modified by residential development, reservoirs, and agricultural operations, a large majority of the land is held as part of the Santa Monica Mountains National Recreation Area (SMMNRA), including Malibu Creek State Park, operated by the Sponsor, or is part of unincorporated Los Angeles County. Malibu Creek from Malibou Dam to its mouth is also part of the Malibu Creek State Park, and is the focus for restoration opportunities.

A variety of streambed modifications are evident throughout the watershed, particularly in the upper, urbanized areas. However, the majority of the streambed in the action area remains unchannelized (i.e., is not armored with stone or concrete on bank or bed), though at times its natural meander is constricted by roads and other development. Rindge Dam, built in 1926, is the largest disruption to stream flow and aquatic and terrestrial habitat connectivity on Malibu Creek between Malibou dam and the Pacific Ocean. It was built as a private water supply dam for the Rindge family ranch and other business concerns. The reservoir originally provided approximately 574 acre-ft (af) of water storage for agricultural needs. No reservoir currently exists behind Rindge

Dam, and the sediment impounded behind the dam has filled to the crest of the dam's spillway, nearly 100 ft above the elevation of the original streambed. It is estimated that approximately 780,000 cy of sediment, approximately one-third of which could be used beneficially to restore area beaches, are impounded behind the dam.

Malibu Creek is a major drainage that connects coastal regions of Los Angeles County with interior regions of Los Angeles and Ventura counties. As such, Malibu Creek is an important regional corridor linking riparian ecosystems from the immediate coastal plain with the interior plains and valleys of the region. The 110 mi^2 study area, including government managed lands by National Park Service, California State Parks, and Mountains Recreation and Conservation Authority, with its extensive non-developed areas, provides a wealth of biological resources. The Santa Monica Mountains support a remarkably abundant wildlife community considering its close proximity to one of the largest urban areas of the United States. The Santa Monica Mountains are reported to support over 450 vertebrate species, including 50 mammals, 384 species of birds, and 36 reptiles and amphibians.

The vegetation in the action area provides for a variety of habitat types, including sensitive riparian and emergent wetland habitats. Riparian and emergent wetlands occur throughout the Creek and provide wildlife with shade, protection from predators, foraging habitat, nesting, and breeding habitat. The upland vegetation communities that occur adjacent to the stream (e.g., chaparral, annual grassland and oak savannah) support a wide variety of species, and contribute to the overall wildlife species diversity.

In Malibu Creek, within the project area, wildlife species can move relatively unimpeded downstream or upstream of Rindge Dam, but not over the dam. East west migration is inhibited by a heavily used scenic byway of Malibu Canyon Road and precipitous slopes. In addition, Malibu Canyon Road serves as a partial barrier to wildlife movement because of the amount of noise, motion, light, and startle impacts associated with traffic on this highway.

Currently, the three-mile stretch of Malibu Creek below Rindge Dam is listed as critical habitat for steelhead (NMFS 2005). Above Rindge Dam it is estimated that approximately 5-1/2 stream miles of good to excellent steelhead habitat are currently inaccessible as a result of the impassible barrier created by the dam. Removal of eight upstream barriers on the Cold Creek and Las Virgenes Creek tributaries would restore access to an additional 9-1/2 miles of stream once Rindge Dam is removed, resulting in an increase in accessible stream from 3 to 18 miles as a result of the proposed project. The National Marine Fisheries Service (2004) had previously requested comment on the proposal that the inaccessible reaches of Malibu Creek above Rindge Dam be identified as critical habitat. Although the area above the dam is not currently designated critical habitat, NMFS concluded that historically this currently inaccessible habitat provided the principal spawning and rearing habitat for steelhead within the Malibu Creek watershed (NMFS 2004). Historical records show that runs within Malibu Creek have been estimated as high as 1,000 steelhead (Nehlsen et al. 1991), where the current population is estimated in the dozens (Franklin et al. 1989; Dagit and Abramson 2007; and Dagit and Krug 2011). Only one dying fish was observed in 2017 to date (Rosi Dagit, personal communication).

The Rindge Dam site is also an attractive nuisance, which is contributing to steelhead habitat impacts. Illegal recreation is resulting in increased erosion on adjacent slopes from volunteer trails. increased water turbidity, and accumulated trash and other pollutants.

Los Angeles County Department of Beaches and Harbors maintains 19 beach areas throughout Los Angeles County. Malibu Surfrider Beach is a county maintained beach within the study area. Surfrider Beach is often identified as one of southern California's premier surfing areas. Recreational opportunities on Surfrider Beach include surfing, swimming, and fishing (Los Angeles County Department of Beaches and Harbors 2005). The proposed beach placement site for the NER Plan is on Surfrider Beach east of the Malibu Pier and is outside the primary surfing area located adjacent to Malibu Lagoon. Recreational uses are beach-going and swimming. Fishing takes place off the adjacent Malibu Pier. The proposed nearshore placement site for the LPP is located immediately offshore of this same beach.

4.2 Critical Habitat

The 3-mile stretch of Malibu Creek below Rindge Dam is listed as critical habitat for the southern California steelhead (NMFS, 2005). Primary Constituent Elements (PCE) of critical habitat for southern California steelhead were listed in the Final Critical Habitat Designation for the southern California steelhead (NMFS 2005) and were used in designating Malibu Creek as critical habitat. They are:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.

2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and 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 free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural

cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Potential impacts are discussed relative to these PCEs in Section 5.2 below.

4.3 Cumulative Effects

4.3.1 Future and Concurrent Actions

Projects proposed in the immediate vicinity of the Action Area that may affect biological resources include:

Malibu Lagoon

Moffat and Nichols, Heal the Bay, The California Coastal Conservancy, California Department of Parks and Recreation, and the Resource Conservation District of the Santa Monica Mountains have recently implemented a restoration and enhancement plan for Malibu Lagoon within the Malibu Lagoon State Park in order to: "restore and improve the natural structure and function of the lagoon ecosystem, including water quality, circulation, habitat, and biodiversity, and to enhance public access and education opportunities" (JSA 2006). While initial construction has been completed, monitoring and management activities will still be ongoing.

Malibu Creek Watershed

The Malibu Creek Watershed Council prepared a *Malibu Creek Watershed Natural Resources Plan* in 1995 that "addresses watershed resources, water quality and quantity issues, and pollution reduction strategies in the Malibu Creek watershed" (MCWC 2008a). A main highlight of the plan are 44 action items that provide the guiding principles for restoration in the watershed. The following is a list of the top ten watershed restoration priorities included in the *Making Progress: Restoration of the Malibu Creek Watershed* report (MCWC 2008b).

- Map all existing and potential sources of pollution in the watershed. Implement measures to pinpoint sources of pollution in both the upper and lower watershed.
- Acquire key parcels of land for habitat protection.
- Remove *Arundo donax* from the entire watershed.
- Review general land use practices and past practices for each city and for unincorporated areas in the watershed to predict the impacts on public health, natural and aquatic resources, and recreational benefits.
- Reduce sedimentation and erosion along stream banks, roadways, and at construction sites.
- Implement the coordinated watershed-wide monitoring plan developed by the Monitoring and Modeling subcommittee and develop a centralized database for the monitoring data.

- Synthesize water quality data to establish minimum standards for native species of locality and identify where gaps in data still exist.
- Develop/revise monitoring plan to address data gaps.
- Develop a plan to identify, remove, and prevent exotic plant and animal species from impacting the watershed.
- Help/encourage watershed cities to develop uniform development plans and ordinances which would:
  - Set slope minimums for hillside building and construction activities.
  - Establish native plan vegetation requirements.
  - Prevent disturbances to natural drainage channels.
  - Retain runoff on-site to the maximum extent practicable (including use of pervious surfaces).
  - Prevent sediment loadings to creeks/streams both during and after construction.
  - Review development planning on a watershed basis, rather than a project-by-project basis.
  - Set standards for streets, sidewalks, driveways, and parking lots.
  - Establish 200-ft buffer-zone standards near sensitive habitats.
  - Ensure adequate monitoring and/or enforcement activities so that these requirements are met" (MCWC 2008b).

Although no formal environmental documentation of the effects of these proposed actions has been developed by the Malibu Creek Watershed Council, council members are actively working on the priority goals.

Malibu Creek State Park

The CDPR completed the *Malibu Creek State Park General Plan and Final Environmental Impact Report* (CDPR 2005) outlining "a broad vision for the long-term management of" Malibu Creek State Park. The general plan outlines the goals and guidelines for work within the Malibu Creek State to ensure protection of natural and cultural resources, while providing a quality visitor experience.

Chapter 3 of the General Plan and EIR provides more detail on specific resources and area goals. Chapter 4 summarizes these components by stating: "Chapter 3 comprises two major components: goals and guidelines and area-specific management and facility prescriptions. Management goals and supporting guidelines in the General Plan are designed to address the currently identified critical planning issues and to mitigate the adverse environmental effects of uses that would be permitted in the Park. Area-specific management and facility prescriptions are not intended to represent site-specific facility planning in terms of precise placement of facilities. The prescriptions will serve as a guide for the placement of proposed future developments. Under the tiered environmental process, changes from existing conditions and operations proposed by the Department would require site-specific planning and environmental review as each individual development project (e.g., Area Development Plans) is proposed to avoid or minimize impacts to resources. Based on the area-specific management and facility prescriptions, the Department can implement the issue-specific management goals and guidelines presented in the General Plan to the most appropriate locations to ensure consistency between uses and management".

Impacts for the General Plan include: the large open space and natural areas of the Park host a variety of plant and animal species, a number of which are rare or endangered. The Park's biologically diverse and sensitive areas are threatened by development encroaching upon its boundaries. This General Plan encourages not only maintenance and preservation of the Park's natural resources, but also development of new Park facilities. Facilities development, infrastructure improvements, increased visitation, and invasive species in the Park all have the potential to impact the native species and wildlife corridors in the Park. There are no [Habitat Conservation Plans] (HCPs) or [Natural Community Conservation Plans] (NCCPs) in effect for the Park. Potential impacts to biological resources would be reduced to below the level of significance with implementation Goals NR-1, NR-2, NR-3, NR-4, NR-5, NR-6, NR-7, TAP-1, INT-1, REC-1, FAC-1, SR-1, CTA-1, WAS-1, and the associated guidelines. These goals and guidelines would reduce impacts and improve protection of the natural biological resources within the Park.

Vegetation and wildlife within the Park have been exposed to many land management practices and outside factors that have affected the ecological conditions in the Park. Implementation of the General Plan has the potential to impact native species within the Park; therefore a thorough understanding of the natural ecosystems and relationships amongst the biological resources in the Park is needed to provide a basis for management and preservation. General Plan Goals NR-1, NR-2, and NR-3 and the associated guidelines outline study methods and scientific research for the vegetation communities in the Park. Guidelines NR-1.1, NR-2.1, NR-2.2, and NR-3.1 would require research, surveys, and inventory, of both native and invasive species, which would provide a basis for management. Guidelines NR-1.2 and NR-3.2 require specific management actions and coordination with agencies that would implement the plans to restore and maintain the resources, while minimizing human impact from Park usage.

Implementation of Goals NR-4 and NR-5 are similar to NR-1 through NR-3, but focus specifically on wildlife resources. Similar to the goals and guidelines for vegetation, these goals require research, surveys, and an inventory of the wildlife in the Park. Guideline NR-4.2 specifically requires regular monitoring of wildlife populations and movement that would provide a baseline for future management efforts. Guideline NR-4.3 entails the implementation of breeding and reintroduction programs, if it is determined that it would enhance native populations and is scientifically feasible. Guideline NR-5.1 identifies the need to further evaluate the natural preserve boundaries for maximum resource protection. The research and management plans that would result from implementation of these goals would improve the knowledge base and protect the biological resources in the Park.

Vegetation and wildlife in the Park have experienced periodic and, at times, severe fire events that have the potential to greatly impair or promote regeneration and growth. Goal NR-6 highlights the need for appropriate, scientifically-based wildfire management practices. Potentially detrimental effects to biotic resources as well as structures will be minimized to less than significant through implementation of a wildfire management program, creation of buffer zones, and education, as outlined in Guidelines NR-6.1 through NR-6.4, respectively.

In addition to the Park-wide planning components, the General Plan also provides goals and guidelines for specific areas within the Park. Tapia Park has high visitation, and is home to important oak woodland resources. Goal TAP- 1 and Guideline TAP-1.1 require proper care and management of the oak woodlands, the health of which is inversely correlated to Park usage, and is therefore a good indicator of over-use in the Park. Implementation of Goal TAP- 1 would ensure that significant impacts do not occur to the oak woodland communities of Tapia Park.

Implementation of the General Plan would improve Park features, in turn encouraging increased visitation. The increase in Park users would expose biological resources to outside factors that have the potential to influence the habitat and relationships of the vegetation and wildlife in the Park. Implementation of Goal INT-1 requires and encourages education and enhanced visitor knowledge of the natural, cultural, historic, and aesthetic resources in the Park. Guideline INT-1.3 specifically requires a comprehensive education program that would help to protect the natural resources from the threat of human influence: guideline INT-2.3 provides additional guidance on key topics for the interpretive program. Additionally, REC-1, FAC-1 and CTA-1 provide guidelines for the locations and consolidation of facilities, services, trails, and access to the Park, thereby reducing natural resource exposure to the new developments within the Park. Education of Park visitors and careful Park development, combined with research and management efforts, would protect and enhance the biological resources in the Park and would reduce impacts to less than significant level".

As noted above, because much of the area is protected within Malibu Creek State Park, cumulative effects on special-status species in the action area are primarily related to temporary construction impacts, the majority of which are located outside critical habitat. These include temporary loss of habitat, potential mortality associated with heavy equipment usage, and disturbance of foraging, roosting, and nesting habits due to construction noise and other disturbance. Long-term changes in bed elevation are expected as Malibu Creek moves toward a new equilibrium of water and sediment regimes in the absence of Rindge Dam. These changes are likely to redistribute habitat types along the creek, but are not expected to do so in a manner adverse to aquatic organisms in the creek. However, the primary purpose of the projects being undertaken is preservation and restoration of habitat; therefore, the overall cumulative effect would be beneficial.

5 Effects of the Proposed Action

The effects of the Proposed Action were estimated based on the following conditions:

A qualified biologist would be responsible for overseeing compliance with protective measures for the biological resources during clearing and construction activities within designated areas.

Implementation of a spill prevention plan would reduce the risk of fuel or oil spills from construction and transportation equipment.

The implementation of Best Management Practices (BMPs) would control soil erosion due to construction activities, and minimize potential construction-related effects on water quality. BMP's include: oil-absorbing floating booms will be kept onsite and the contractor will respond

to aquatic spills during construction; vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids, If such leaks or drips do occur, they will be cleaned up immediately, equipment maintenance and/or repair will be confined to one location, and runoff in this area will be controlled to prevent contamination of soils and water; a Storm Water Pollution Prevention Plan (SWPPP) will be required to prevent construction materials (fuels, oils, and lubricants) from spilling or otherwise entering the creek.

Effects of the Proposed Action would result from demolition and removal activities adjacent to and within the riparian corridor, in upland terrestrial areas, and in shoreline beach areas for the NER Plan/nearshore placement area for the LPP. These activities would be short-term in duration. Vegetation loss would be limited to disturbance of riparian, upland, and beach areas which would be restored following disturbance.

No changes are expected to the downstream reaches during winter storms that occur during years that construction takes place. Rindge Dam does not impede sediment flows during winter storms because the area behind the dam is full so that flows carry sediments over the dam into the lower reaches. That would continue to happen during winter storms in the construction years when construction would be halted. The impound area upstream of the dam would be cleared as part of the initial site preparation work. This does mean that increased sediments could be available for transport downstream during winter storms. However, this area is relatively small compared to the overall watershed and will decrease over time as the creek is moved down into a narrowing canyon. The construction contractor will be required to prepare the site for winter each year adding BMPs to reduce introduction of turbidity below the dam to the maximum extent feasible. There would be no effect to the species or to designated critical habitat.

Eight upstream barriers, four on Cold Creek and four on Las Virgenes Creek would also be removed as part of this project. Removal of those barriers combined with removal of Rindge Dam will open up an estimated 15 miles of creek to southern California steelhead. However, Rindge Dam will still be an impediment to southern California steelhead migration during removal of the upstream barriers, so that southern California steelhead will not have access to any of the sites during construction. Implementation of BMPs to control turbidity and the lack of access will result in no effect to southern California steelhead during removal of any of the upstream barriers.

A fish rescue and relocation plan will be developed prior to commencing work each year for southern California steelhead. The fish rescue and relocation will be conducted under the supervision of a qualified biologist and will entail measures to reduce effects to steelhead and other fish associated with in-water construction activities. Procedures will be established in consultation with the CDPR and NMFS during Preliminary Engineering Design (PED).

5.1 Effects on Federally Protected Species – Southern California Steelhead

Southern California steelhead are known to inhabit Malibu Creek for spawning and rearing. However, they are unable to pass above Rindge Dam. Sediment removal efforts have the potential to affect steelhead and its habitat during and immediately after dam removal. Debris generated during dam removal, could fall into the pools immediately downstream of the dam posing a hazard

to any individuals located in the pool. Minor sediment volumes may also enter Malibu Creek during construction (although considered to be minimized by implementation of BMPs to control water flow and sediment removal). The resulting turbidity could affect individual southern California steelhead in pools below the dam. Minor amounts of sediment may remain at the end of each construction year, including the final construction period that could be flushed down the creek. These sediments could alter stream bottom habitat until stream flows flush them out to sea. These are considered to be temporary construction impacts.

Due to the higher likelihood of impacts to the immediate downstream reach, the Corps is proposing to catch and relocate any southern California steelhead found in the Dam Pool located at the face of the dam and from and the Big Boulder Pool prior to the initiation of construction activities (see 5.4.1). Catch, transport, and relocation will be conducted in consultation with the CDPR and NMFS and will be repeated each year prior to the initiation of construction activities for that year.

Long-term impacts include changes to river hydrology associated with a free-flowing creek including degradation and aggradation of stream sediments. This may result in a shift of habitat types within the three mile reach below the dam site, but should not result in any overall habitat changes in this reach. The removal of Rindge Dam and opening of upstream habitat for fish passage, spawning, and rearing will provide long-term benefits for steelhead allowing access to a greater range of good quality habitat for spawning and early life history stage survival and growth.

5.1.1 NER Plan

The temporary construction impacts described above would persist over the seven year construction period plus one year post-construction.

5.1.1 LPP

The temporary construction impacts described above would persist over the eight year construction period plus one year post-construction.

5.2 Effects on Designated Critical Habitat – Southern California Steelhead

The proposed project has the possibility of short-term, adverse effects to designated critical habitat during construction. However, these effects are short term in nature and will not lead to adverse modification of the critical habitat. These effects will be primarily to one of the six PCEs (PCE 1) identified for critical habitat for southern California steelhead.

PCE 1 relates to freshwater spawning sites. Due to the addition of fine sediments during project construction some downstream areas are expected to accumulate sediments while others may see increased erosion. The reach immediately downstream of the dam is expected to be one of those areas that accumulate sediments. BMPs are expected to control sediment entry into the stream to the maximum extent feasible, however there is no guarantee that sufficient sediments may enter the creek that could affect the ability of the pool immediately adjacent to the dam to function as a spawning site. BMPs include channelizing the creek flow around the work area, revegetation of

disturbed areas, sloping the final impound surface at the end of each construction year, cutting the Dam simultaneously with reducing impound elevations, construction of a cofferdam for control of flows, removal of the cofferdam during the winter season, development of slope stability measures for areas previously saturated by groundwater in the impounded sediment footprint, and construction ramp stability measures. Added measures may be imposed by the California Coastal Commission as part of it Coastal Consistency Determination review prior to release of the Final IFR.

The CDPR will be responsible for obtaining a Streambed Alteration Agreement from the California Department of Fish and Wildlife that may also add special conditions. BMPs to control turbidity are likely to be added as conditions for the 401 Water Quality Certification. Certification will be sought from the Los Angeles Regional Water Quality Control Board during Preliminary Engineering Design (PED) phase of the project. Additionally, a storm water pollution prevention plan (SWPPP) will be prepared to address potential impacts to storm water quality from construction equipment, construction crews, and construction practices. The SWPPP shall include best management practices to prevent accidental spills and other contamination of Malibu Creek, and shall include provisions for in-the-dry construction at the barrier sites, and regular monitoring of water quality, including turbidity, during construction and in the winter runoff season. The SWPPP will include a provision for adaptive measures to be taken in the event of excess contamination or turbidity. Construction will not be conducted during the winter rainy season, thus not affecting the species or its critical habitat during times when the lagoon is more likely to be open allowing access to and from the ocean.

Downstream reaches, including Malibu Lagoon, are not expected to be significantly impacted during construction. The amounts of sediment flushed downstream are expected to be minor and within the normal range of existing conditions. Long-term impacts include changes to river hydrology associated with a free-flowing creek including degradation and aggradation of stream reaches. The removal of Rindge Dam and restoration of more natural sediment regimes will provide long-term benefits for Malibu Lagoon. A normal hydrologic regime is expected to establish after construction restoring water hydrology and quality to the creek. PCEs 2 & 3, related to freshwater rearing sites and freshwater migration corridors respectively, are not expected to be affected (either adversely or beneficially) either during or after project construction. Malibu Creek should retain its ability to support southern California steelhead rearing and migration.

The lack of impacts to Malibu Lagoon also means that PCE 4 will not be affected. PCE 4 relates to estuarine areas free of obstruction. Malibu Lagoon serves as the estuarine endpoint of Malibu Creek and is the entry/exit point for southern California steelhead migrating into and out of Malibu Creek into the Pacific Ocean. That estuarine endpoint is not expected to be affected by the proposed project and is expected to retain its current functionality for southern California steelhead.

The project is not expected to impact the nearshore marine areas off shore of Malibu Creek. PCE 5, related to the quality of nearby marine areas, would not be affected. Placement of beach-compatible either on the beach or in the nearshore would have negligible impacts due to the relatively small volume to be placed over an extended three-year period. Marine surveys of the

nearshore placement site have confirmed that the nearshore placement site is unconsolidated sandy bottom habitat (USACE 2016).

Placement of sand, either on the beach for the NER Plan or into the nearshore for the LPP, is not expected to affect offshore marine areas (PCE 6) as habitat for southern California steelhead. Turbidity resulting from sediment placement is expected to be highly localized and short term and to be easily avoidable by individual southern California steelhead. Therefore, no affect is expected from the project on PCE 6.

5.3 Effects of Alternatives to the Proposed Action

Currently both action alternatives (the NER Plan (Alternative 2d1) and the LPP (Alternative 2b2)) considered in this Biological Assessment include removal of the dam arch; the LPP would additionally remove the dam spillway. The major difference involved in removal of the dam versus dam and spillway is the additional year of construction required for dam and spillway removal. Under both alternatives the proposed action is to mechanically remove all sediments beneficially reusing beach-compatible sands on the beaches for the NER Plan or into a nearshore placement site for the LPP.

Other alternatives were evaluated and dismissed for a variety of reasons. The major differences are in the method for removing accumulated sediments from behind the dam. Removal of the Rindge Dam impounded sediments by natural transport (Alternative 3) places all of the accumulated sediments into the downstream reaches resulting in substantial impacts to downstream habitats, including critical habitat for the southern California steelhead and tidewater goby. Removal of sediments by a hybrid mechanical/natural transport (Alternative 4) also results in decreased impacts to downstream habitats from the use of natural transport to move some of the accumulated sediments downstream, but still results in substantial impacts to downstream habitats, including critical habitat for the southern California steelhead and tidewater goby. The action alternatives involving natural transport of the accumulated sediments, therefore, would likely result in a greater chance for adverse impacts to California steelhead likely resulting in findings of adverse impacts, but still not to a jeopardy determination for the continued existence for the distinct population segment. The action alternatives involving natural transport of the accumulated sediments would also likely result in adverse modifications to designated critical habitat for the southern California steelhead. Alternatives 3 and 4 also require the construction of floodwalls in Reach 2 of Malibu Creek.

The only other alternative is the No Action Alternative. Under the No Action Alternative, Rindge Dam would remain in place. Currently the dam holds 780,000 cubic yards of sediment allowing only silt and clay to pass over and downstream of the dam. This will allow for continued aggradation in the reach immediately downstream of the dam upwards of 9.8 feet over 75 years. This hydrologic disruption may cause stream narrowing, erosion, and development of a coarse streambed altering vegetation composition and habitat diversity. The existence of the dam will continue to act as a wildlife barrier. Species that depend upon Malibu Creek to pass up and downstream would continue to be unable to pass from coastal to interior habitats over Rindge Dam. As with vegetation and habitat impacts, altered hydrology will reduce the movement of

large sediment particles such as gravel and cobble downstream of the dam. This sediment starvation of the creek's downstream reaches may impact steelhead spawning habitat. Additionally, with the dam in place 15 miles of upstream habitat will remain unavailable to steelhead. As with general wildlife impacts, the dam will continue to function as a wildlife barrier and impacts on special-status species will be similar to those discussed under wildlife impacts.

5.4 Proposed Conservation Measures

5.4.1 Southern California Steelhead

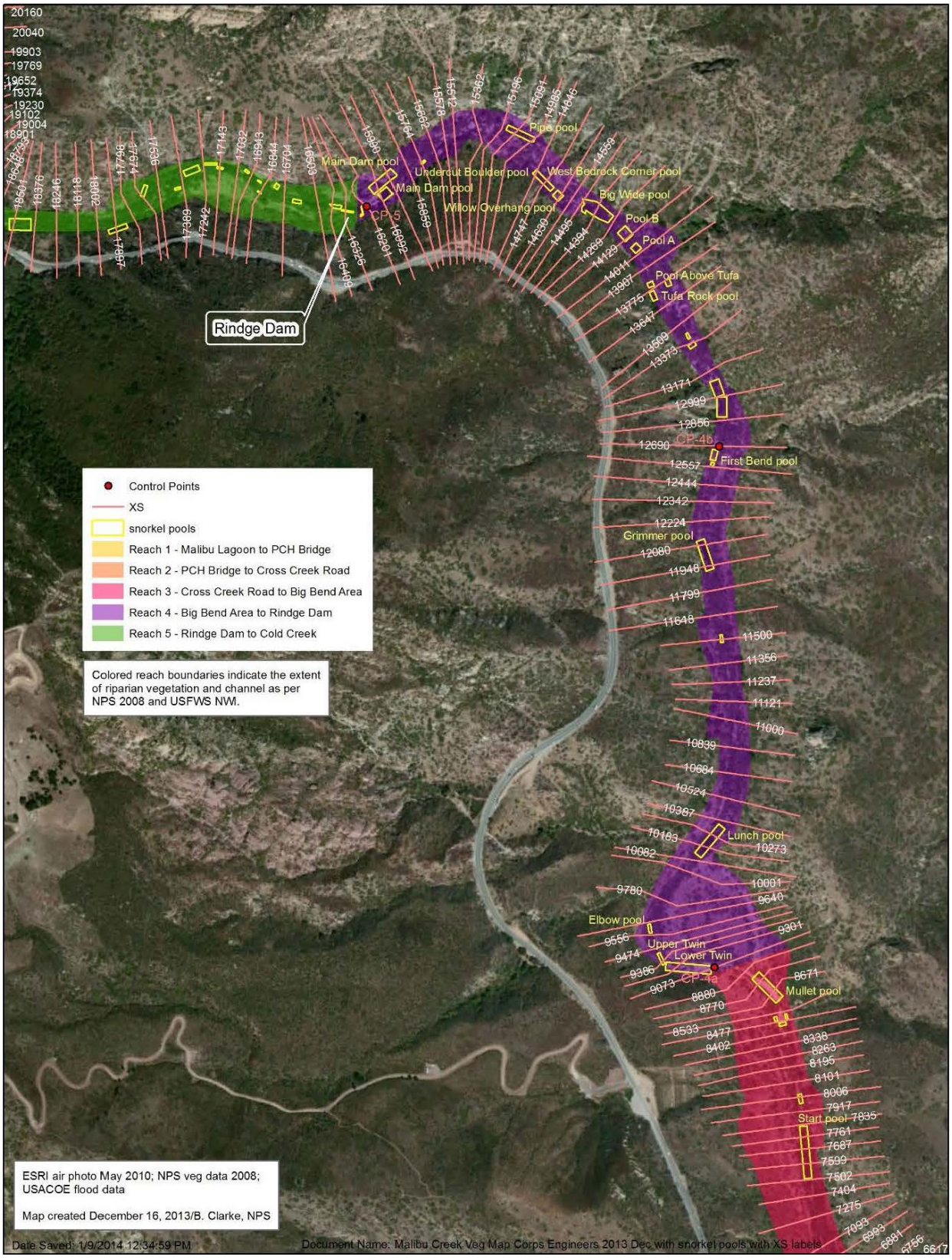
In order to avoid direct affects to southern California steelhead during dam removal activities, pre-construction surveys will be conducted each year of construction to identify the presence/absence of fish below the dam within the construction zone. If southern California steelhead are present, their relocation to suitable habitat will be coordinated with CDPR and NMFS. Relocation efforts would focus on suitable pools located within Malibu Creek downstream from the dam and out of the area of influence from construction activities. This minimizes the shock of catch, transport, and release, and increases chances for survival for individual fish. Catch and release would utilize standard methodology either seining or efishing, subject to review by the NMFS. Individuals handling steelhead will be properly permitted to do so through the NMFS.

Steelhead would be removed from the Main Dam Pool and the Undercut Boulder Pool and relocated downstream. Pool locations are shown on Figure 4. Blocking nets would be installed across Malibu Creek downstream of the Big Boulder Pool to prevent relocated steelhead from swimming back upstream into either of these two pools. There is a location between the downstream end of that pool and a short run/riffle complex where nets could reasonably be set. Blocking nets will need to be long enough to cover bankfull width, 2 m tall and mesh can be 0.25 -1 cm. They can be anchored with fence posts and zip ties.

Construction BMPs to reduce turbidity will reduce the likelihood for downstream impacts during construction. Specific measures will be determined during PED in consultation with CDPR and NMFS as well as the Regional Water Quality Control Board. Recommended measures are discussed above in Section 5.1.

Assuming continued funding is available, current monitoring of southern California steelhead in Malibu Creek would continue and should provide both a pre-construction baseline as well as post-construction monitoring of recovery, including the use of the added habitat by returning southern California steelhead.

Figure 4. Mainstem Pools and Refugia



6 Conclusions and Determination

Table 2 lists the expected outcome based on the above information and the data collected up to this point. Conservation measures have been proposed for all species that may be affected by the Proposed Action whether or not they will be adversely affected in order to avoid jeopardy. Construction impacts may adversely affect both individual southern California steelhead as well as designated critical habitat. These impacts are determined to be short-term in nature. Relocating individual southern California steelhead downstream into pools that would not be impacted by construction, should minimize the chances of injury or death to individual specimens. Keeping individual specimens within the watershed minimizes travel time and differing water quality that may be found in other watersheds. Once a normal stream flow is restored, the downstream habitats should recover rapidly and any adverse impacts to designated critical habitat should disappear. Long-term effects are therefore beneficial within the existing critical habitat along with the expanded habitat made available by removal of the dam and upstream structures and will lead to performance of an important recommendation of the Southern California Steelhead Recovery Plan.

Table 2 Determination of Effects

		Effects Analysis					
		Species Effects Determination			**Critical Habitat Determination**		
Species	**Status**	**No Effect**	**May Affect, Not Likely to Adversely Affect**	**May Affect, Likely to Adversely Affect**	**No Effect**	**Not Likely to Destroy or Adversely Modify**	**Likely to Destroy or Adversely Modify**
Fish							
Southern California Steelhead, *Oncorhynchus mykiss*	FE CH			X		X	
	FE= Federal Endangered Species *FT = Federal Threatened Species* *FC= Federal Candidate Species* *CH = Critical Habitat*						

7 List of Documents

This section provides a list of the documents that have bearing on the project or the consultation, including relevant reports, such as any environmental impact statements prepared for the project.

- Malibu Creek Ecosystem Restoration Project Draft Integrated Report (USACE 2017)
- Malibu Creek Environmental Restoration Project Habitat Evaluation (Appendix J to USACE 2017)
- Barrier and Habitat Assessment of Upstream Tributaries to Malibu Creek, Prepared by CDM, Inc. September 2008
- Draft Fish and Wildlife Coordination Act Report, Prepared by US Fish and Wildlife Service. May 2013

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UNITED STATES DEPARTMENT OF COMMERCE
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West Coast Region
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January 23, 2018

Eduardo T. De Mesa
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Re: Endangered Species Act Section 7(a)2 Technical Assistance letter for the Malibu Creek Ecosystem Restoration Project, Los Angeles and Ventura Counties

Dear Mr. De Mesa:

On November 14, 2017, NOAA's National Marine Fisheries Service received the U.S. Army Corps of Engineers' (Corps) letter requesting initiation of formal consultation for the Malibu Creek Ecosystem Restoration Project (proposed action) pursuant to Section 7 of the U.S. Endangered Species Act. The Corps' request included a biological assessment (BA), which identified potential effects of the proposed action on endangered steelhead (*Oncorhynchus mykiss*) and designated critical habitat for this species. The proposed action concerns the removal of Rindge Dam and a number of upstream fish-passage barriers on Malibu Creek for the purpose of restoring natural ecosystem processes, including steelhead access to historical spawning and rearing habitats upstream of the dam.

Upon careful review of the Corps' written request and accompanying BA, NMFS has determined that formal consultation cannot be initiated, primarily because a clear understanding of the potential effects of the proposed action on endangered steelhead and designated critical habitat in for this species has not been provided, in accordance with 50 CFR §402.14(c). For this reason, the enclosure to this letter describes in detail the information that the Corps should provide NMFS for initiating formal consultation.

Based on the December 14, 2017, teleconference with the Corps, NMFS understands the urgency associated with completing the formal consultation for the proposed action. In this regard, NMFS will prioritize this consultation consistent with the information that is made available for evaluating the effects of the action on endangered steelhead and designated critical habitat for this species. While awaiting information that is responsive to the enclosure to this letter, NMFS will continue to pursue the informal consultation with the Corps based on the information available at this time.

NMFS looks forward to collaborating with the Corps on this project. Please contact Jay Ogawa at (562) 980-4061 or via email at jay.ogawa@noaa.gov if you have a question concerning this letter, or if you require additional information.

Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Enclosure

cc: Suzanne Goode, California State Parks
Chris Delith, USFWS, Ventura
Mary Larson, CDFW, Los Alamitos
Administrative file: 1514WCR2018CC00008

ENCLOSURE

NOAA's NATIONAL MARINE FISHERIES SERVICE'S COMMENTS ON THE MALIBU CREEK ECOSYSTEM RESTORATION PROJECT BIOLOGICAL ASSESSMENT (dated JULY 2017)

January 23, 2018

NOAA's National Marine Fisheries Service's (NMFS) general comments and request for information concerning the U.S. Army Corps of Engineer's (Corps) draft Malibu Creek Ecosystem Restoration Project Biological Assessment (hereafter "BA") are provided herein. The comments and request for information stated here are directly related to concerns with the BA, which must be addressed to satisfy requirements for initiating formal consultation under Section 7 of the Endangered Species Act, in accordance with 50 CFR §402.14(c).

As a matter of clarification, the Corps proposes two alternatives for restoring aquatic habitat connectivity in Malibu Creek: (1) the National Ecosystem Restoration (NER) Plan, and (2) the Locally Preferred Plan (LPP). The principal difference between these plans is the removal of the spillway, as proposed in the LPP. NMFS recognizes the Final Recommended Plan has yet to be determined, however only one project and its potential effects on endangered steelhead (*Oncorhynchus mykiss*) and critical habitat will move forward and be evaluated. Based on discussions with the non-federal project sponsor, the California Department of Parks and Recreation, NMFS' review of the BA solely considers activities described under the LPP, the anticipated selected alternative. Therefore, the following comments and request for additional information solely concern the LPP.

GENERAL COMMENTS ON THE BIOLOGICAL ASSESSMENT

First and foremost, NMFS generally supports the proposed action, which is essential for the recovery of the Malibu Creek watershed-specific population of endangered steelhead. In this regard, the proposed action is expected to restore species access to historical spawning and rearing habitats and exchange between resident and anadromous life-history forms. Although the proposed action is expected to have beneficial effects on the long-term survival and recovery of endangered steelhead, a number of short term, and potentially chronic, adverse effects are nonetheless expected; our comments and recommendations for revision are primarily intended to assist the Corps minimize the short-term adverse effects anticipated from the proposed action.

In terms of process, formal consultation under Section 7 of the U.S. Endangered Species Act (ESA) cannot be initiated because the BA lacks sufficient detail to assess potential effects on steelhead and critical habitat, 50 CFR §402.14(c). For instance, while the BA identifies three primary components of the proposed action: (1) removal of the dam; (2) removal of sediments behind the dam; and, (3) modification/removal of upstream barriers on Las Virgenes and Cold Creeks, the specific activities to occur under each component are not adequately described or are completely absent. Additionally, the technical analyses used to support effects determinations in the BA are not provided, and no engineering plan for the proposed action is provided. As a

result, the lack of information has generated a number of comments that are summarized below and subsequently described in greater detail in the request for information section of this enclosure.

One concern involves the short and long-term geomorphic effects of the proposed action on physical and biological features of designated critical habitat. As an example, the BA anticipates temporary sedimentation and increased erosion within the 3-miles of steelhead critical habitat downstream of Rindge dam following each construction season, yet the BA does not describe the sediment transport model or include model results used to evaluate effects on steelhead and critical habitat. Understanding the geomorphic effects is essential because, in part, the existing habitat downstream of the dam currently supports spawning of endangered steelhead, as revealed by NMFS' own surveys of steelhead nests in 2010 throughout the 3-miles of habitat downstream of the dam (R. Bush, NMFS, pers. comm. 2017).

The potential long-term geomorphic effects resulting from the removal of Rindge Dam and the spillway are not adequately addressed in the BA. One area of substantial uncertainty involves the Corps' design and basis for their approach to stream channel restoration; the BA does not include a design plan of the proposed channel configuration or a description of anticipated effects to steelhead aquatic habitat over time. Similar to the Corps' assessment of short-term effects to steelhead critical habitat, the BA appears to lack any meaningful geomorphic or hydraulic assessments for evaluating the effects of the final project design.

Because the BA identifies geomorphic effects to designated critical habitat for endangered steelhead, NMFS recommends that an effectiveness monitoring and adaptive-management plan be developed. Given our current understanding of the project-related uncertainties, the framework of this plan should involve an explicit structured protocol that would allow the Corps and the resources agencies to respond to new information or changing conditions, detect and reconcile deficiencies or problems in a timely manner, and incorporate feedback loops that link implementation and monitoring to a decision-making process that results in appropriate changes during construction or post-construction operations to benefit steelhead and their habitat.

The proposed modification or removal of fish-passage barriers on Las Virgenes and Cold Creeks are not described in the BA, but should be if the Corps would like these considered in the formal consultation. Remediation of these barriers would provide access to an additional 9.5 miles of steelhead rearing and spawning habitats within the Malibu Creek watershed and is a critically important component of the proposed action. However, the BA does not describe the proposed designs to be implemented, the specific actions that would be undertaken to remove or modify them, and the measures that would be undertake to minimize the likelihood that onsite effects would extend downstream below Rindge Dam. Without a detailed description of each proposed passage project and associated hydraulic analysis and geomorphic assessment, the potential short and long-term effects to steelhead cannot be adequately predicted.

INFORMATION NEEDED TO INITIATE FORMAL CONSULTATION

The information needed to initiate formal consultation and adequately analyze and then predict effects of the proposed action on endangered steelhead and designated critical habitat, consistent with 50 CFR §402.14(c), is as follows.

Action Area.–This section of the BA should be updated to better define the location and extent of specific components of the proposed action. Although Figure 3 (BA at pg. 7) is referenced as the "Action Area" individual components of the proposed action and associated project footprints are not clearly identified. For each component of the proposed action, describe the instream linear extent (upstream and downstream) of the work area. Additionally, the action area description should account for the upstream and downstream extent of any potential effects, which can transcend the physical location of a construction activity.

Removal of Rindge Dam and Spillway.–The BA generally summarizes dam demolition and removal activities, yet the details to evaluate potential effects on endangered steelhead and designated critical habitat are lacking. In this context, NMFS requests the following information.

- A table that clearly summarizes the sequence and manner in which the dam and spillway will be removed over the proposed 8-year time frame. For each construction season identify the: (1) proposed instream work window (this is commonly confined to June 1 to October 31); (2) activities to prepare the work area for construction; (3) construction activities to be undertaken; and, (4) activities undertaken to winterize the work area.

- A description of the amount and type of vegetation (e.g., mature trees and shrubs) to be cleared and removed from the demolition area during the initial year of construction.

- A description of the methods for demolishing the dam and spillway each construction season. If hydraulic hammers or blasting are to be used, provide an acoustic assessment of potential effects on steelhead. The assessment should describe the methods for evaluating potential effects on steelhead due to noise generated from hydraulic hammering and blasting, and results of the acoustic evaluation. Additionally, include a discussion of any sound-attenuation measures that would be incorporated into the action to minimize effects on steelhead.

- A description of the methods to mechanically remove the impounded sediments each season. This description should include a discussion about how the finer material (i.e., sand and silt), and any related slurry, would be transported out of the impounded area. Lastly, measures should be incorporated into the action for the purposes of minimizing (1) the likelihood of an accidental release of sediment-water slurry to the creek, and (2) impacts to water quality if a spill were to occur.

- A description of the locations where excavated material will be temporarily stockpiled and the measures proposed to minimize sedimentation and turbidity effects, owing to the stockpiles, on designated critical habitat for endangered steelhead.

- A design drawing depicting the sections of dam and spillway to be removed incrementally over the 8 years of construction. The drawing should clearly depict existing dam crest and spillway elevations.

- Details regarding access to the dam site during construction and related construction and improvement of access roads (BA at pgs. 6 and 8). Provide a plan sheet of the dam removal site that depicts the locations of the proposed access roads, staging areas, and stockpile sites. Additionally, identify all temporary bridges or culverts that may be installed.

- The list of measures for avoiding and minimizing potential effects to steelhead and critical habitat during dam and spillway demolition.

Dewatering and Fish Relocation.–The proposed action will require dewatering habitats occupied by steelhead, which would result in impacts to individual steelhead and designated critical habitat for this species. However, the BA does not explicitly include a fish rescue and relocation plan, but should. To adequately assess potential effects that may result from dewatering and fish-relocation activities, the Corps should provide the following information:

- Description of each location where dewatering of the work area will occur under the proposed action. This includes the dam/spillway removal area and upstream fish-passage barrier remediation sites. Clearly delineate the upstream and downstream limits of each proposed water diversion and the length of stream to be dewatered.

- Description of the downstream limit of the steelhead presence-absence surveys that will be performed each construction season (pg. 22). Include a discussion that justifies the determination of the downstream limit.

- Description of the methods utilized to capture and transport fish to relocation sites. If electrofishing is proposed, it should be performed by a qualified biologist and conducted in accordance with *NMFS' Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act*, June 2000.

- The BA states that steelhead will be relocated to suitable pool habitat downstream of the dam and out of the influence of construction activities (BA at pg. 22). Suitable habitat for steelhead is based on various factors such as dissolved oxygen, temperature, and habitat complexity (i.e., cover such as overhanging vegetation). Therefore, the revised or supplemental BA should define the habitat criteria to be met for relocation sites. If it is uncertain that criteria can be met throughout construction, the Corps should develop a relocation-site monitoring plan to detect and then reconcile inhospitable site conditions.

- The BA suggests that dewatering wells will be used within the dam removal site to extract groundwater (pg. 6). However, the locations of the proposed wells and how the extracted water will be treated to minimize impacts to water quality downstream of the dam construction site need description.

- Identify the measures that are proposed to minimize effects of sedimentation and turbidity during dewatering (e.g., settling basin), and include such measures in the revised or supplemental BA. Additionally, provide the list of measures that will be implemented to winterize the work site following each year of construction (BA at pg.18).

Sediment Removal.–Impounded sediment will be removed incrementally over 8 seasons, however the effects of this component of the proposed action on steelhead and designated critical habitat are not clearly described. To develop a clear understanding of the potential effects of sediment-transport conditions each season, particularly the type, amount, and extent to which this component could materially alter the functional value of spawning, rearing, and migration habitats downstream of the dam, the Corps should provide an updated evaluation of these effects on adult and juvenile steelhead. To this end, the updated assessment should include the following information:

- A hydrologic analysis and sediment-transport model that explicitly evaluates the rate at which the dam and spillway are incrementally removed and sediments are transported downstream each construction season. The evaluation should describe in detail the degree to which transported sediment would affect steelhead spawning, rearing, and migration habitats downstream of the dam under various hydrological conditions (e.g., very wet, wet, normal, below normal, dry, extremely dry).

- Based on the hydrologic analysis and sediment-transport model described above, provide an evaluation of potential effects on Malibu Lagoon. The evaluation should clearly describe the expected changes to surface hydrology (e.g., frequency and timing of lagoon breaching) and estuarine processes (e.g., berm dynamics, circulation, lagoon volume, depth profiles, nutrient loading), that result from the dam removal activities each season and impact the quality and quantity of steelhead habitat. Specifically describe the degree and extent to which the project is likely to affect steelhead rearing and migratory behavior in the lagoon.

- A description of the geotechnical investigation (e.g., core, soil borings, and test pits) and subsequent evaluation to identify the size, quality, and quantity of impounded material to be removed each construction season.

- A detailed description of the winterization measures (BA at pg. 20) that are to be implemented following construction each season. Include a discussion about how the proposed measures are anticipated to minimize downstream sedimentation (i.e., silt and sand) effects to steelhead and designated critical habitat for this species.

- Because sediment-transport conditions described in the BA (pg. 19) suggest that sedimentation (i.e., settling of sand and smaller particles on the channel bed, filling interstitial spaces between coarse substrate) within the downstream reaches could affect spawning and rearing habitats over 9 consecutive seasons, the Corps should propose a monitoring and maintenance plan that is capable of detecting and then timely reconciling adverse effects to ensure that suitable spawning and rearing conditions are maintained through the downstream reach over the period of construction.

Post-Dam Removal.–The potential instream and geomorphic effects owing to removal of Rindge Dam are not sufficiently described, but should be. The proposed final design is unclear and the BA does not explicitly include an evaluation of the proposed design alternative. As a result, the manner in which the final design would restore steelhead passage through the impounded stream reach is not clear. Accordingly, the Corps should include a basis-of-design report with the revised or supplemental BA. The report should include, but not be limited to, the following information:

- Clear identification of the stream channel design objectives to be met. These objectives should be described in terms of geomorphic, hydraulic, and biological function.

- Hydrologic and hydraulic analyses, geomorphic assessment, and sediment-transport model that was used to establish design criteria for the restored channel. The design criteria should at a minimum consider proposed stream-channel geomorphology, sediment transport, fish passage, and hydraulic performance. A detailed discussion about how the analyses were utilized to establish the design criteria should be included.

- Design details regarding the proposed final channel configuration, including the length of stream channel to be excavated, alignment of the low-flow channel, upstream and downstream control points, and proposed channel slope. Describe any geotechnical investigations that were used to characterize the streambed surface that would remain after the impounded sediment is removed. Additionally, provide plan sheets that clearly depict the aforementioned features of the restored stream channel.

- A longitudinal profile of the proposed project-thalweg elevation compared to the existing thalweg. The profile should extend 10 channel widths upstream and downstream of the project reach and clearly depict significant channel features such as the upstream and downstream control points.

- Channel cross-sections, depths, and widths for the section of excavated stream channel to be restored.

- A detailed evaluation of how the restored channel will promote the development of steelhead habitat including the maintenance of suitable passage and rearing conditions over the life of the project. The evaluation should include: (1) how the proposed streambed elevations, channel slope, and, upstream and downstream control points were determined, (2) a description of the stability of the restored channel and any self-sustaining streambed features, (3) how the restored channel will provide hydraulic conditions similar to those naturally found in Malibu Creek (outside the influence of Rindge Dam) and, (4) a description of the anticipated changes to streambed elevation owing to the dam removal and how those changes are expected to alter the distribution of steelhead habitat within and downstream of the dam site over time. Finally, summarize all anticipated changes to stream morphology and fish-passage conditions, including the extent, nature, and duration of these changes, owing to the restored stream channel.

- If the restored channel cannot ensure that suitable fish-passage conditions will be attained over time, describe the implications for passage of adult and juvenile steelhead, and propose measures to minimize the adverse effects.

- A detailed description of the related possible effects on steelhead passage and spawning and rearing conditions if aggradation or degradation of the restored streambed is expected. Depending on the type and severity of these effects, the Corps may wish to include in their revised or supplemental BA a proposed plan that is intended to offset the potential effects of channel aggradation or degradation on steelhead passage and spawning and rearing conditions.

- Because the lack of a current design generates much uncertainty in terms of possible effects on steelhead and critical habitat, the report should include a commitment to provide NMFS with 30, 60, 90, and 100% draft design plans as each design stage becomes available.

- A detailed post-construction monitoring plan and adaptive management plan describing (1) the methods for assessing sustained function of the restored channel, (2) the requirement to submit the reports to NMFS that provide the results of monitoring and any evidence of successful steelhead passage (e.g., observed adult steelhead migrating through the dam site, redds upstream of dam site), and (3) recommendations and the schedule for future proposed maintenance to ensure long term function.

- A detailed description of the anticipated changes to estuarine processes (e.g., circulation, habitat types, berm dynamics, depth profiles, nutrient loading) as a result of the restored channel. The Corps should describe the degree and extent to which the final design may affect steelhead rearing and migratory behavior within the lagoon, during the post-removal phase.

Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks.–The BA identifies fish-passage projects on Las Virgenes and Cold Creeks, however design details and information concerning anticipated passage conditions are absent. For NMFS to assess potential effects on steelhead, the Corps should provide the following information:

- The construction duration and sequence of activities for the fish-passage projects on Las Virgenes and Cold Creeks.

- The basis-of-design report and construction details for each individual fish-passage project. The report should include applicable items described in the *Post-Dam Removal* section of these comments (Bullets 1-11).

- Hydraulic design projects should meet NMFS[1] and CDFW[2] fish–passage criteria. Provide a fish-passage analysis that (1) evaluates and justifies the appropriateness of the selected high and low passage-design flows (adult and juvenile) for the proposed design, and (2) details how the proposed design will function and influence migration and rearing habitats during winter and summer flows, based on the findings of the hydraulics analysis. Concerning the evaluation of the high design flow for adult steelhead, describe how the design flow was calculated and the active channel was defined. The evaluation should include analysis for the adult and juvenile design flows through the project area, including 10 channel lengths upstream and downstream of the existing impediment. Based on the evaluation, a detailed justification describing the suitability of the selected high passage-design flow for adult steelhead should be provided. Finally, the analysis should indicate whether the proposed design will be self-sustaining and reliable.

- Provide the list of measures that are proposed to minimize the effects of turbidity on steelhead (BA pg.18).

References Identified in the BA. – NMFS requests the Corps provide the following documents listed in BA (pg. 26). The preferred format is electronic (i.e., CD or DVD).

- Malibu Creek Ecosystem Restoration Project Draft Integrated Report (USACE 2017)
- Malibu Creek Environmental Restoration Project Habitat Evaluation (Appendix J to USACE 2017)
- Barrier and Habitat Assessment of Upstream Tributaries to Malibu Creek, Prepared by CDM, Inc. September 2008.
- Draft Fish and Wildlife Coordination Act Report, Prepared by US Fish and Wildlife Service. May 2013.

CLARIFICATION OF EXISTING INFORMATION IN BA

In addition to the information requested above, NMFS requires clarification of specific elements of the BA. These requested clarifications are related to the requested information above and should be addressed in the revised or supplemental BA.

- Clarify whether eight upstream barriers (pg. 9) or nine (Figure 3) will be removed or modified.
- Clarify the following statement "Habitat Evaluation outputs remain the same as those calculated for the NER Plan, but overall costs increase (pg. 10)."

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[1] NMFS. 2011. Anadromous Salmonid Passage Facility Design. National Marine Fisheries Service-Northwest Region. July 2011

[2] CDFG. 2009. California Salmonid Stream Habitat Restoration Manual: Part XII: Fish Passage Design and Implementation. California Department of Fish and Game. April 2009.

- The BA states that a qualified biologist will oversee fish rescue and relocation activities (pg. 18), and ensure compliance with protective measures (pg. 17). Provide a description of the qualifications required for the monitoring biologists.

- The BA states that "no changes are expected to the downstream reaches during winter storms that occur during years that construction takes place (pg. 18)." On page 19, the BA states that minor volumes of sediment may also enter the creek and could affect steelhead and stream habitat downstream. Clarify this apparent discrepancy.

- Details regarding the removal and trimming of riparian vegetation under the proposed action and revegetation plan should be included in the revised or supplemental BA. Include a complete set of design drawings with sufficient detail to indicate existing riparian trees to be removed or trimmed for all construction locations under the proposed action. Identify the ratio that riparian trees (and vegetation) will be replanted to mitigate loss of trees or enhance temporarily disturbed areas. A description of the irrigation system that will be installed to provide water to newly planted vegetation for establishment periods. Finally, include a description of the revegetation-monitoring plan to be implemented following project completion.

ADDITIONAL RECOMMENDED CONSIDERATIONS

- Section 2.2.1 of the BA states that of the 780,000 cubic yards (cy) of impounded sediment about 278,000 cy of beach-compatible sand would be placed on the shoreline. The remaining volume of material composed of gravel and cobble would be permanently disposed at the Calabasas Landfill. Rather than disposing all gravel and cobble, the Corps should consider using this material to improve steelhead spawning habitat in lower Malibu Creek. Based on the sediment-transport model, the Corps may wish to strategically place spawning-size material in predetermined locations or allow for portions of impounded material to be transported naturally downstream. Additionally, all the vegetation on the surface of the impounded area will be removed during the first year of construction. NMFS recommends that mature trees be stockpiled and repurposed during the stream-restoration phase of the project. The material may be utilized at predetermined locations according to the final design to create instream habitat features for rearing juvenile steelhead or resting areas for migrating adults. Finally, the fine-particle and nutrient rich top soils that are adapted to sustain plant life within the impounded area to be excavated could also be stockpiled and used in the revegetated areas of the restored channel.

- Section 5.3 of the BA generally describes other alternatives to dam removal, however the rationale used to dismiss them is not entirely clear to NMFS. Alternatives 3 and 4 involved the natural transport of impounded sediment. It was determined that natural transport would likely result in adverse impacts to steelhead and critical habitat. The timeframe over which these alternatives would occur and degree that steelhead and critical habitat would be impacted are not described. NMFS recognizes the potential of adverse effects to steelhead and critical habitat associated with the natural transport of

impounded sediment, however the downstream reach was apparently starved, or nearly so, of larger material (i.e., steelhead spawning gravel and cobble) up until the reservoir became filled with sediment. The release of impounded material could remedy the geomorphic effects of Rindge Dam and create higher quality spawning habitat in lower Malibu Creek than what currently exists. Additionally, under the current proposed action effects to steelhead and critical habitat would occur over 9 consecutive years. If the removal of Rindge Dam were to occur in a single construction season or reduced number of seasons where steelhead spawning gravels could be placed at strategic locations in lower Malibu Creek, these impacts may be lessened to some unknown extent. To this end, NMFS recommends that the Corps consider evaluating an approach to dam removal that reduces the consecutive years that steelhead and critical habitat would be exposed to potential adverse effects and enhances the gravel supply at steelhead spawning sites in lower Malibu Creek.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
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February 8, 2018

Planning Division

Ms. Alecia Van Atta
Assistant Regional Administrator
California Coastal Office
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
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Dear Ms. Van Atta:

This letter is in response to your January 23, 2018, letter indicating that not all relevant data required by 50 CFR 402.14(c) was provided with our request to initiate formal consultation under Section 7 of the Endangered Species Act (ESA) of 1973, as amended, for the Malibu Creek Ecosystem Restoration Project for the southern California steelhead (*Oncorhynchus mykiss*) and its designated critical habitat. We respectfully disagree for the reasons stated below.

As provided in 50 CFR § 402.14(c), a written request to initiate formal consultation shall include:

1. A description of the action to be considered. This information was provided in Section 2.2 of the Biological Assessment (BA) attached to the formal request letter and described in Section 4.11 of the Draft Integrated Feasibility Report (Draft IFR) that was provided to the National Marine Fisheries Service (NMFS) in January 2017.

2. A description of the specific area that may be affected by the action. This information was provided in Section 2.1 of the BA and Section 1.9 of the Draft IFR.

3. A description of any listed species or critical habitat that may be affected by the action. This information was provided in Section 3 of the BA and Section 3.4.8 in the Draft IFR.

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects. This information was provided in Section 5 of the BA and Section 5.4.2 on page 327 and Section 6.4 of the Draft IFR.

5. Relevant reports, including any environmental impact statement, environmental assessment, or biological assessment prepared. NMFS received the Draft IFR, which included a draft environmental impact statement and several technical appendices addressing many of the issues raised in your letter, and a completed BA. The enclosure to your January 23, 2018, letter raises concerns with the adequacy of the BA, and states that NMFS' comments and request for information stated in the enclosure "must be addressed to satisfy the requirements for initiating

formal consultation, under section 7 of the Endangered Species Act, in accordance with 50 CFR § 402.14(c)." We disagree. The purpose of a BA, as stated in 50 CFR 402.12(a) and (k), is to evaluate the potential effects of the action on listed and proposed species and designated and proposed critical habitat and determine whether any such species or habitat are likely to be adversely affected by the action and is used in determining whether formal consultation or a conference is necessary. NMFS may use the results of the BA in (i) determining whether to request the Federal agency to initiate formal consultation or a conference, (ii) formulating a biological opinion, or (iii) formulating a preliminary biological opinion." 50 CFR § 402.12(k)(2). 50 CFR § 402.12(f) lists five examples of information that could be included in a BA. Regarding these contents, the regulation explicitly states, "that the contents [of the biological assessment] are at the discretion of the Federal agency." The rule that the contents of the BA fall within the discretion of Federal action agency is also supported by caselaw: City of Sausalito v. O'Neill, 211 F.Supp.2d 1175 (N.D. Cal. 2002); Defenders of Wildlife v. Babbitt, 130 F.Supp.2d 121, 126, n. 4. (D.D.C. 2001); Water Keeper Alliance v. U.S. Dept. of Defense, 271 F.3d 21, 33 (1st Cir. 2001); Strahan v. Linnon, 967 F.Supp. 581, 594 (D. Mass. 1997); Bay's Legal Fund v. Browner, 828 F.Supp. 102, 110 n.19 (D. Mass 1993). Further, such discretion is supported by the section-by-section analysis of the ESA found in the Federal Register that states:

> The Service agrees that assessments should be as complete and thorough as possible, but declines to impose strict minimum standards that all biological assessments must satisfy. . . Therefore, a new paragraph (f) [50 CFR § 402.12(f)] only contains suggestions of what a Federal agency may include in a biological assessment. . . Basically, the assessment serves as an analytical instrument and can be used by the Federal agency 'to build its case' as to whether a particular action is likely to adversely affect a listed species or its critical habitat. 51 Fed. Reg. 19947 (June 3, 1986).

Notwithstanding our discretion regarding the contents of the BA, we recognize we must provide NMFS with the best scientific and commercial data available or which can be obtained during the consultation. 50 CFR § 402.14(d). "The best available data requirement 'merely prohibits [an agency] from disregarding available scientific evidence that is in some way better than the evidence [it] relies on.'" Kern Cnty. Farm Bureau v. Allen, 450 F.3d 1072, 1080 (9th Cir. 2006). There is no requirement under the duty to use the best scientific and commercial data available to conduct new research or to have all the information possible. Southwest Center for Biological Diversity v. Babbitt, 215 F.3d 58, 60 (D.C. Cir 2000); American Wildlands v. Norton, 193 F.Supp2d 244, 251 (D. D.C. 2002). Nor does the term mean a scientific certainty. Center for Biological Diversity v. Lohn, 2003 WL 23004985 (W.D. Wash. 2003). The information you have requested in the enclosure to your January 2018 letter has either already been provided or is not available or obtainable during the consultation. Accordingly, we have provided NMFS with the best scientific and commercial data available in accordance with 50 CFR § 402.14(d).

6. Any other relevant available information on the action, the affected listed species, or critical habitat. A request for incidental take was attached to the letter requesting formal consultation reflecting take estimates for relocating steelhead from two pools located adjacent to

the dam to pools lower in the river to minimize construction impacts to individual steelhead, should they be present.

As evidenced above, we provided all information required to initiate formal consultation pursuant to 50 CFR § 402.14(c). Therefore, we consider that formal consultation began on November 13, 2017, the date of our written request to initiate formal consultation.

Because we furnished the best scientific and commercial data available when we initiated consultation, we consider your January 23, 2018, letter to be a request for "additional information" pursuant to 50 CFR § 402.14(f). To assist NMFS in formulating a biological opinion (BO), we have included clarifying information as an attachment to this letter. However, the additional data you have requested cannot be developed or obtained within the scope of the consultation, and will therefore not be provided.

Federal regulations prescribe a time limit of 90 days (50 CFR 402.14(e)) for completion of formal consultation, unless an extension has been requested and "the Service and the Federal agency … mutually agree to extend the consultation for a specific time period". No such request has been received nor will it be granted. Therefore, formal consultation concludes on or before February 11, 2018. Within 45 days of concluding consultation, on or about March 28, 2018, we expect the NMFS to deliver to the Corps a draft BO.

A copy of this letter is being furnished to Dr. Josephine Axt, Chief of Planning and Policy Division, South Pacific Division, U.S. Army Corps of Engineers, Mr. Chris Yates, Assistant Regional Administrator, Protected Resources Division, National Marine Fisheries Service and Mr. Anthony Spina, Chief, Southern California Branch, National Marine Fisheries Service.

Thank you for your attention to this matter. If you have any questions regarding the above, please contact Mr. Larry Smith, Project Biologist, at (213) 452-3846 or by email at lawrence.j.smith@usace.army.mil.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

1 Attachment

1. Introduction

This document has been prepared to provide additional information to the National Marine Fisheries Service (NMFS) as requested in their letter dated January 23, 2018. This document is organized to respond in the areas requested in the Information Needed attachment to the NMFS' letter.

The original BA addressed two alternatives: the National Ecosystem Restoration (NER) Plan and a Locally Preferred Plan (LPP). The LPP has subsequently been identified as the Tentatively Selected Plan (TSP) and is the only alternative under consideration for the purposes of this consultation.

2. Action Area

Action area is defined in 50 CFR 402.02 as "all areas to be affected directly and indirectly by the Federal action and not merely the immediate area involved in the action." The action area comprises a) three stream miles below Rindge Dam and approximately 5-1/2 stream miles above Rindge Dam, which includes the 2,400 linear feet of impounded sediment and xx access ramps. and immediate area surrounding the dam to be restored, b) the small barriers upstream (along Las Virgenes and Cold Creek) of Rindge Dam that could be removed for additional aquatic habitat , and c) xx liner feet of shoreline and xx linear feet of nearshore disposal sites. . Refer to Figures 2 & 3 in the BA for locations as well as Figure 1, 2 and 3 herein, taken from the Draft Integrated Feasibility Report (IFR).

3. Removal of Rindge Dam and Spillway

Figure 2 herein shows the sequence in which the dam and spillway would be removed over the proposed 8-year time frame. The proposed work window is February-October each year. Construction each year will normally cease prior to the start of the winter storm season starting in October. However, should weather forecasts predict continued dry weather, the construction year could be extended until long-term forecast predict rain that requires the contractor to shut down and leave the construction site until the following spring, defined as March at the earliest or when forecasts predict the end of the winter rainy season. Figure 2 and the schedule presented below are based on best information available and are subject to revision based on weather conditions and other environmental variables that could affect productivity.

After pre-construction investigations are completed and the design is finalized, construction begins. Reintiation of consultation per 402.16 would occur should changed conditions or design warrant reconsideration of potential impacts or implementation of conservation measures.

Year 1 of construction is exclusively species monitoring, site clearing, dewatering well drilling, and other set up.

Starting in approximately early February of construction Year 1, in order, these tasks will be done:

- Conduct a detailed survey of the surface of the impoundment area to assure that nesting species' have not established nests.

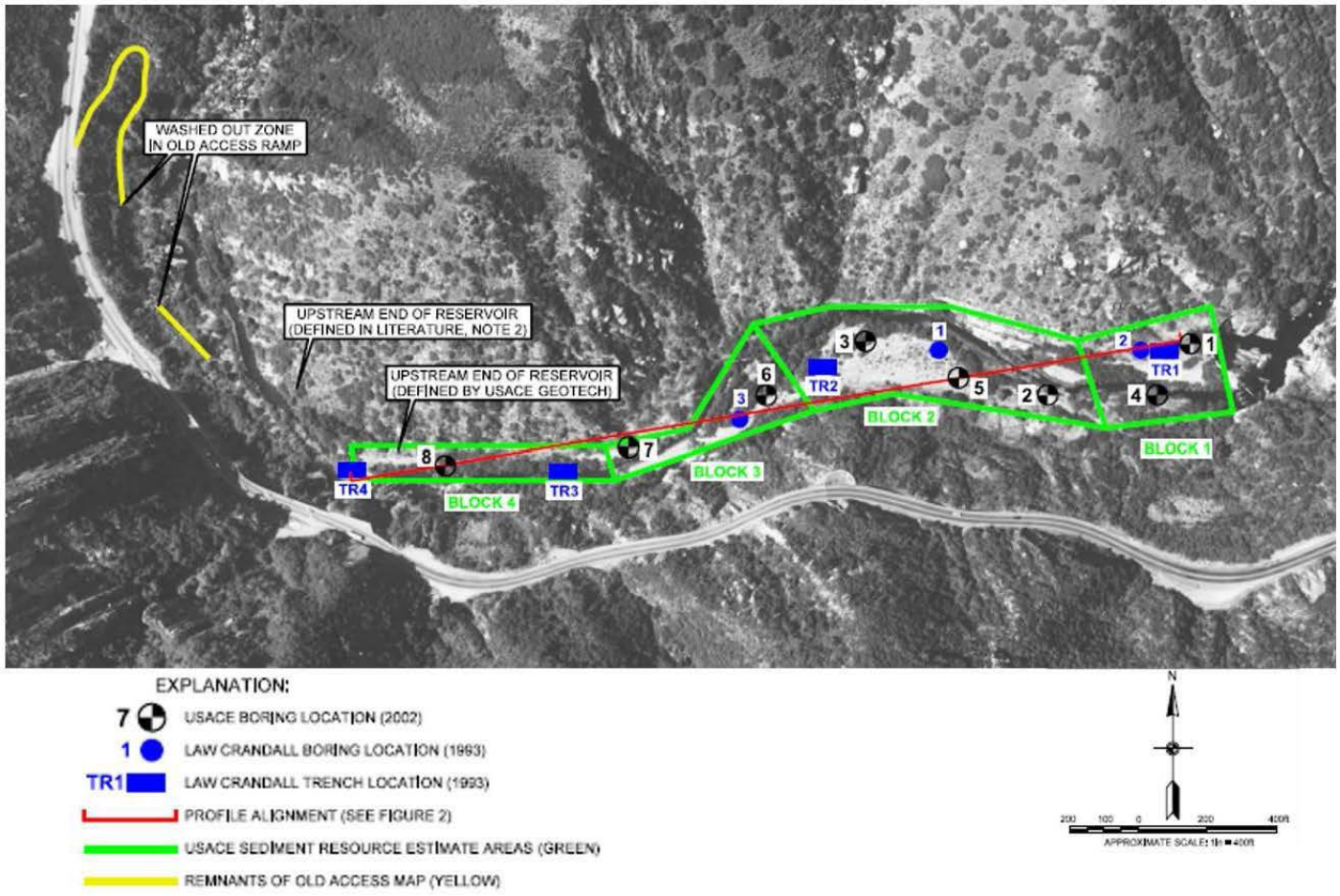


Figure 1. Extent of Rindge Dam Impounded Sediment

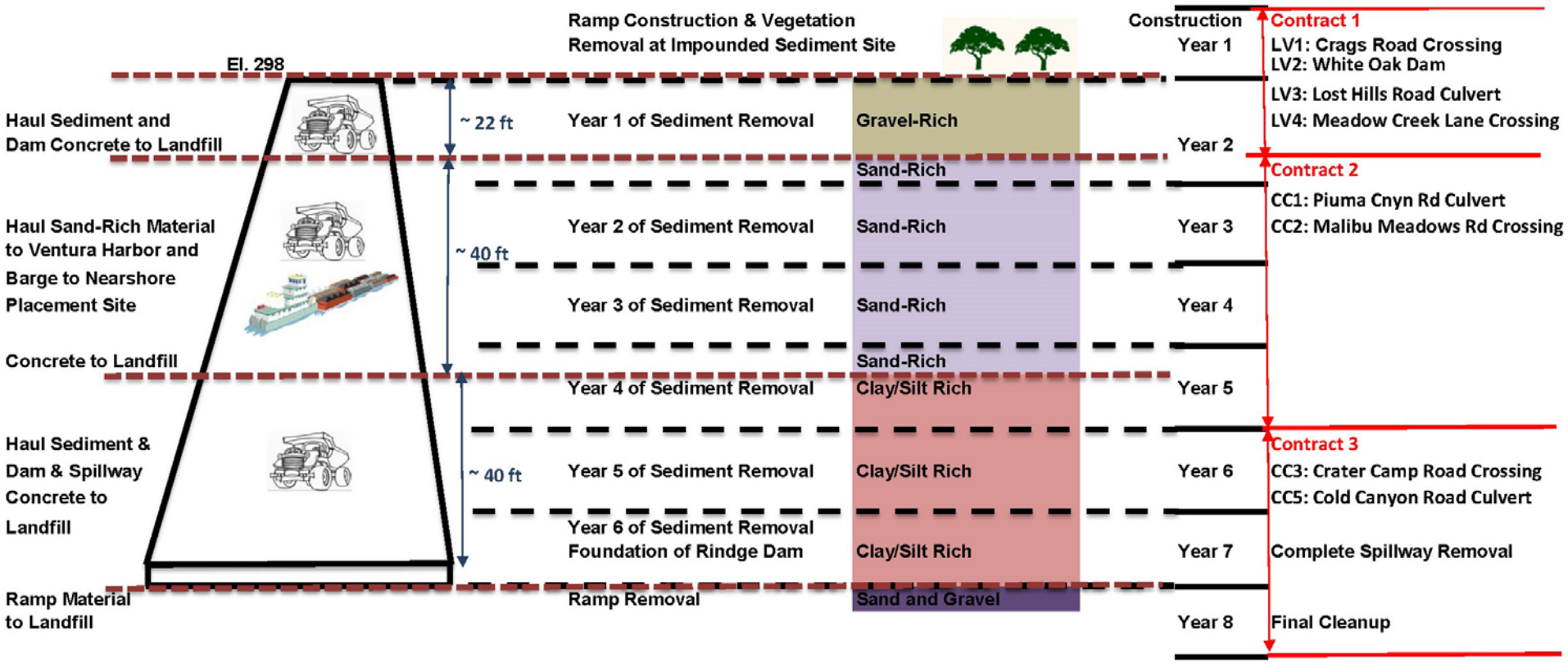


Figure 2. Rindge Dam Schematic Sediment Removal Plan

- If the surveys shows no nesting species present and no species of concern present, beginning 1 April, the existing ramp into the canyon bottom from Malibu Canyon highway will be repaired to allow vehicular access, for trucks, bulldozer, loader or gradall, and possibly an excavator or other equipment. If nesting species/species of concern are present, there will be a delay and continued monitoring will occur until such a time as the area is vacated by those species, or work areas are established outside a safe distance from any active nests.
- The impound site will be clear cut. The objective of the removal is two-fold: assure that nesting species do not re-inhabit the area during construction and make the area ready for sediment removal. Silt fence will be installed across the creek below the dam, and some additional removable, temporary barrier(s) will be installed downstream of the silt fence with the objective of keeping the steelhead away from the work zone and associated construction-related creek discharges. The objective is no turbidity but with the volumes of materials involved, some isolated and incidental increases in turbidity levels may occur by the discharge location. The silt fence and fish barrier will be examined and repaired or adjusted often throughout construction. The fence and barrier will be taken down at the close of each construction season and reconstructed at the start of each subsequent construction season. These barriers have not been designed at this stage of study.
- Regular surveys will be done throughout construction to assure that steelhead are not able to access and re-inhabited the work zone and associated creek discharge area.
- Using existing impounded sediment, the existing access ramp to the canyon bottom would be doubled in size to allow crane access, and access by larger trucks (20 cu yd). This ramp will allow only south-direction egress from the canyon bottom onto Malibu Canyon Highway. A second access ramp from Malibu Canyon Road to the canyon bottom will be built using existing impounded sediment, and aligned so as to allow north-bound egress from the canyon bottom onto Malibu Canyon Highway. The ramps will be maintained throughout the construction period. Figure 3 shows the approximate locations of the two ramps. Some ramp repairs are anticipated after storm seasons during construction.
- A cofferdam will be constructed at the upstream entrance of Malibu Creek into the impound area to capture and divert creek during construction. This also accounts for diversion of discharges from the Tapia Water Treatment Plant. Based on pre- and post-Tapia effluent release observations, dry season flow in Malibu Creek over the impoundment is about 90% Tapia Plant effluent.
- A collection and pump system will be included in the cofferdam area, as needed, along with a diversion pipeline to ‘highline’, or take inflowing creek water around the impoundment perimeter surface in pipes and discharge over the top of the remaining portions of the dam during construction. This also will serve to trap and divert dry-season rain event flows during construction, should any occur.
- Dewatering wells will be drilled vertically into the surface of the impoundment, with well packs designed to filter out all sediment and turbidity. The wells allow for pumping during construction to draw down the water level within the remainder of the impounded sediment during mining operations. Turbidity tests will be conducted on the combined well discharges and surface water diversion during construction.

- Any vegetative growth in the footprint of the impoundment surface and dam site work area will be removed during each construction year until the end of construction.
- At the end of construction, dewatering well pumps, diversion pipeline(s), and all associated equipment will be removed, including removal of the cofferdam.
- Construction work is assumed to be completed by October 15th of each construction season based on storm season safety concerns and species protection. This is a flashy system with work at the dam and impoundment located in a narrow gorge canyon. All material and equipment needs to be removed in advance of the first winter storm.
- The dewatering well operations in this first year of construction will serve as a test of the effectiveness of the system. Their design or output may be adjusted, as needed, in subsequent years.
- Impact on the steelhead habitat is not anticipated by these actions. No steelhead exist in the work zone.

Winterization includes protecting each dewatering well in-place prior to each storm season during construction; any remnants of the wells will be removed at the end of construction. All equipment will be removed from the site, including temporary coffer dams. The impounded sediment will be graded to an even slope to minimize flow obstructions and increased turbidity during winter storm flows.

Year 2 of construction is devoted to sediment removal of the upper layer of impounded gravel and sparse cobbles and boulders entirely, and a start on excavating the first few feet of the underlying sand-rich layer. Species monitoring, re-cutting of growth, dewatering, and other set up will be maintained/reinstalled as in year 1.

In approximately early February of each construction year after the beginning of mining operations, including Construction Year 2, the following tasks will be initiated:

- For each remaining construction year, a survey of the impoundment area will be conducted to check for any returning nesting species from that may have arrived since the prior year of construction (during the storm season). Any vegetation regrowth that impacts ongoing mining will be removed during the construction year.
- Beginning April 1st of each remaining construction year, any repairs needed on the existing two ramps into the canyon bottom from Malibu Canyon Road will be addressed using existing impounded sediment as fill.
- For each remaining construction year, cofferdam repairs or rebuilding will be conducted, as needed, at the upstream entrance by Malibu Creek into the impound area, including re-installing piping and pumps before re-initiating surface water diversions.
- Dewatering wells will be repaired/replaced to address any winter-storm-damaged well casings or sediment fouling, as needed.
- At the end of each construction year, the top of the remaining dam arch surface and excavated impounded sediment surface will be at exactly the same elevation at the end of construction year 1 (and all other years). This will prevent uncontrolled sediment discharges and trapping of new sediment during winter storms. The toe of haul ramps will have be extended to a deeper depth as work proceeds each year.
- Construction work in the creek is scheduled to be completed by October 15th each construction year.

Construction Year 2 tasks include:

- Beginning sediment removal with groups of excavators and haul trucks, hauling material to Calabasas landfill by truck until approximately -18 ft of depth is reached, after which the sand-rich layer underlying the gravel will be encountered.
- Excavated (mined) material will be trucked to Ventura Harbor, loaded onto an ocean barge, and barged back to the nearshore environment east of Surfrider Beach and placed in the nearshore environment.
- Sediment is expected to be excavated to 22-feet deep, below the original impounded surface, by the end of the construction year (see Figure 2). All sediment removal will include regular testing of materials for a suite of contaminants that will verify it they are suitable for placement in the ocean. This suite of tests, including chemical and bioassay testing, was run on exploration samples collected by the Corps in 2002, as was the upland disposal test suite (leachate testing). All of the impounded material tested clean for multiple uses. Confirmational sampling to verify continued lack of contamination will be done on an agreed upon schedule (one sample per a to-be-determined tonnage (or volume) removed, plus segregation and additional sampling should any areas of concern are exposed in the excavations).
- Install a crane on the dam and begin saw cutting and hauling blocks of the dam concrete via trucks to the Calabasas landfill.
- At the end of the construction season, the dewatering well pumps, highline water pipeline, and all equipment, including the crane, will be removed. This prevents risk of damage to equipment and of waterway fouling due to washed away equipment. Well casings will be cut down to an appropriate level to match the excavated sediment elevation.
- Adverse impacts on the steelhead habitat is not anticipated based on these actions above and the silt fence and fish barrier discussed under year 1. The dam is sawcut to prevent 'rockfall' of materials into the habitat. The sediment is excavated and trucked out of the canyon. The dam is left is a condition that will not allow spillage of impounded sediment over the dam from winter flows or new deposition (additional sediment starving of the system is avoided). Wells are designed and well water effluent is regularly tested to assure the work is not contributing to increased turbidity levels. Equipment and materials are secured at the end of the season (removed from the canyon) so they cannot be mobilized in a storm event.

Construction years 3, 4, 5, and 6 follow the same schedule and involve all the same tasks as year 2. The differences from year-to-year involve the sediment layer being excavated, its destination, and the amount of equipment needed to conduct the work. The number of groups of excavators and haul trucks operating simultaneously will have to be reduced as the work proceeds, because the surface of the remaining impound will be smaller each year. This is due to the narrow "V-shaped" canyon walls. The deeper the excavation, the less distance there is between each side of the canyon and the space in which work decreases. Construction years 2 and 3 will use 4 groups of excavators and loaders to maintain a suitable production rate. Sometime in Year 3, equipment will be reduced to three groups of excavators and loaders, and as the working space further diminished, they will be reduced to two groups.

Construction year 3 will involve excavation of the next 20 feet of sand-rich impoundment, and the next 20 feet of dam face (refer to the figure, above). The sand will be trucked to Ventura, then barged to the nearshore off Malibu.

Construction year 4 will be identical to construction year 3 (excavation of the next 20 feet of sand-rich impoundment and dam face).

Construction year 5, 6, and 7 will be similar but the work space will be diminishing and the production rate will slow. The schedule calls for a total of 40 ft of impoundment excavation and dam removal to occur, distributed through construction years 5, 6, and 7. Approximately 15 feet of sediment will be removed and a corresponding amount of dam face will be cut down in year 5. Subsequent years are expected to be slower and with less production due to shrinking work space. The sand-rich layer will be exhausted about ¼ of the way through construction year 5, after which the silt and clay rich material will be excavated and taken to the Calabasas landfill.

Construction year 7 is a critical year. The last of the dam and the last of the impounded material will be removed. A silt and clay rich coating is expected on the substrate and lower canyon walls. The plan for its remediation will require pumping and hauling to remove silt, clay and other suspended solids. The engineering plan will be formulated during the PED Phase of the Study. The plan is to leave in-place a small volume of the rocky, cobble and gravel rich pre-dam alluvium (approx. 10,000 cubic yards), based on core samples of all the 2002 borings in the impoundment. Construction year 7 will end with demolition and removal of the second haul ramp. The mixed sand and silt will be disposed of in the Calabasas landfill.

Construction year 8 will involve trimming the expanded original haul ramp back to the size it was prior to onset of construction, and removing the excess to the Calabasas landfill.

Prior to each subsequent year, the work area will be prepared including any repairs needed to access ramps and the removal of any vegetation that may have grown in the area over the previous winter.

Winterization includes protecting each dewatering well in-place prior to each storm season during construction; any remnants of the wells will be removed at the end of construction. All equipment will be removed from the site, including temporary coffer dams. The impounded sediment will be graded to an even slope to minimize flow obstructions and increased turbidity during winter storm flows. The Corps anticipates that significant BMPs will be required during construction to protect water quality from sediment and turbidity, and the Corps has committed to minimizing impacts to water resources to the maximum extent practicable. The precise details of all sediment, erosion, and turbidity controls will be determined in coordination with the Los Angeles Regional Water Quality Control Board (Board) during development of the project's 401 Water Quality Certification and SWPPP, based on final design details and site conditions that exist immediately prior to construction. While the Corps has committed to implementing all measures included in the SWPPP and in the 401 Water Quality Certification in order to minimize potential impacts to water resources, the Corps cannot provide details of these BMPs until all permits are received just prior to construction. As NMFS is aware, the Board will not issue the Corps a 401 Water Quality Certification prior to certification of the project's CEQA document. Certification cannot occur

until all environmental issues are resolved, including formal consultation. As such, it is not possible for the Corps to have the 401 WQC in hand and thus know the details of all water quality requirements prior to completing formal consultation.

All of the vegetation in the sediment impoundment area would be removed prior to the start of construction in Year 1. Vegetation on the side slope for the access ramps would also be removed. Construction will result in the removal of riparian and wetland vegetation on the surface of the impounded sediment behind the dam, and disturbance to hillside chaparral due to access ramp construction. The amount to be removed has not been quantified at this time and in any case is subject to change between now and the projected start of construction in 2025.

The method for removing the dam has not been established and will be determined by the Corps' construction contractor. Unless there is an overriding consideration to be accommodated by selection of a single removal method, the Corps cannot constrict firms competing on a construction contract by limiting how the work is to be done. Given that all southern California steelhead would be removed from the Main Dam Pool and the Undercut Boulder Pool and relocated downstream, this action precludes potential effects on steelhead due to noise during dam removal activities. For purposes of cost-estimation and scheduling the following method was assumed. Install a crane on the dam and begin saw cutting and hauling blocks of the dam via truck to the Calabasas landfill. The dam would be sawcut in a manner to prevent 'rockfall' of materials into the habitat.

Specific methods for removing the impounded sediments have not been established and will be determined by the Corps' construction contractor. Unless there is an overriding consideration to be accommodated by selection of a single removal method, the Corps cannot constrict firms competing on a construction contract by limiting how the work is to be done. Sediment would be removed in the dry, so that there will be no slurry. As previously stated, a temporary coffer dam would be used to bypass water around the construction area. BMP's will be put into place to manage sediments at the site, minimizing the introduction of sediments into Malibu Creek downstream of Rindge Dam. BMP's included in the SWPPP and in the 401 Water Quality Certification will be implemented as well.

There would be no temporary stockpiling of excavated sediments. Most materials will be removed and trucked directly to the Calabasas Landfill, while the nearshore-compatible sands would be removed and trucked directly to Ventura Harbor for loading onto barges.

A design depicting the sections of dam to be removed incrementally is shown on Figure 2. The spillway would be removed sometime during year 4.

Details regarding access ramps are shown on Figure 3. Placement of the staging area would be at the Sheriff's Overlook Site on Malibu Canyon Road overlooking Rindge Dam. Layout of the staging area would be determined by the Corps' contractor. Operations at the staging area would have no affect on steelhead. Exact placement of culverts for directing water around the construction area will vary by year and will be placed each year based on site conditions. Predicting exact routes is not possible at this time. Dewatering well water would be conveyed immediately downstream of the dam and released into Malibu Creek after BMPs ensure that

Figure 3. Access Ramp Locations

turbidity and other constituents are maintained at appropriate levels. No temporary bridges are included in this project.

The following measures will be implemented during construction to avoid and minimize potential effects to steelhead:

WR-1. Best Management Practices During Construction. Prior to construction a stormwater pollution prevention plan (SWPPP) will be prepared to address potential impacts to stormwater from construction equipment, construction crews, and construction practices. The SWPPP shall include best management practices to prevent accidental spills and other contamination of Malibu Creek, and shall include provisions for in-the-dry construction at the barrier sites, and regular monitoring of water quality, including turbidity, during construction and in the winter runoff season. The SWPPP will include a provision for adaptive measures to be taken in the event of excess contamination or turbidity.

BIO-1. Qualified biologist oversight. A qualified biologist will be responsible for overseeing compliance with protective measures for the biological resources during clearing and construction activities within designated areas.

BIO-2 Oil Spill Control. Oil-absorbing floating booms will be kept onsite and the contractor will respond to aquatic spills during construction.

BIO-3 Equipment Maintenance. Vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids. If such leaks or drips do occur, they will be cleaned up immediately. Equipment maintenance and/or repair will be confined to one location. Runoff in this area will be controlled to prevent contamination of soils and water.

BIO-8 SWPPP. A Storm Water Pollution Prevention Plan (SWPPP) will be required to prevent construction materials (fuels, oils, and lubricants) from spilling or otherwise entering the creek.

BIO-9 Employee Education Program. An employee education program will be developed. Each employee (including temporary, contractors, and subcontractors) will participate in a training/awareness program prior to working on the proposed project. Prior to the onset of construction activities, the Contractor will provide all personnel who will be present on work areas within or adjacent to the project area the following information:

- A detailed description of all listed species including color photographs;
- The protection listed species receive under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;
- The protective measures being implemented to conserve all listed species during construction activities associated with the proposed project;
- A point of contact if listed species are observed;
- Provisions of water quality Best Management Practices (BMP) and provisions of the SWPPP will be provided along with consequences for violations incurred by non-compliance with BMP and SWPPP provisions;
- Issue identification cards to shift supervisors with photos, descriptions, and actions to be taken upon sighting for the listed species that may be encountered during construction; and

- Discuss roles and responsibilities of Biologists hired to perform surveys and monitoring.

BIO-10 Fish Rescue and Relocation. A fish rescue and relocation plan will be developed prior to commencing work in areas where impacts to special status fish species may occur. The fish rescue and relocation will be conducted under the supervision of a qualified biologist and will entail measures to reduce effects to steelhead and other fish associated with in-water construction activities. Details are included in the original BA.

NOISE-4. Engine Covers and Mufflers. Heavy equipment should be equipped with manufacturer recommended mufflers and adequate engine covers. Engine covers should be kept shut during operation.

NOISE-6. Additional Noise Attenuation Techniques. The construction contractor will implement additional noise attenuation techniques such as sound blankets on noise generating equipment and the placement of temporary sound barriers between construction areas and sensitive receptors.

3. Dewatering and Fish Relocation

NMFS (2018) comments suggest a possible misunderstanding of the dewatering intent. There are no steelhead anywhere where dewatering will be done. The proposed action does not include any dewatering in habitats occupied by steelhead.

A temporary cofferdam about five feet in height will be constructed upstream of the southbound ramp and direct water into a series of culverts or pipe that would carry the water across the sediment impoundment area for release below the dam. Controls and best management practices (BMPs) will be in-place to reduce turbidity level of discharges to background levels immediately downstream of the dam.

The downstream limit of the yearly steelhead presence/absence surveys would extend down to the Start Pool to match the survey area conducted annually by the local sponsor to ensure comparability of results as well as to ensure that any steelhead present in Malibu Creek are detected.

Methods of recapture will depend on site conditions present at the time of capture, including number of steelhead present, water depth, and current. A fish rescue and relocation plan will be developed prior to commencing work during Pre-Construction, Engineering, and Design (PED) Phase in areas where impacts to special status fish species may occur. This plan will be provided to NMFS prior to implementation for review and comment. If electrofishing is proposed, it would be performed by a qualified biologist and conducted in accordance with *NMFS' Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act*, June 2000.

Habitat criteria for relocation sites include the following: temperature under 20 degrees Celcisus, dissolved oxygen greater than 5mg/l, consistent steady flow, with depth depending on life stage, at least one meter depth.

Details of the sediment dewatering are not available and will be based on site conditions encountered each year during construction. The locations of dewatering wells will be based on site conditions at the time of construction. Given the flashy nature of flows in Malibu Creek, the chances for substantial changes to the soil impoundment area, and the long lead time prior to construction, identifying specific sites for dewatering wells would be an exercise in futility, subject to change at the time of construction. Conditions will be in-place to reduce turbidity level of discharges to background levels immediately downstream of the dam so that there will be no affects to any steelhead present in or relocated to downstream pools.

The Corps anticipates that BMPs implemented during dewatering will address turbidity generated during active construction. The precise details of all sediment, erosion, and turbidity controls will be determined in coordination with the Board during development of the project's 401 Water Quality Certification and SWPPP, based on final design details and site conditions prepared immediately prior to construction. While the Corps has committed to implementing all measures included in the SWPPP and in the 401 Water Quality Certification in order to minimize potential impacts to water resources, the Corps cannot provide details of these BMPs until all permits are received just prior to construction. As such, it is not possible for the Corps to know the details of all water quality requirements prior to completing formal consultation. Conditions will be in-place to reduce turbidity level of discharges to background levels immediately downstream of the dam so that there will be no affects to any steelhead present in or relocated to downstream pools. Additional BMPs (i.e., water testing & treatment) during dewatering, will likely be required, but these will not be known until the contractor applies for a dewatering permit (Section 402 of CWA). This is not going to occur until after PED Phase, just prior to construction.

4. Sediment Removal

Information currently available regarding sediment removal can be found in Appendix B (Hydrology, Hydraulics and Sedimentation), Appendix D (Geotechnical Engineering), or Appendix I (Monitoring and Adaptive Management Plan) of the Draft IFR.

Details and results of the sediment transport model are included in Appendix B of the Draft IFR. The Corps has concluded that the no action conditions are similar to the selected project conditions in terms of sediment transport and that there would be no measurable effect on steelhead spawning, rearing, and migration habitats downstream as a result of the selected project.

Similarly, the sediment transport model in Appendix B shows similar effects to Malibu Lagoon from all alternatives, including the no action alternative. Implementation of the tentatively selected plan, therefore, would have no impact to surface hydrology, estuarine processes, or the quality and quantity of steelhead habitat. There would be no affect to steelhead rearing and migratory behavior in the lagoon.

All sediment removal of sands for nearshore placement will include regular testing of materials for a suite of contaminants as well as grain size analysis that will verify it they are suitable for placement in the ocean. The quality and quantity of impounded material being removed will be documented by the contractor for quality control and pay purposes. This will likely include periodic sampling of material for testing. Detailed methods will be determined in coordination

with the Board during development of the project's 401 Water Quality Certification and SWPPP. Confirmational sampling to verify continued lack of contamination will be done on an agreed upon schedule (one sample per so many tons removed plus segregation and additional sampling should any areas of staining or other visible or other areas of concern be exposed in the excavations)

Winterization includes protecting each dewatering well in-place prior to each storm season during construction; any remnants of the wells will be removed at the end of construction. All equipment will be removed from the site, including temporary coffer dams. The impounded sediment will be graded to an even slope to minimize flow obstructions and increased turbidity during winter storm flows. This prevents risk of damage to equipment and of waterway fouling due to washed away equipment, prevents sediment discharge (a risk if the top of remnant sediment was left at a higher elevation than elevation of the cut dam crest), and prevents trapping of new sediment (a risk if the top of remnant sediment was left at a lower elevation than elevation of the cut dam crest). This will essentially mimic the existing conditions at the site, but with a gradual lowering of the dam crest over time.

The Corps has prepared a Monitoring and Adaptive Management Plan (MAMP, Appendix I of the Draft IFR). The MAMP reflects a level of detail consistent with the feasibility study phase. The primary intent was to develop monitoring and adaptive management actions appropriate to assess and achieve the Study's restoration goals and objectives. The Corps and the non-Federal sponsor are responsible for carrying out the monitoring and adaptive management plan after construction of each project phase/component until ecological success criteria are met, but for no more than ten years. It is anticipated that the restored habitats can reasonably be expected to achieve success within five years for most or all project components

5. Post-Dam Removal

The information requested by NMFS is currently unavailable and will not be developed until the project enters the PED phase. Design documents, including the requested information will be provided to the NMFS at that time for their review.

Specific channel design objectives have not been identified. It could be left flat or channelized to direct Malibu Creek flow. In general, the post-construction channel bottom-width will closely match the pre-dam conditions of approximately 40 to 60 ft. The sediment impoundment area would be graded to reconnect the stream across the impoundment area and the former dam site creating a slope similar to pre-dam conditions. The impoundment surface is to be left as it was at the beginning of construction: a level surface that Malibu Creek can meander across. The plan is to leave in place the rocky, cobble and gravel rich pre-dam alluvium, which exists and was found in cores of all the Corps borings into the impoundment. That is the natural substrate for the steelhead.

Design details will be provided to NMFS when they are available, following completion of the PED Phase. Such details are not generally available at this stage of a feasibility study. Design details will be established during PED Phase in partnership with local sponsor expertise. We welcome NMFS's participation to establish the best design to facilitate steelhead migration past the old dam site and up Malibu, Cold, and Las Virgenes Creeks. Post-construction monitoring in

the MAMP will then ensure that goals are met, or that remedial actions are taken to allow the project to reach its goals of restored aquatic and terrestrial connectivity.

The Corps commits to providing all design plans to the NMFS at each design stage.

The MAMP in Appendix I of the Draft IFR will be further refined as design details are established and will include additional success criteria for stream and ecological conditions based on information presented in the BO. The Corps commits to sharing the results of monitoring reports and any recommendations for adaptive management (contingency actions) should those reports show that success criteria are not being met.

Implementation of the tentatively selected plan would have no impact to surface hydrology, estuarine processes, or the quality and quantity of steelhead habitat in Malibu Lagoon. There would be no affect to steelhead rearing and migratory behavior in the Lagoon during or following project construction. See earlier discussion on sediment modeling results for the Lagoon.

6. Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks

Modification/removal of upstream barriers would take place while Rindge Dam is still in the process of demolition. Therefore, steelhead would not be present and there would be no adverse effect on the species or on designated critical habitat from direct construction impacts. Indirect impacts from turbidity will be controlled by implementation of BMP's at each of the upstream barrier sites. Exact measures will be dependent on site constraints and the requirements of the 401 Water Quality Certification to be obtained during PED Phase.

Any effects of modification/removal of upstream barriers following removal of Rindge Dam would be beneficial due to the opening up of additional stream habitat to steelhead. All upstream barriers will have been removed for several years by the time that Rindge Dam is completely removed and the sediment impoundment area restored to pre-dam like conditions, including grading and planting. Access up through the upper reaches of the project area is open once removal of the dam is complete.

Time and resources are not available to conduct a fish-passage analysis for each of the upstream barriers. Individual fish barriers are small structures where the structure is the barrier to fish movement. Barrier removals are designed to return the stream to a natural condition that would have existed prior to construction of the barrier. Records indicate that steelhead were able to migrate up these streams in the past, prior to the installation of Rindge Dam. All designs are intended to be self-sustaining. Final plans for all barrier removal efforts will be shared with NMFS after completion of PED Phase for review and comment.

The Corps anticipates that BMPs implemented during modification/removal of upstream barriers will address turbidity. The precise details of all sediment, erosion, and turbidity controls will be determined in coordination with the Los Angeles Regional Water Quality Control Board (Board) during development of the project's 401 Water Quality Certification and SWPPP, based on final design details and site conditions prepared immediately prior to construction. While the Corps has committed to implementing all measures included in the SWPPP and in the 401 Water Quality

Certification in order to minimize potential impacts to water resources, the Corps cannot provide details of these BMPs until all permits are received just prior to construction. As such, it is not possible for the Corps to know the details of all water quality requirements prior to completing formal consultation. Conditions will be in-place to reduce turbidity level of discharges to background levels immediately downstream of the barriers so that there will be no affects to any steelhead present below the dam.

7. References Identified in the BA

The first, second, and fourth references listed are already in the possession of the NMFS. Multiple copies of the Draft IFR, including all appendices, were provided and were the basis for two sets of comments received by the Corps from NMFS. Additional copies can be made available, if needed. The third reference is attached.

8. Clarification of Existing Information

There are eight upstream barriers to be removed. Figure 3 in the BA, shows nine, one has been removed by another group and is no longer part of the project.

The following statement: "Habitat Evaluation outputs remain the same as those calculated for the NER Plan, but overall costs increase (pg. 10)." Was meant to express the finding that the NER and LPP plans have the same outputs from the Habitat Evaluation. The main difference between the two is the status of the spillway. Removing or allowing the spillway to remain does not have any differences in habitat values downstream of the dam as measured by the Habitat Evaluation process. Hence, the two alternatives have the same habitat benefits over the life of the project.

A qualified biologist to oversee fish rescue and relocation will be permitted to handle southern California steelhead, as required by the ESA, section 10(a)(1)(b).

The BA states that "no changes are expected to the downstream reaches during winter storms that occur during years that construction takes place (pg. 18)." On page 19, the BA states that minor volumes of sediment may also enter the creek and could affect steelhead and stream habitat downstream. The first statement refers to overall effects during winter storms. The creek would have the same water and sediment loading with the project as without, resulting in no changes. The second statement refers to “minor amounts of sediment may remain at the end of each construction year, including the final construction period that could be flushed down the creek.”. These sediments would flush with the first rain event of each year and would not have impacts when averaged over the entire rainy season.

Details regarding the removal and trimming of riparian vegetation under the proposed action and revegetation plan are not available and will not be available until the PED Phase of the project. The Corps will share those plans with the NMFS at the time they are prepared.

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

February 21, 2018

Eduardo T. De Mesa
U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

Dear Mr. De Mesa:

As promised during the National Marine Fisheries Service's meeting with the Army Corps of Engineers (Corps) on February 15, 2018, the enclosure to this letter identifies key concerns regarding the potential effects to endangered steelhead (*Oncorhynchus mykiss*) and designated critical habitat for this species, and the information needed to begin the formal consultation for the Malibu Creek Ecosystem Restoration Project, in accordance with Section 7 of the U.S. Endangered Species Act.

While awaiting information that is responsive to the enclosure, we will continue to pursue the informal consultation with the Corps based on the information contained in the biological assessment and attached to, or otherwise provided by, the Corps' February 8, 2018 letter.

NMFS looks forward to collaborating further with the Corps on this Project. Please contact Jay Ogawa at (562) 980-4061 or via email at jay.ogawa@noaa.gov if you have a question concerning this letter, or if you require additional information.

Sincerely,

Anthony P. Spina
Chief, Southern California Branch
California Coastal Office

Enclosure

cc: Suzanne Goode, California State Parks
Chris Delith, USFWS, Ventura
Mary Larson, CDFW, Los Alamitos
Administrative file: 151422WCR2018CC00008

ENCLOSURE

NOAA's NATIONAL MARINE FISHERIES SERVICE'S REQUEST FOR INFORMATION NEEDED TO INITIATE FORMAL CONSULTATION ON THE MALIBU CREEK ECOSYSTEM RESTORATION PROJECT

FEBRUARY 21, 2018

KEY SUBSTANTIVE CONCERNS

1. Short-term adverse effects have the potential to be widespread and ecologically significant, and extend over several years of sediment removal activities. The source of the short-term adverse effects primarily involves the exposed sediment through the impounded area upstream of the steelhead-bearing reach, which will remain exposed throughout the several-year construction period. The Corps has not provided a meaningful effects analysis to corroborate their initial conclusions, particularly regarding effects owing to potential increases in wet-season turbidity concentrations and sedimentation of steelhead critical habitat downstream of Rindge Dam.

2. Short-term adverse effects that result during construction activities each season are of concern. The existing population of steelhead, and related production of individuals, in Malibu Creek is confined to the 3-mile reach downstream of Rindge Dam. This specific reach is susceptible to offsite effects owing to increases in sedimentation and turbidity concentrations. Although the Corps proposes measures (e.g., dewatering wells, silt fence, fish barrier) to avoid and/or minimize potential turbidity and sedimentation downstream of Rindge Dam, these specific measures do not address the potential for wet season creek discharge to overcome the volume of the impounded area, causing a spill over the dam crest that transports sediment-laden water downstream into reaches harboring steelhead and designated critical habitat for this species. An analysis of this impact and related anticipated effects on steelhead and critical habitat should be provided.

3. The Corps should provide a clear understanding of the anticipated or target post-dam channel characteristics and condition that are to exist following completion of the sediment and dam-removal phases. At this time, the Corps' approach to channel restoration (i.e., stream simulation) and related basis of design report has not been provided. As a result, NMFS is unable to assess potential long-term effects to steelhead and aquatic habitat for this species following the removal of Rindge Dam.

4. The proposed action lacks the sorts of measures that would be expected to minimize the short-term adverse effects on steelhead and designated critical habitat for this species. As a result, the short-term adverse effects, particularly the sedimentation of steelhead habitat downstream of the dam, are expected to remain unabated for the duration of the construction period.

INFORMATION NEEDED TO BEGIN FORMAL CONSULTATION

Sediment Removal

1. Preliminary sediment transport modeling results generally describe impacts to steelhead critical habitat downstream of the dam following 5 consecutive construction seasons (Corps 2017[1], pg. B-109), when under the proposed action these effects would actually be observed over 8 seasons. An updated analysis that clearly translates sediment transport modeling results to effects on steelhead critical habitat downstream should be provided. To this end, provide to NMFS an updated sediment-transport model that explicitly evaluates the consequences of removing vegetation and exposing soil and sediment over extensive areas, and maintaining such conditions for several years, on the characteristics and condition of instream habitat, and steelhead, downstream of the dam. Of particular concern is the influence of rainfall and elevated creek discharge that exceeds impounded volume, resulting in spill downstream. For each construction season, the evaluation should describe in detail the degree to which transported sediment would affect steelhead spawning, rearing, and migration habitat downstream of the dam under various hydrological conditions (e.g., very wet, wet, normal, below normal, dry, extremely dry).

2. Based on the updated sediment transport model described above, provide an evaluation of potential effects on Malibu Lagoon. Preliminary sediment transport model results indicate deposition of up to 3.25-feet within the lagoon (Corps 2017, pg. B-109). The updated evaluation should clearly describe the anticipated changes to surface hydrology (e.g., frequency and timing of lagoon breaching) and estuarine processes (e.g., berm dynamics, circulation, lagoon volume, depth profiles, nutrient loading), that result from the dam removal activities each season and therefore impact the quality and quantity of steelhead habitat. Specifically describe the degree and extent to which the project is likely to affect steelhead rearing and migratory behavior in the lagoon.

3. Based on the updated sediment transport model and anticipated degree of sedimentation of steelhead habitat downstream of Rindge Dam, provide detailed descriptions of the winterization measures to be implemented following each construction season. Include a discussion about how the proposed measures are anticipated to minimize downstream sedimentation (i.e., silt and sand) effects to steelhead and designated critical habitat for this species during winter and spring following each construction season.

4. Because sediment-transport conditions described in the biological assessment (pg. 19) and preliminary sediment transport model results (pg. B-109) suggest that sedimentation (i.e., settling of sand and smaller particles on the channel bed, filling interstitial spaces between coarse substrate) within the downstream reaches could affect spawning and rearing habitat over consecutive seasons, the Corps should update the existing Monitoring

[1] U.S. Army Corps of Engineers (Corps). 2017. Hydrology, Hydraulics and Sedimentation Report. January 2017

and Adaptive Management Plan (MAMP). The Corps indicates the MAMP solely addresses the post-dam removal phase and reflects a level of detail consistent with the feasibility study (Corps 2018,[2] pg. 13). Therefore, the MAMP should be updated to address sedimentation effects downstream of the dam following each of the 7-years of proposed sediment removal activities. The MAMP should be capable of detecting and then timely reconciling adverse effects to ensure that suitable spawning and rearing conditions are maintained through the downstream reach over the period of construction.

Removal of Rindge Dam

1. The information provided to date does not clearly define the proposed instream work window (Corps 2018, pg. 1), but should because a defined work window is needed to develop an understanding of potential effects on steelhead (i.e., adult and/or juvenile) during each construction season. To avoid and/or minimize potential effects to steelhead downstream of Rindge Dam, NMFS recommends instream work be confined between June 1 and October 31.

2. The Corps assumes that dam removal will occur by the use of a crane and saw cutting. Because other methods of removal could be implemented, a description of all potential methods for demolishing the dam and spillway each construction season should be provided to NMFS. If hydraulic hammers or blasting are to be used, provide an acoustic assessment of potential effects on steelhead. The assessment should describe the methods for evaluating potential effects on steelhead due to noise generated from hydraulic hammering and blasting, and results of the acoustic evaluation. Additionally, include a discussion of any sound-attenuation measures that would be incorporated into the action to minimize effects on steelhead.

3. The Corps indicates the dam will be left in a condition that will not allow spillage of impounded sediment over the dam from winter flows or new deposition (Corps 2018, pg.6). Provide the analysis that explicitly evaluates the rate at which the dam and spillway are incrementally removed and impounded sediments could be transported downstream during each wet season following construction. The evaluation should consider expected river discharges (based on historical gauge data) during the wet season in combination with the capacity of the remaining reservoir for each year of the project.

4. A design drawing depicting the sections of dam and spillway to be removed incrementally over the 8 years of construction. The schematic provided by the Corps does not clearly identify the dam crest or spillway elevations following each season of construction (Corps 2018, Fig. 2). Provide design plans or drawing that clearly depicts existing dam crest and spillway elevations, and subsequent dam crest and spillway elevations following removal of sediment each season.

[2] U.S. Army Corps of Engineers (Corps). 2018. Letter and attachment to NOAA's National Marine Fisheries Service (NMFS). February 8, 2018. Responses to NMFS' January 23, 2017, letter.

5. Because the specific methods for removing impounded sediment have not been determined (Corps 2018, pg. 8), a description of all potential methods to mechanically remove the impounded sediments each season should be provided. This description should include a discussion about how the finer material (i.e., sand and silt) would be transported out of the impounded area. Lastly, measures should be incorporated into the action for the purposes of minimizing (1) the likelihood of an accidental release of sediment-water slurry to the creek, and (2) impacts to water quality if a spill were to occur.

6. Provide to NMFS the list of measures for avoiding and minimizing potential effects to steelhead and critical habitat during dam and spillway demolition.

Dewatering and Fish Relocation

1. The methods of dam and spillway demolition have not been finalized (Corps 2018, pg. 8) and potential methods may require dewatering of steelhead critical habitat downstream of the dam. Provide a description of the area below the dam within critical habitat where dewatering of the work area could occur. Clearly delineate the upstream and downstream limits of the water diversion and the length of stream to be dewatered.

2. The Corps proposes to divert streamflow approximately 2,400-linear feet around the impounded area of sediment where it will then be discharged to an area below the dam. Provide measures that will ensure the diverted stream water will remain at a temperature suitable for steelhead.

3. Details concerning the proposed use of dewatering wells remains undefined (Corps 2018, pg. 12), yet the Corps states that there will be no turbidity related effects to steelhead below the dam during construction (Corps 2018, pg. 12). Since details concerning sediment dewatering have not been determined, the Corps may wish to examine other dam removal projects where dewatering wells were used and their effects on turbidity and sedimentation were monitored. The Corps could use this information to develop a meaningful effects analysis that illustrates the consequences of sediment dewatering on steelhead and critical habitat downstream of Rindge Dam. The analysis should describe the anticipated turbidity and sediment levels of water releases into the creek below the dam and potential effects to steelhead and critical habitat for this species. If the Corps cannot ensure the quality of the pumped water is consistent with needs of steelhead in the creek, a section within the MAMP should be developed to identify and rectify this specific issue.

4. The Corps anticipates that best management practices (BMPs) implemented during dewatering will address turbidity generated during construction, however the details of those BMPs have not been identified (Corps 2018, pg. 12). Based on the conceptual

analysis described above, the Corps should provide measures to avoid and/or minimize turbidity and sedimentation effects downstream of the dam during sediment removal activities each season.

5. The Corps defined the habitat criteria to be met for steelhead relocation sites (Corps 2018, pg.11) yet monitoring of those sites to ensure the needs of steelhead are met throughout the duration of each construction season is not proposed. If it is uncertain that criteria can be met throughout construction, the Corps should develop a plan to monitor relocation sites and then effect a remedy in the event inhospitable conditions arise.

Post-Dam Removal

1. Provide to NMFS clear identification of the stream channel design objectives to be met. These objectives should be described in terms of geomorphic, hydraulic, and biological function.

2. Provide to NMFS the hydrologic and hydraulic analyses, geomorphic assessment, and sediment-transport model used to establish design criteria for the restored channel. The design criteria should at a minimum consider proposed stream channel geomorphology, sediment transport, fish passage, and hydraulic performance. Provide a detailed discussion about how the analyses were utilized to establish the design criteria.

3. Provide to NMFS design details regarding the proposed final channel configuration, including the length of stream channel to be excavated, alignment of the low-flow channel, upstream and downstream control points, and proposed channel slope. Describe any geotechnical investigations used to characterize the streambed surface to remain after the impounded sediment is removed. Additionally, provide plan sheets or conceptual drawings that clearly depict the aforementioned features of the restored stream channel.

4. A longitudinal profile of the proposed project-thalweg elevation compared to the existing thalweg should be provided to NMFS. The profile should extend 10 channel widths upstream and downstream of the project reach and clearly depict significant channel features such as the upstream and downstream control points.

5. Channel cross-sections, depths, and widths for the section of excavated stream channel to be restored should be provided to NMFS.

6. Submit to NMFS a detailed evaluation of how the restored channel will promote the development of steelhead habitat including the maintenance of suitable passage and rearing conditions over the life of the project. The evaluation should include: (1) how the proposed streambed elevations, channel slope, and, upstream and downstream control points were determined, (2) a description of the stability of the restored channel and any self-sustaining streambed features, (3) how the restored channel will provide hydraulic

conditions similar to those naturally found in Malibu Creek (outside the influence of Rindge Dam) and, (4) a description of the anticipated changes to streambed elevation owing to the dam removal and how those changes are expected to alter the distribution of steelhead habitat within and downstream of the dam site over time. Finally, summarize all anticipated changes to stream morphology and fish-passage conditions, including the extent, nature, and duration of these changes, owing to the restored stream channel.

7. If the restored channel cannot ensure that suitable fish-passage conditions will be attained over time, describe the implications for passage of adult and juvenile steelhead, and propose measures to minimize the adverse effects.

8. Provide to NMFS a detailed description of the related possible effects on steelhead passage and spawning and rearing conditions if aggradation or degradation of the restored streambed is expected. Depending on the type and severity of these effects, the Corps may wish to include in their revised or supplemental BA a proposed plan that is intended to offset the potential effects of channel aggradation or degradation on steelhead passage and spawning and rearing conditions.

9. Submit to NMFS an updated MAMP that describes; (1) the methods for assessing sustained function of the restored channel, (2) the requirement to submit the reports to NMFS that provide the results of monitoring and any evidence of successful steelhead passage (i.e., observed adult steelhead migrating through the dam site, redds upstream of dam site), and (3) recommendations and the schedule for future proposed maintenance to ensure long term function.

10. The Corps states that the tentatively selected plan would have no impact to steelhead habitat in Malibu Lagoon (Corps 2018, pg. 14), however no analysis is provided that reliably supports this determination. Therefore, a detailed description of the anticipated changes to estuarine processes (e.g., circulation, habitat types, berm dynamics, depth profiles, nutrient loading) as a result of the restored channel should be provided to NMFS. The Corps should describe the degree and extent to which the final design may affect steelhead rearing and migratory behavior within the lagoon, during the post-removal phase.

11. Details regarding the removal and trimming of riparian vegetation under the proposed action and revegetation plan should be provided to NMFS. Include a complete set of design drawings with sufficient detail to indicate existing riparian trees to be removed or trimmed for all construction locations under the proposed action. Identify the ratio that riparian trees (and vegetation) will be replanted to mitigate loss of trees or enhance temporarily disturbed areas. A description of the irrigation system that will be installed to provide water to newly planted vegetation for establishment periods should be submitted to NMFS. Finally, include a description of the revegetation-monitoring plan to be implemented following project completion.

Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks

1. Although, the Corps states that any effects of modification/removal of upstream barriers following removal of Rindge Dam would be beneficial (Corps 2018, pg. 14), the approach to restoring passage at the barrier sites has not been described. The Corps should provide to NMFS the basis of design report and construction details for each individual fish-passage project. The report should include applicable items described in the *Post-Dam Removal* section of these comments (Number 1-9).

2. Hydraulic design projects should meet NMFS[3] and CDFW[4] fish–passage criteria. Provide a fish-passage analysis that evaluates and justifies the appropriateness of the selected high and low passage design flows (adult and juvenile) for the proposed design, and details how the proposed design will function and influence migration and rearing habitat during winter and summer flows, based on the findings of the hydraulics analysis. Concerning the evaluation of the high adult design flow, describe how the design flow was calculated and the active channel was defined. The evaluation should include analysis for the adult and juvenile design flows through the project area, including 10 channel lengths upstream and downstream of the existing impediment. Based on the evaluation, a detailed justification describing the suitability of the selected high passage-design flow for adult steelhead should be provided. The analysis should indicate whether the proposed design will be self-sustaining and reliable.

References. – NMFS requests the Corps provide the following documents. Please provide NMFS an additional copy of the Draft Integrated Feasibility Report. The fifth reference was not included with the Corps' February 8, 2018, letter and attachment. The preferred format is electronic (i.e., CD or DVD).

1. Malibu Creek Ecosystem Restoration Project Draft Integrated Report (USACE 2017)
2. Malibu Creek Environmental Restoration Project Habitat Evaluation (Appendix J to USACE 2017)
3. Monitoring and Adaptive Management Plan (Appendix I to USACE 2017)
4. Geotechnical Engineering (Appendix D to USACE 2017)
5. Barrier and Habitat Assessment of Upstream Tributaries to Malibu Creek, Prepared by CDM, Inc. September 2008.
6. Draft Fish and Wildlife Coordination Act Report, Prepared by US Fish and Wildlife Service. May 2013.

[3] NMFS. 2011. Anadromous Salmonid Passage Facility Design. National Marine Fisheries Service-Northwest Region. July 2011

[4] CDFG. 2009. California Salmonid Stream Habitat Restoration Manual: Part XII: Fish Passage Design and Implementation. California Department of Fish and Game. April 2009.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

March 2, 2018

Planning Division

Mr. Anthony Spina
Chief, Southern California Branch
California Coastal Office
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4221

Dear Mr. Spina:

This letter is in response to your February 21, 2018, letter providing additional information to respond to NMFS' "key concerns regarding the potential effects to endangered steelhead (*Oncorhynchus mykiss*) and designated critical habitat for this species, and the information needed to begin the formal consultation for the Malibu Creek Ecosystem Restoration Project, in accordance with Section 7 of the U.S. Endangered Species Act." These actions are the outcome of the National Marine Fisheries Service (NMFS) and U.S. Army Corps of Engineers (USACE) meeting about the Malibu Creek Ecosystem Restoration Project, held on February 15, 2018.

USACE continues to disagree with the position of the NMFS that formal consultation for this project has not begun for the reasons discussed in our February 8, 2018, letter. We consider that formal consultation began on November 13, 2017, the date of our written request to initiate formal consultation, and concluded on February 11, 2018, ninety days after initiation of formal consultation. The NMFS is required by regulation (50 CFR 402.14(e)) to deliver to the Corps a Biological Opinion (BO) within 45 days of concluding consultation, on or about March 28, 2018.

It is critical for USACE to obtain a draft and final BO from NMFS in short order. The enclosed information is similar to what USACE already provided to NMFS, and represents the best available information for analysis of potential effects to steelhead and designated critical habitat below Rindge Dam at this feasibility study stage. The level of detail of analysis is commensurate with information developed by USACE for all feasibility studies, and given the long history of this study, it contains more detail than what would typically be available for a new feasibility conducted under the SMART planning process. More detailed information will be developed on this Project during the Pre-Construction, Engineering and Design (PED) phase.

In order to complete the feasibility study with remaining funds, and in consideration of schedule commitments provided to the USACE Vertical Team, USACE must receive a draft BO no later than March 30, 2018, and a final BO no later than April 30, 2018. Any further delays may result in termination of the study due to lack of funds and missed milestone dates for the final report and associated processing at USACE Headquarters. Federal funding will be available again for the PED phase, but not for the feasibility phase.

We have provided the best available information responding to your information request in the spirit of moving ahead with this consultation, even though we consider it to be completed. Please let us know if you have any questions on the attached responses.

A copy of this letter is being furnished to Dr. Josephine Axt, Chief of Planning and Policy Division, South Pacific Division, U.S. Army Corps of Engineers, Mr. Chris Yates, Assistant Regional Administrator, Protected Resources Division, National Marine Fisheries Service and Ms. Alecia Van Atta, Assistant Regional Administrator, California Coastal Office, National Marine Fisheries Service.

Thank you for your attention to this matter. If you have any questions regarding the above, please contact Mr. Larry Smith, Project Biologist, at (213) 452-3846 or by email at lawrence.j.smith@usace.army.mil.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

Enclosure

1. Introduction

This document has been prepared to provide additional information to the National Marine Fisheries Service (NMFS) as requested in their letter dated February 21, 2018. This document is organized to respond in the areas requested in the Information Needed attachment to the NMFS' letter; Key Substantive Concerns are noted and illustrate the basis for the subsequent specific requests for additional information.

Sediment Removal

1. At this time, USACE has provided the best available feasibility-level information to NMFS on impacts to steelhead critical habitat downstream of Rindge Dam. Impacts to steelhead critical habitat downstream of Rindge Dam would be very similar for the modeled 5-year construction timeframe and updated 8-year construction timeframe that was not modeled for the Feasibility Study. The only relevant difference between what was modeled and what is now assumed is that the Project is estimated to take more time than originally modeled. It is a significant effort to recalibrate and rerun the suite of models to align with current assumptions on construction sequencing and overall duration. During Pre-Construction, Engineering and Design (PED), the models will be rerun to investigate specific annual impacts to downstream critical habitat with more refined inputs from other work conducted during PED that align with the updated assumptions for the Project, taking into account more detailed investigations of yearly activities and overall construction sequencing.

The current feasibility-level of design assumes that lowering of the dam arch will coincide with mining of the impounded sediment. During interim construction years, the remaining height of the concrete arch will be at the same elevation of the remaining impounded sediment by October of each year, prior to winter storm seasons. This approach ensures that additional sediment transported by storms from the watershed is not trapped behind a higher concrete dam arch, and instead is able to flow over unimpeded over the remaining dam arch. Keeping the dam arch and sediment heights the same at the end of each construction year also ensure that a dynamic load is not introduced to the remaining structure, and there is no pooling of water in the remaining impounded sediment footprint after storms. This mimics the existing condition. The dam will continue to function as it currently does, passing turbid creek water over the dam during storms. The only difference will be that the impoundment area will have been stripped of its vegetative cover. Given the size of the watershed, we do not consider that this relatively small area would contribute measurably to turbidity as compared to the No Action alternative under the range of hydrologic conditions (e.g., very wet, wet, normal, below normal, dry, extremely dry).

2. The feasibility-level sediment transport modeling for the Project show a slight increase in sediment deposition in Malibu Lagoon when compared to the No Action Alternative. After 10 years, in Malibu Lagoon, stream deposition would average 2.1 to 3.0 feet, in comparison to 2.1 to 3.0 feet in the without-Project condition. Sediment will continue to be deposited at the mouth of the creek and within the lagoon, as it would under the No Action scenario. No additional sediment removal, beyond what is required in the No Action scenario, is anticipated. However, maintenance requirements will be further evaluated during PED. After 20 years, in Malibu Lagoon, stream deposition would average 2.1 to 2.9 feet, in comparison to 2.1 to 3.0 feet in the without-Project

condition. The amounts of sediment flushed downstream are expected to be minor and within the normal range of existing conditions. Construction will not be conducted during the winter rainy season, thus not affecting the species or its critical habitat during times when the lagoon is more likely to be open allowing access to and from the ocean. The Project is not expected to affect southern California steelhead rearing and/or migratory behavior in the lagoon.

3. In regards to current feasibility-level sediment transport model outputs for construction seasons, USACE is providing the following summary on model outputs along fourteen pools located below Rindge Dam, comparing the results of the Project with the No Action conditions. The response starts from the pool just below the dam and works its way downstream towards the lagoon and looks only at the 5-year period modelled for construction. Refer to the attached table for data taken from the sediment modelling results for the pools described for the No Action and Project scenarios for years 1, 2, 3, 4, & 5. Winterization includes protecting each dewatering well in-place prior to each storm season during construction; any remnants of the wells will be removed at the end of construction. All equipment will be removed from the site, including temporary coffer dams. The impounded sediment will be graded to an even slope to minimize flow obstructions and increased turbidity during winter storm flows.

Main Dam Pool. This pool shows significant deposition for the No Action alternative for each of the 5 years of record, ranging from 1.1 to 5.6 feet. The pool shows moderate amounts of deposition during each of the 5 years of construction with the largest deposition in years 1 & 5. This pool is predominantly sand with an average depth of approximately 8.2 feet. Southern California steelhead will be removed from this pool prior to each construction year, so there would be no effect on the species. Given the current depth and bottom type, the lesser amount of deposition for the Project as compared to the No Action alternative would be considered to be a beneficial effect on the critical habitat.

Willow Overhang Pool. This pool shows minor deposition for the No Action alternative for each of the 5 years of record, ranging from 0 to 1.9 feet. This pool shows minor scour (0 to -0.4 feet) for years 1, 2, & 3 with minor deposition in years 4 & 5 (0.8 to 1.1 feet). The pool is predominantly cobble with an average depth of approximately 2.2 feet. The scour in years 1, 2, & 3 are considered to be moderate improvements, although much less than the No Action alternative. The minor amounts of deposition in years 4 & 5 are considered to have minor adverse impacts to the habitat, but none to the species. In year 10, following completion of construction, scour returns the pool to existing depths.

Pipe Pool. This pool shows moderate scour under the No Action alternative for the 5 year period of record. The pool shows a similar, but larger, scour (-2.9 feet) for the Project and then no change. This pool is predominantly sand with an average depth of approximately 2.6 feet. The scour should result in deepening of the pool and indicates that the Project would have beneficial effects on both the species and the habitat in this pool during construction.

West Bedrock Corner Pool. This pool shows an initial deposition in years 1-3 (0 to 2.7 feet) and moderate scour in years 4 & 5 (-2.8 feet) under the No Action alternative. The pool shows no change for years 1 & 3, slight deposition in year 2 (1.2 feet), and moderate scour for years 4 & 5 (-2.8 feet). This pool is predominantly sand with an average depth of approximately 2.0 feet.

Deposition in year 2 will result in a shallower pool, but scour in the following years would deepen it, enhancing it in terms of habitat quality. The Project should not affect the species in this pool during construction.

Big Wide Pool. This pool shows moderate deposition for the No Action alternative, increasing over the 5 years of record from 0.4 to 3.4 feet. The pool shows moderate deposition for the 5 years of construction ranging from 0.2 to 3.6 feet. This pool is predominantly gravel with an average depth of approximately 3.2 feet. After the completion of construction the pool scours slightly. The amount of deposition equivalent for both scenarios and is not considered to affect the species or the habitat.

Pool Above Tufa Pool. This pool shows minor scour for the No Action alternative, increasing over the 5 years of record from -0.9 to -2.8 feet. This pool shows moderate scour for the Project, increasing during year 2 from -1.1 to -2.8 feet then remaining level. This pool is predominantly boulders with an average depth of approximately 2.0 feet. The Project would have no effect on either the species or the habitat.

Tufa Rock Pool. This pool shows moderate scour for the No Action alternative, increasing during year 2 from -0.9 to -2.8 feet remaining level over the remaining 5 years of record. This pool shows a similar pattern of moderate scour for the Project, increasing during year 2 from -1.1 to -2.8 feet remaining level increasing over the remainder of the 5 years of construction. This pool is predominantly gravel with an average depth of approximately 1.6 feet. The Project would have no effect on either the species or the habitat.

First Bend Pool. This pool shows moderate amounts of scour for the No Action alternative of the 5 years of record ranging from -0.2 to -1.9 feet. The pool shows moderate amounts of scour in a similar pattern, but slightly greater for the Project over the 5 year construction period from -0.3 to -2.6 feet. This pool is predominantly sand with an average depth of approximately 3.3 feet. The Project should results in minor deepening of the pool, considered to be beneficial to the habitat and to the species.

Grimmer Pool. This pool shows moderate amounts of deposition over the 5 year period of record ranging from 0 to 1.3 feet. The pool shows minor deposition over the 5 year construction period ranging from 0 to 1.1 feet. This pool is predominantly sand with an average depth of approximately 5.9 feet. The slightly reduced deposition of the Project over the No Action alternative is considered to be beneficial to the habitat and to the species.

Lunch Pool. This pool shows minor scour over the 5 year period of record ranging from 0 to -0.1 feet. The pool shows minor scour over the 5 year construction period ranging from -0.1 to -0.5 feet. This pool is predominantly sand with an average depth of approximately 3.9 feet. The Project should results in minor deepening of the pool, considered to be beneficial to the habitat and to the species.

Upper Twin Pool. This pool shows minor scour over the 5 year period of record ranging from -0.1 to -0.4 feet. The pool shows minor scour for years 1-4 (-0.1 to -0.5 feet) with minor deposition in year 5 (1.4 feet). This pool is predominantly boulder with an average depth of approximately

1.6 feet. The pool should see beneficial deepening in years 1-4, and revert to the No Action alternative condition in year 5. The Project would have no beneficial affect during years 1-4 and no affect in year 5 on either the species or the habitat.

Lower Twin Pool. This pool shows minor scour over the 5 year period of record ranging from -0.1 to -0.4 feet. The pool shows minor scour for years 1-4 (-0.1 to -0.5 feet) with minor deposition in year 5 (1.4 feet). This pool is predominantly sand with an average depth of approximately 3.9 feet. The pool should see beneficial deepening in years 1-4, and revert to the No Action alternative condition in year 5. The Project would have no beneficial affect during years 1-4 and no affect in year 5 on either the species or the habitat.

Mullet Pool. The pool shows minor scour for the 5 years of record ranging from 0 to -0.3 feet. The pool shows minor scour for the 5 years of construction ranging from 0 to -0.8 feet. This pool is predominantly boulder with an average depth of approximately 1.6 feet. Scour for the Project condition is somewhat greater than the No Action alternative. The Project should results in minor deepening of the pool, considered to be beneficial to the habitat and to the species.

Start Pool. This pool shows significant deposition during the No Action alternative 5 year period of record ranging from 0.6 to 6.5 feet. The pool shows a similar, albeit slightly delayed, pattern of deposition ranging from 0.6 to 7.3 feet. This pool is predominantly sand with an average depth of approximately 2.3 feet. The similar pattern of deposition indicates that the Project would have no effect on the habitat or species in comparison to the No Action alternative.

Conclusion. The Project either has beneficial or no effect on the habitat and species in the pools described above versus No Action alternative.

4. The Monitoring and Adaptive Management Plan (MAMP) is intended to measure the success of the Project and to implement correctional measures if the completed Project is not meeting its goals. As such, the MAMP is not the correct vehicle for what the NMFS is requesting. USACE has committed to annual surveys of Malibu Creek from Rindge Dam down to the Start Pool prior to the start of each construction year. The surveys should provide sufficient detail to address the concerns expressed in this item by the NMFS.

Removal of Rindge Dam

1. The proposed work window is February-October each year. This window allows us to access the area prior to any nesting by birds, and gives sufficient time to complete as much work as possible. The only undefined part of this schedule is the ability of USACE to extend work past October should weather forecasts indicate dry conditions extending past October. Extending the work for a given year has the potential for shortening the overall construction time period, thus minimizing possible construction-related impacts to the overall environment. The recommended work window of June 1 to October 31 would likely add an additional 2-3 years to the overall construction schedule.

2. USACE worked with other interests to identify the proposed means of removal of the concrete arch, and utilized diamond-wire saw cutting as the dam removal methodology for

purposes of cost estimation and scheduling. While other methods were not eliminated from possible use, restrictions will be put in-place during PED and the development of plans and specifications for construction to ensure a contractor precludes any introduction of concrete debris into Malibu Creek below the dam from concrete arch or spillway removal. This restriction would ultimately preclude use of blasting as an option. The likely remaining methods are sawing and hydraulic hammering. Specific sound attenuation measures will be discussed during PED, and in detail once a contractor has selected a methodology to use for construction, as well as limiting the noise effects to the maximum extent practicable, including daylight hours only. Construction activities will be limited to between the hours of 7:00 a.m. and 8:00 p.m. only. Construction is prohibited on Sundays and legal holidays.

None of those factors can be known or predicted at this time. Part of the relocation plan, which will be prepared in consultation with the NMFS, will include specific relocation sites based on the above factors. A key concern will be relocating individuals far enough away so that noise from dam removal activities does not affect the relocated fish.

3. The current level of design anticipates that the lowering of the dam arch and mining of impounded sediment will leave the remaining concrete arch at the same level as the remaining impounded sediment by October of each construction year. As previously stated, this is to ensure there is no additional storm sediment from storms trapped behind the remaining concrete arch during winter storms, or that a dynamic load (water) is introduced to the remaining structure with the potential for pooling in the remaining impounded sediment area after storms. This mimics the existing condition. The dam will continue to function as it currently does, passing turbidity over the dam during flow events. The only difference will be that the impoundment area will have been stripped of its vegetative cover. An evaluation such as that requested by the NMFS is beyond the scope of the Feasibility Study. Given the size of the watershed, we do not consider that the relatively small inundations area would contribute measurably to sediment loading in Malibu Creek as compared to the no action alternative during any hydrological condition (e.g., very wet, wet, normal, below normal, dry, extremely dry).

4. We have revised the earlier figure adding dam height elevations following each year of construction. A similar figure for the spillway is not needed as the spillway is built on a bedrock outcrop that will be left in-place, and spillway removal consists of stripping the concrete structure off of this bedrock.

5. All impounded sediment will be removed in the dry by truck. There will be no slurry created during this process. Malibu Creek waters will be confined and routed around the work area, groundwater will be pumped from wells and discharged below the dam. The following measure was included in the Draft IFR for impacts to water quality from a spill:

> WR-1. Best Management Practices During Construction. Prior to construction a stormwater pollution prevention plan (SWPPP) will be prepared to address potential impacts to stormwater from construction equipment, construction crews, and construction practices. The SWPPP shall include best management practices to prevent accidental spills and other contamination of Malibu Creek, and shall include provisions for in-the-dry construction at the barrier sites, and regular monitoring of water quality, including turbidity, during

construction and in the winter runoff season. The SWPPP will include a provision for adaptive measures to be taken in the event of excess contamination or turbidity.

6. The following measures taken from the Draft IFR relate to minimizing potential impacts to steelhead and to critical habitat:

BIO-1. Qualified biologist oversight. A qualified biologist will be responsible for overseeing compliance with protective measures for the biological resources during clearing and construction activities within designated areas.
BIO-2 Oil Spill Control. Oil-absorbing floating booms will be kept onsite and the contractor will respond to aquatic spills during construction.
BIO-3 Equipment Maintenance. Vehicles and equipment will be kept in good repair, without leaks of hydraulic or lubricating fluids. If such leaks or drips do occur, they will be cleaned up immediately. Equipment maintenance and/or repair will be confined to one location. Runoff in this area will be controlled to prevent contamination of soils and water.
BIO-8 SWPPP. A Storm Water Pollution Prevention Plan (SWPPP) will be required to prevent construction materials (fuels, oils, and lubricants) from spilling or otherwise entering the creek.
BIO-9 Employee Education Program. An employee education program will be developed. Each employee (including temporary, contractors, and subcontractors) will participate in a training/awareness program prior to working on the proposed Project. Prior to the onset of construction activities, the Contractor will provide all personnel who will be present on work areas within or adjacent to the Project area the following information:

- o A detailed description of all listed species including color photographs;
- o The protection listed species receive under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;
- o The protective measures being implemented to conserve all listed species during construction activities associated with the proposed Project; and
- o A point of contact if listed species are observed.
- o Provisions of water quality Best Management Practices (BMP) and provisions of the SWPPP will be provided along with consequences for violations incurred by non-compliance with BMP and SWPPP provisions.
- o Issue identification cards to shift supervisors with photos, descriptions, and actions to be taken upon sighting for the listed species that may be encountered during construction.
- o Discuss roles and responsibilities of Biologists hired to perform surveys and monitoring.

BIO-10 Fish Rescue and Relocation. A fish rescue and relocation plan will be developed prior to commencing work in areas where impacts to special status fish species may occur. The fish rescue and relocation will be conducted under the supervision of a qualified biologist and will entail measures to reduce effects to steelhead and other fish associated with in-water construction activities.

Dewatering and Fish Relocation

1. There is no dewatering proposed for critical habitat located downstream of Rindge Dam.

2. The only practicable method for maintaining water temperature in the bypass pipe is to use insulated pipe backed up by temperature monitoring. USACE will incorporate this as a feature of the Project design during PED.

3. The requested study on dewatering at other dam removal sites cannot be undertaken during the Feasibility study phase. However, dewatering and excavation in the dry are standard construction practices and would not greatly benefit from such a study. The Corps has previously committed to monitoring of dewatering well effluent to ensure that the pumped water is free of turbidity. Additionally, we anticipate that Best Management Practices (BMP) and monitoring will be required as part of the 401 Water Quality Certification for the Project that will be applied for during the Preconstruction Engineering and Design (PED) Phase of the Project.

4. The details of the BMPs are not available at this phase of the Project. Those details will be worked out during the PED Phase with the Los Angeles Regional Water Quality Control Board as part of the 401 Water Quality Certification. Those detailed BMPs will then be incorporated into the design that USACE has previously committed to providing to NMFS for review and comment, including all drafts. Potential BMPs include monitoring of water bypassed around the construction site for turbidity, incorporating filters if needed, design of dewatering well packing to filter sediments out of pumped water, construction practices on site to minimize exposure of sediments to water flows, and traffic control to minimize dust.

5. Monitoring of the transplant sites is best considered in the fish rescue and relocation plan to be prepared in consultation with the NMFS prior to commencing work. At this stage of the Feasibility Study, we would propose monthly monitoring of any transplant sites for the following characteristics: temperature under 20 degrees Celcisus, dissolved oxygen greater than 5mg/l, consistent steady flow, with depth depending on life stage, at least one meter depth. We would select transplant pools based on pools possessing those initial characteristics as well as pools that, in the experience of the local sponsor, are stable pools that do not dry up in the normal course of events. More frequent monitoring, therefore, would not be required.

Post-Dam Removal

1. The primary stream channel design objective is to restore the slope that exists upstream of the impoundment area to recreate the pre-dam conditions. Other design objectives will be taken from guidance documents including Guidelines for Salmonid Passage at Stream Crossings, NMFS, Sept 2001; the Final Southern California Steelhead Recovery Plan, Southwest Region, Protected Resources Division, Long Beach, California. Jan 2012, the California Salmonid Stream Habitat Restoration Manual Fourth Edition, CDFG 2010; and the Stream Habitat Restoration Guidelines, Washington Departments of Fish and Wildlife, Natural Resources, Transportation and Ecology, Washington State Recreation and Conservation Office, Puget Sound Partnership, and the U.S. Fish and Wildlife Service. Olympia, Washington, 2012. Detailed design of the restore channel through the impoundment area will be prepared during PED Phase. If the NMFS is aware of other guidance documents that would assist the Corps in this effort, we would greatly appreciate references or copies.

2. Design criteria of the restored channel will be based on restoration of the slope to match upstream slopes and the utilization of guidance prepared by NMFS and others for the restoration of streams for salmonids, including steelhead as discussed in items 1 above and 6 below.

3. The design details requested are not available at this point of the Feasibility Study. They will be shared with NMFS as they are developed during the PED Phase of the Project.

4. The design details requested are not available at this point of the Feasibility Study. They will be shared with NMFS as they are developed during the PED Phase of the Project.

5. The design details requested are not available at this point of the Feasibility Study. They will be shared with NMFS as they are developed during the PED Phase of the Project.

6. Final design of the restored channel will incorporate guidance prepared in California and Washington states for restored salmonid streams as well as NMFS guidance to promote the development of steelhead habitat in the impoundment area. Changes to stream morphology over time are shown on figures included in Appendix B of the Draft IFR. Plates 16.6-2 and 16.6-3 shows the profiles immediately after construction; Plates 16.6-4 and 16.6-5 five years after construction (Year 10); and Plates 16.6-6 and 16.6-7 forty-five years after construction (Year 50).

7. The restored channel in the Rindge Dam and impounded sediment area will expose the pre-dam alluvium and bedrock outcrops. At this stage of study, there is no reason to believe that the restored channel will not provide suitable fish-passage conditions. The Monitoring and Adaptive Management Plan (MAMP) is a Corps requirement for assessing Project performance, determining whether ecological success has been achieved, or whether adaptive management measures may be needed to attain Project benefits, and for providing for adaptive management measures where needed. Those actions will be coordinated with NMFS ahead of time to ensure that appropriate adaptive management measures are taken.

8. Minor amounts of scour and deposition are expected in the reaches downstream of the dam site. Refer to the attached table for data taken from the sediment modelling results for the pools described for the No Action and Project scenarios for years 10, 20, 30, 40, & 50. The results are very similar in almost all of the pools for post construction time periods, particularly towards the end of the Project life of 50 years. One exception is the Main Dam Pool that shows higher deposition rates for the Project than for the No Action alternative. Given the depth of this poo; and its predominantly sand composition, no effects are expected to steelhead passage and/or spawning and rearing conditions as a result of the Project, once construction is completed. Changes to stream morphology over time are shown on figures included in Appendix B of the Draft IFR. Plates 16.6-2 and 16.6-3 shows the profiles immediately after construction; Plates 16.6-4 and 16.6-5 five years after construction (Year 10); and Plates 16.6-6 and 16.6-7 forty-five years after construction (Year 50).

9. The current version of the MAMP is as detailed as possible in this stage of the Feasibility Study. A more detailed version will be developed during PED Phase, in consultation with the NMFS. However, at this time, there is no proposed future maintenance proposed. The final design is intended to be self-sufficient and to function without maintenance. The local sponsor (California

Department of Parks and Recreation) will continue its program of invasive plant species eradication as discovered and as allowed by funding. All reports prepared as a result of implementation of the MAMP will be provide to NMFS for their review.

10. USACE determined that there would be no impact to steelhead habitat in Malibu Lagoon based primarily on the results of the sediment transport model. The sediment transport analysis completed for the Project indicates a small potential for induced sediment deposition for the proposed Project in comparison to the No Action Alternative in Malibu Lagoon. Years 1, 2, & 3 show identical levels of deposition in the upper lagoon while years 4 & 5 show 1.7 feet for No Action and 1.9 feet for the Project. Results for the lower lagoon are similar with reduced levels of deposition for the Project as compared to the No Action alternative. After 10 years, in Malibu Lagoon, stream deposition would average 2.3 to 3.0 feet, in comparison to 2.6 to 3.0 feet in the without-Project condition. Results of the sediment model for the lagoon are shown on the attached spreadsheets. Sediment will continue to be deposited at the mouth of the creek and within the lagoon, as it would under the No Action scenario. No additional sediment removal, beyond what is required in the No Action scenario, is anticipated. A further, detailed description of the anticipated changes to estuarine processes (e.g., circulation, habitat types, berm dynamics, depth profiles, nutrient loading) as a result of the restored channel located 3 miles upstream of the lagoon are not warranted and cannot be accommodated within the schedule and funding limitations of the current Feasibility Study.

11. The design details requested are not available at this point of the Feasibility Study. They will be shared with NMFS as they are developed during the PED Phase of the Project. The objective of the Project is to restore the impoundment area using native plant species characteristic of riparian conditions found upstream of the dam site.

Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks

1. Upstream barriers require either modification or removal of the existing aquatic habitat barrier. Specific design issues will not be available until PED Phase when those designs will be provided to NMFS for their review. See attached table for modifications required or each of the upstream barriers.

2. Final designs of each of the upstream barriers will be designed using the recommended fish-passage criteria. The intent of the design is to be self-sustaining and not require maintenance. Designs generated during PED will be provided to the NMFS for review.

References

The requested references will be provided on CD to be attached to this attachment. We will include a copy of the Final Coordination Act Report as well as the Draft Coordination Act Report requested. As noted, all references were previously provided, with the exception of the fifth reference. The sixth reference is an appendix to the Draft IFR.

Errata

We noticed some errors (mainly typographical) in our previous submittal attached to our February 8, 2018, letter. We would like to correct those errors for the record. The text below is the revised version that should replace the text as indicated.

Replace the text under the heading of Action Area with the following:

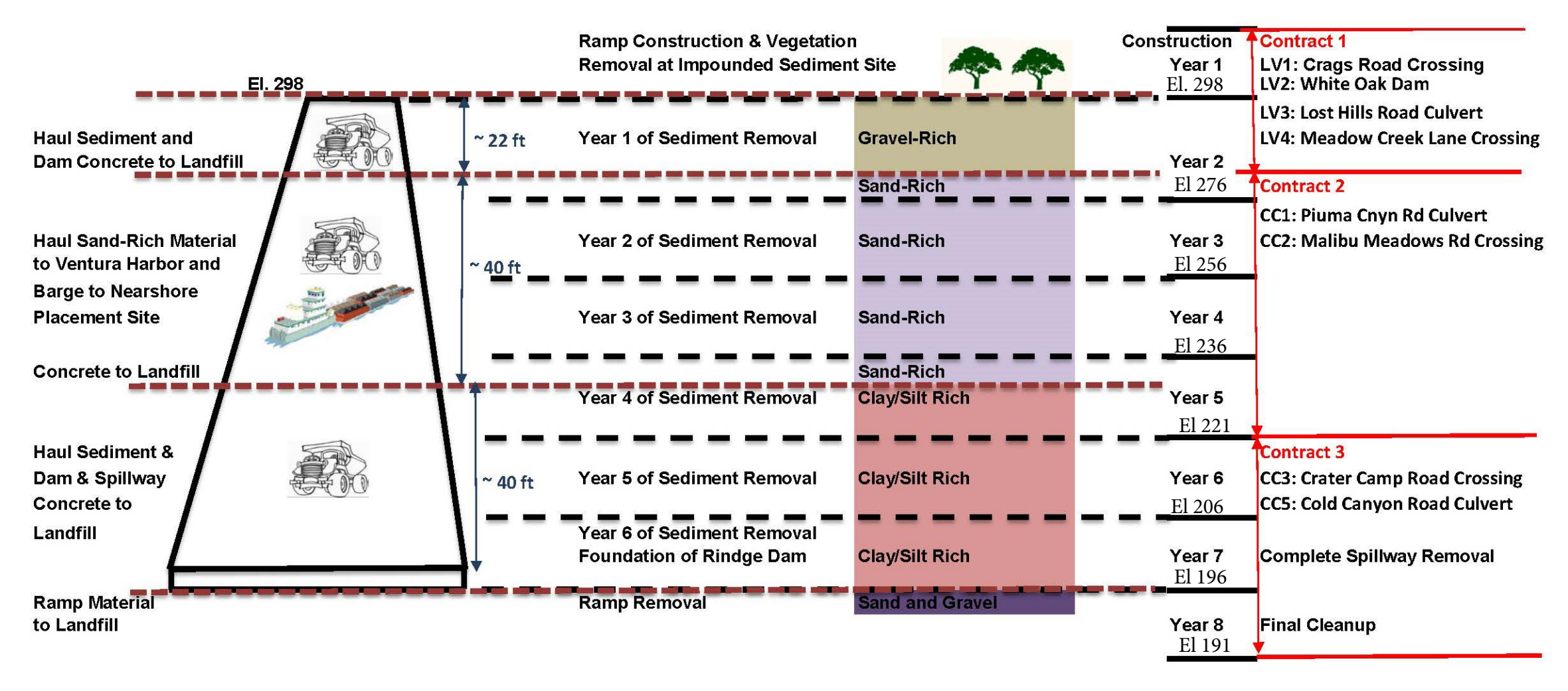
2. Action Area

Action area is defined in 50 CFR 402.02 as "all areas to be affected directly and indirectly by the Federal action and not merely the immediate area involved in the action." The action area comprises a) three stream miles below Rindge Dam and approximately 5-1/2 stream miles above Rindge Dam, which includes the 2,400 linear feet of impounded sediment and two access ramps, b) the immediate area surrounding the small barriers upstream (along Las Virgenes and Cold Creek) of Rindge Dam that could be removed for additional aquatic habitat, and c) the nearshore placement site. Refer to Figures 2 & 3 in the BA for locations as well as Figure 1, 2, and 3 herein, taken from the Draft Integrated Feasibility Report (IFR).

Replace the text in the second paragraph under the heading Removal of Rindge Dam and Spillway with the following:

3. Removal of Rindge Dam and Spillway

After pre-construction investigations are completed and the design is finalized, construction begins. Reinitiation of consultation in accordance with 50 CFR 402.16 would occur should changed conditions or design features warrant reconsideration of potential impacts or implementation of conservation measures.


Ramp Construction & Vegetation
Removal at Impounded Sediment Site
El. 298
Haul Sediment and
Dam Concrete to Landfill
~ 22 ft
Year 1 of Sediment Removal
Gravel-Rich
Sand-Rich
Haul Sand-Rich Material
to Ventura Harbor and
Barge to Nearshore
Placement Site
~ 40 ft
Year 2 of Sediment Removal
Sand-Rich
Year 3 of Sediment Removal
Sand-Rich
Concrete to Landfill
Sand-Rich
Year 4 of Sediment Removal
Clay/Silt Rich
Haul Sediment &
Dam & Spillway
Concrete to
Landfill
~ 40 ft
Year 5 of Sediment Removal
Clay/Silt Rich
Year 6 of Sediment Removal
Foundation of Rindge Dam
Clay/Silt Rich
Ramp Material
to Landfill
Ramp Removal
Sand and Gravel
Construction
Year 1
El. 298
Year 2
El 276
Year 3
El 256
Year 4
El 236
Year 5
El 221
Year 6
El 206
Year 7
El 196
Year 8
El 191
Contract 1
LV1: Crags Road Crossing
LV2: White Oak Dam
LV3: Lost Hills Road Culvert
LV4: Meadow Creek Lane Crossing
Contract 2
CC1: Piuma Cnyn Rd Culvert
CC2: Malibu Meadows Rd Crossing
Contract 3
CC3: Crater Camp Road Crossing
CC5: Cold Canyon Road Culvert
Complete Spillway Removal
Final Cleanup

Malibu Creek Upstream Barriers			
Barrier Symbol	**Barrier Name**	**Barrier Description**	**Proposed Restoration**
CC1	**Piuma Culvert**	CC1, Piuma Culvert, is a wide corrugated metal pipe (CMP) arch culvert with a concrete invert. Piuma Rd. passes over the structure and provides access to homes throughout the hills.	Restore natural channel -- regrade creek bed to address the drop/restore habitat in place of concrete invert.
CC2	**Malibu Meadows Road Crossing**	CC2, Malibu Meadows Road Crossing, is a steel beam bridge with a wood deck. The bridge is part of Malibu Meadows Road which is a narrow two lane road that serves homes throughout the hills.	Remove concrete slab impeding aquatic connectivity, regrade channel to address drop, and restore habitat.
CC3	**Crater Camp Road Crossing**	CC3, Crater Camp Road Crossing, is steel beam bridge with a wood deck. The bridge is part of Crater Camp Road which is a narrow road that serves homes throughout the hills.	Remove concrete invert impeding aquatic connectivity, regrade channel to address drop, and restore habitat.
CC5	**Cold Canyon Road Culvert**	CC5, Cold Canyon Road Culvert is a concrete culvert along Cold Creek underneath Cold Canyon Road. Cold Canyon Road is a two lane rural road that serves homes in the mountains.	Construct a low flow channel through the existing culvert
LV1	**Crags Road Culvert Crossing**	LV1, Crags Road Culvert is a concrete, double barrel culvert located along Las Virgenes Creek. It currently serves as a road crossing for maintenance vehicles and emergency access for Malibu State Park and fire trucks as well as for recreational users.	Restore natural channel -- regrade creek bed/restore habitat in place by removing two corrugated metal pipes and bridge structure.
LV2	**White Oak Dam**	LV2, White Oak Dam is small diversion dam that is 6 ft high and spans 87 ft across Las Virgenes Creek. It was originally built to collect water for agricultural use. Dam is no longer in use.	Remove the dam in stages and restore cleared areas once removal complete.
LV3	**Lost Hills Road Culvert**	LV3, Los Hills Road Culvert is a concrete box culvert with four openings. Los Hills Road is a four lane road that passes over the culvert and through a densely developed residential area.	Construct a low flow channel through the existing culvert.
LV4	**Meadow Creek Lane Crossing**	LV 4, Meadow Creek Lane Crossing, located 930 ft upstream of LV3, is a concrete culvert with four openings. Meadow Creek Lane is a two lane road that passes over the culvert and it serves as one of two points of entry into a densely developed residential neighborhood.	Construct a low flow channel through the existing culvert.

Malibu Creek Sediment Model Results for Pools during Construction

Pool Name	Distance (m upstream from ocean)	Dominant Substrate	Max Depth (cm)	Average Depth (cm)	Latitude	Longitude	Station	Year 1 No Action	Year 1 LPP	Year 2 No Action	Year 2 LPP	Year 3 No Action	Year 3 LPP	Year 4 No Action	Year 4 LPP	Year 5 No Action	Year 5 LPP
Malibu Lagoon	0						550	0.0	0.0	0.6	0.5	1.0	0.8	0.8	0.7	0.9	0.8
Malibu Lagoon	88						839	0.0	0.0	0.9	0.9	1.5	1.5	1.7	1.9	1.7	1.9
Start Pool	1043	sand	110	70	34.0482425	-118.6899779	7761	0.6	0.6	5.5	3.4	6.3	4.6	6.4	5.9	6.5	7.3
Mullet Pool	1473	boulder	90	50	34.0513790	-118.6905460	8770	0.0	0.0	-0.1	-0.4	-0.2	-0.7	-0.3	-0.9	-0.3	-0.8
Lower Twin	1616	sand	280	120	34.0518790	-118.6918290	9301	-0.1	-0.1	-0.3	-0.3	-0.4	-0.5	-0.4	-0.4	-0.4	1.4
Upper Twin	1719	boulder	80	50	34.0519500	-118.6927850	9386	-0.1	-0.1	-0.3	-0.3	-0.4	-0.5	-0.4	-0.4	-0.4	1.4
Lunch Pool	1996	sand	200	120	34.0537243	-118.6922221	10273	-0.1	-0.1	0.0	-0.4	-0.1	-0.5	-0.1	-0.5	-0.1	-0.5
Grimmer Pool	2671	sand	270	180	34.0584786	-118.6921402	12080	0.0	0.0	0.7	0.3	0.8	0.8	1.3	0.8	1.3	1.1
First Bend	3022	sand	210	100	34.0610331	-118.6919451	12690	-0.2	-0.3	-1.6	-2.4	-1.7	-2.4	-1.9	-2.6	-1.9	-2.6
Tufa Rock	3290	gravel	80	50	34.0627810	-118.6928300	13775	-0.9	-1.1	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Pool above Tufa	3322	boulders	120	60	34.0627747	-118.6930556	13775	-0.9	-1.1	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Big Wide	3579	gravel	250	90	34.0643167	-118.6943500	14394	0.4	0.2	3.4	1.9	3.5	2.1	3.4	2.3	3.4	3.6
West Bedrock Corner	3714	sand	160	60	34.0646380	-118.6954150	14747	0.1	0.0	2.4	1.2	2.7	0.0	-1.8	-2.8	-1.8	-2.8
Pipe Pool	3810	sand	170	80	34.0654910	-118.6958150	15091	-0.3	-0.6	-0.4	-2.3	-1.4	-2.9	-2.9	-2.9	-2.9	-2.9
Willow Overhang	4090	cobble	110	70	34.0652167	-118.6979000	14630	0.0	-0.3	0.7	-0.4	0.5	0.0	1.9	0.8	1.9	1.1
Main Dam Pool	4127	sand	450	250	34.0650130	-118.6981520	15990	5.6	2.9	3.3	1.4	3.0	1.3	2.2	1.1	2.2	2.5

Future without project results taken from Table 15-1, Appendix B, Draft IFR
Future with project results taken from table 16-5, Appendix B, Draft IFR

Malibu Creek Long-Term Sediment Model Results for Pools

Pool Name	Distance (m upstream from ocean)	Dominant Substrate	Max Depth (cm)	Average Depth (cm)	Latitude	Longitude	Station	Year 10 No Action	Year 10 LPP	Year 20 No Action	Year 20 LPP	Year 30 No Action	Year 30 LPP	Year 40 No Action	Year 40 LPP	Year 50 No Action	Year 50 LPP
Malibu Lagoon	0						550	2.1	2.1	2.1	2.1	2.1	2.1	1.9	1.9	2.0	2.0
Malibu Lagoon	88						839	3.0	3.0	2.9	3.0	2.9	3.0	2.6	2.6	2.7	2.8
Start Pool	1043	sand	110	70	34.0482425	-118.6899779	7761	7.7	7.8	8.5	8.5	8.8	8.7	9.3	9.5	10.8	10.4
Mullet Pool	1473	boulder	90	50	34.0513790	-118.6905460	8770	-1.6	-1.2	-1.7	-1.2	-1.9	-1.5	-2.8	-1.8	-2.8	-1.8
Lower Twin	1616	sand	280	120	34.0518790	-118.6918290	9301	0.0	0.8	-0.5	1.1	0.8	2.5	2.8	3.9	3.6	4.8
Upper Twin	1719	boulder	80	50	34.0519500	-118.6927850	9386	0.0	0.8	-0.5	1.1	0.8	2.5	2.8	3.9	3.6	4.8
Lunch Pool	1996	sand	200	120	34.0537243	-118.6922221	10273	-0.8	-1.0	-0.9	-1.0	-1.0	-1.0	-0.6	0.0	-0.6	0.7
Grimmer Pool	2671	sand	270	180	34.0584786	-118.6921402	12080	2.0	1.5	2.3	2.1	2.3	2.8	-3.9	-0.8	-4.0	1.6
First Bend	3022	sand	210	100	34.0610331	-118.6919451	12690	-2.7	-2.7	-2.6	-2.7	-2.7	-2.7	-2.7	-2.7	-2.7	-2.7
Tufa Rock	3290	gravel	80	50	34.0627810	-118.6928300	13775	-2.8	-1.1	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Pool above Tufa	3322	boulders	120	60	34.0627747	-118.6930556	13775	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Big Wide	3579	gravel	250	90	34.0643167	-118.6943500	14394	2.2	2.3	-1.2	2.0	-2.8	2.4	-2.8	1.0	-2.8	1.6
West Bedrock Corner	3714	sand	160	60	34.0646380	-118.6954150	14747	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Pipe Pool	3810	sand	170	80	34.0654910	-118.6958150	15091	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9
Willow Overhang	4090	cobble	110	70	34.0652167	-118.6979000	14630	-1.1	-1.3	-2.8	-2.6	-2.8	-2.2	-2.8	-1.1	-2.8	-2.4
Main Dam Pool	4127	sand	450	250	34.0650130	-118.6981520	15990	1.7	2.6	1.6	1.1	1.7	2.8	0.6	3.4	0.6	2.9

Future without project results taken from Table 15-1, Appendix B, Draft IFR
Future with project results taken from table 16-5, Appendix B, Draft IFR

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

May 3, 2018

Planning Division

Ms. Alecia Van Atta
Assistant Regional Administrator
California Coastal Office
National Marine Fisheries Service
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

Dear Ms. Van Atta:

I am responding to your letter dated April 3, 2018, concerning the Malibu Creek Ecosystem Restoration Project Feasibility Study (Project), located in Ventura and Los Angeles counties, California. In your letter (WCR-2018-9239), you indicated the U.S. Army Corps of Engineers (USACE) still has not provided all relevant data required by 50 CFR § 402.14(c) to initiate formal consultation under section 7 of the Endangered Species Act (ESA) of 1973, as amended, concerning the effects the Project would have on the southern California steelhead (*Oncorhynchus mykiss*) and its designated critical habitat.

The National Marine Fisheries Service's (NMFS) views concerning the sufficiency of information to initiate formal consultation jeopardizes the ability of the USACE to complete this study, in addition to potentially affecting all future studies that require formal consultation with the NMFS. In addition, USACE disagrees with the NMFS' West Coast Region's recently established position that it has the discretion to unilaterally terminate formal consultation. These are critical programmatic issues for the USACE, particularly as we conduct feasibility studies in the future that may require formal consultation with the NMFS. Completion of timely consultations utilizing the best scientific and commercial data available is the only way that we can move forward with this study and Project, and other future studies.

The data and other responsive materials USACE provided to initiate formal consultation complied with applicable regulations and follows the ESA handbook. By providing the best scientific and commercial data "available," the agency met its obligations under 50 CFR § 402.14(d). With the information contained in the USACE's November 13, 2017, request to initiate formal consultation, along with additional information provided in our February 8, 2018, and March 2, 2018, correspondence, NMFS is in receipt of the best scientific and commercial data available to formulate a BO in accordance with 50 CFR § 402.14(g). The USACE has also enclosed with this letter technical responses to the request for additional information made in NMFS' April 3, 2018, letter. The USACE is committed to assisting NMFS staff in evaluating the

information provided for use in its evaluation, making available its technical experts, with the understanding that NMFS will initiate preparation of a biological opinion (BO) before mid-May 2018, in accordance with applicable law and regulations.

Section 4.4, Formal Consultation Procedures, of the ESA handbook states that formal consultation will not begin until NMFS receives the information requested OR a statement from the action agency explaining why the information will not be available. The USACE provided the relevant statement in writing in its February 8, 2018 letter, expressly indicating that there is no other available information.

This issue is also discussed in Section 1.2, Agency Responsibilities, subsection (D), Information Standards and Sources, of the ESA handbook, which states, in pertinent part:

> The Act requires the action agency to provide the best scientific and commercial data available concerning the impact of the proposed project on listed species or designated critical habitat. Where significant data gaps exist there are two options: (1) if the action agency concurs, extend the due date of the biological opinion until sufficient information is developed for a more complete analysis; or (2) develop the biological opinion with the available information giving the benefit of the doubt to the species. These alternatives must be discussed with the action agency and the applicant, if any. Based on this discussion, a decision regarding the preparation of the biological opinion should be made and documented in the administrative record of that opinion. This subsequent analysis may have minor or major consequences (worst case scenario) depending on the significance of the missing data to the effects determination. The action agency also should be advised that if and when additional data become available, re-initiation of consultation may be required.

There are no "significant data gaps" that should have major consequences to the effects determination. However, this section of the ESA handbook makes clear that extending the due date of the BO requires the concurrence of the action agency. Where the action agency indicates that the best available data has been provided and that consultation be completed without the requested additional information, it is within NMFS's discretion to develop the BO with the information available, giving the benefit of the doubt to the species, as required in the ESA handbook. However, neither the regulations nor the ESA handbook provide for NMFS to extend the due date of formal consultation unilaterally or to refuse to prepare a BO because its preferred information is unavailable.

The USACE is particularly concerned with the NMFS' new regional position included at the end of the April 3, 2018 letter. At the end of the letter, NMFS states that it has the discretion to unilaterally terminate formal consultation by assuming withdrawal of the consultation request by the federal action agency if requested information is not provided within a very short turnaround time. NMFS may not unilaterally proceed on an assumption that the USACE formal consultation request is withdrawn after forty-five (45) days from a letter requesting information that is not available. The action agency is the agency with the authority to determine whether the

information is or can be made available, to notify NMFS if the information is not available, and to indicate whether the consultation can be extended or NMFS should proceed with preparation of a BO.

It is critical for USACE to obtain a BO from the NMFS to complete the feasibility study phase for this Project. The USACE's Headquarters has confirmed it will not initiate their review and processing of the final feasibility report, or support Los Angeles District actions to initiate the Pre-Construction, Engineering and Design (PED) and Construction phases of this Project, without a BO from NMFS. We will be placing the study in an "inactive" status in mid-May, without NMFS initiation of a BO. This status increases the risk of study and Project termination.

The NMFS's January 17, 2018 letter to the California Coastal Commission clearly expresses support for the Project, and given that Malibu Creek is one of the three "Core 1" watersheds within the Santa Monica Mountains Biogeographic Population Group identified in the NMFS's Southern California Steelhead Recovery Plan, the USACE encourages the NMFS to prepare a BO to support the design and construction of this Project. The NMFS's refusal to do so puts the future of the Project at great risk.

The enclosed technical responses from the Los Angeles District to the information requested is similar to what USACE has already provided to NMFS. The information provided represents the best scientific and commercial data available for analysis of potential effects to steelhead and designated critical habitat below Rindge Dam at this feasibility study stage. The level of detail of analysis is commensurate with information developed by USACE for this feasibility study.

More detailed information will be developed on this Project during the PED phase and Construction phase. We understand and acknowledge that if and when further data become available, the need for re-initiation of consultation may be triggered. The USACE has committed in the past to coordination with the NMFS throughout all remaining phases of the Project to ensure minimization of impacts to the species and to designated critical habitat. The USACE reaffirms that commitment, in this manner, and pledges to work in continuing partnership with the NMFS should this Project achieve authorization and construction funding in the future.

A copy of this letter is being furnished to Mr. Barry Thom, the Regional Administrator for the NMFS West Coast Region, Mr. Chris Yates, Assistant Regional Administrator, Protected Resources Division, NMFS and Mr. Anthony Spina, Chief, Southern California Branch, NMFS. We are also providing copies to Mr. Jay Chamberlin, the California Department of Parks and Recreation (CDPR) Chief of Natural Resources Division, Mr. Craig Sap, the CDPR Angeles District Superintendent, and Ms. Suzanne Goode and Ms. Jamie King from CDPR. We have also informed staff at the USACE Headquarters of the regional problems we are experiencing with this study, and other studies and projects. Our intent remains to address and resolve issues at the regional level, but we also are preparing to elevate these issues to the national level if we are unable to resolve differences by mid-May 2018.

I sincerely appreciate the time you spent with me on April 19, 2018 in San Francisco. I thought it was a great discussion, and I departed with a clear understanding of the pressure and constraints under which NMFS is currently operating. However, I am confident that we can work through this important and challenging project together. Thank you for your attention to this matter. If you have any questions regarding the above, please contact me at (213) 452-3961, or your staff may contact Mr. Eduardo Demesa, Planning Division Chief, at (213) 452-3783, Eduardo.T.Demesa@usace.army.mil, or Mr. Larry Smith, Project Biologist, at (213) 452-3846, lawrence.j.smith@usace.army.mil.

Sincerely,

Kirk Gibbs
Colonel, U.S. Army
Commander and District Engineer

Attachment

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

APR 0 3 2018

In response refer to: WCR-2018-9239

Eduardo T. De Mesa
U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

Re: Insufficient information to initiate formal consultation under 7(a)(2) of the Endangered Species Act for the Malibu Creek Ecosystem Restoration Project, Los Angeles and Ventura Counties

Dear Mr. De Mesa:

Thank you for your letter requesting initiation of formal 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.*), for the Malibu Creek Ecosystem Restoration Project (proposed action). With your letter, we received responses to our letter dated February 21, 2018, including requested reports.

Consultation History and Current Status

The U.S. Army Corps of Engineers (Corps) requested initiation of formal consultation on November 14, 2017, concerning the removal of Rindge Dam and several upstream fish-passage barriers on Malibu Creek for the purpose of restoring natural ecosystem processes, including steelhead access to historical spawning and rearing habitats upstream of the dam. After reviewing the Corps' written request and biological assessment (BA), NMFS determined the information was insufficient to initiate formal consultation in accordance with Section 7 implementing regulation at 50 CFR§402.14(c).

In a letter to the Corps dated January 23, 2018, NMFS requested information to better understand potential short and long-term effects to endangered steelhead (*Oncorhynchus mykiss*) and designated critical habitat for this species. NMFS received a written response from the Corps dated February 8, 2018. On February 15, 2018, NMFS and the Corps met and discussed information contained in NMFS' January 23, 2018, letter as well as components of the proposed action and information contained in the Corps' February 8, 2018, letter. NMFS clarified to the Corps that the feasibility level of information they had provided was insufficient to develop a clear understanding of potential effects on steelhead and critical habitat. In particular, the information developed to date was for the purpose of informing the feasibility of certain alternatives, not to inform an ESA formal consultation. As a result, the substantive technical information that is needed to assess effects of the

action had not yet been developed. Moreover, NMFS understood that essential design information was not slated for development until later this year. Following the meeting, NMFS agreed to develop a letter that clarified the information needed from the Corps to begin formal consultation.

On February 21, 2018, NMFS submitted a letter to the Corps which identified key substantive concerns regarding potential short and long-term effects to steelhead and critical habitat. Additionally, the letter described the specific information needed to begin formal consultation. NMFS received the Corps' response letter dated March 2, 2018.

The materials provided with your March 2, 2018, letter do not provide the information necessary to initiate formal consultation under the ESA as described in the regulations governing interagency consultations (50 CFR §402.14(c)). Specifically, the Corps continues to use feasibility level sediment transport model outputs that were intended to detect differences between dam removal alternatives and not to assess short and long-term effects on steelhead and critical habitat. Additionally, the Corps is unable to provide the design details, including the basis of design report for the restored stream channel because, as the Corps acknowledges, much of the information that NMFS has requested will not be available until the Pre-Construction, Engineering and Design (PED) Phase, which is not scheduled to occur until later this year. However, NMFS requires the updated sediment transport model and post-dam removal design information to begin formal consultation. Below we once again describe what is needed to initiate formal ESA consultation.

Information Needed to Initiate Formal Consultation

50 CFR §402.14(c)(1) requires a description of the proposed action to be considered. The project materials we received do not adequately describe the proposed activities. Without this information we cannot estimate the risk to endangered steelhead and designated critical habitat from the proposed action. Please provide the following information:

Removal of Rindge Dam

1. The Corps proposes a work window (February to October) when adult steelhead are expected to be present and spawning downstream of the dam. Describe the measures that would be undertaken to avoid and/or minimize potential effects to adult steelhead and critical habitat downstream of Rindge Dam.

2. Hydraulic hammering is not an excluded dam removal method (Corps 2018a,[1] pg. 5), yet it is not described. Provide the details of this method, including an acoustic assessment of potential effects on steelhead. The assessment should describe the methods for evaluating potential effects on steelhead due to noise generated from hydraulic hammering, and results of the acoustic evaluation. Additionally, include a discussion of any sound-attenuation measures that would be incorporated into the action to minimize effects on steelhead.

3. The Corps stated spillway removal would occur during year 4 of construction (Corps 2018a, pg. 8), yet the updated schematic indicates spillway removal will be completed during

[1] U.S. Army Corps of Engineers (Corps). 2018a. Letter and attachment to NOAA's National Marine Fisheries Service (NMFS). March 2, 2018. Responses to NMFS' February 21, 2018, letter.

construction year 7 (Corps 2018b[2]). Please clarify this discrepancy. Additionally, the method of spillway removal is not provided other than being described as "stripping the concrete structure off the bedrock outcrop (Corps 2018b, pg. 5)." Describe in detail the method(s) of spillway removal including an assessment of potential effects on steelhead and critical habitat. Additionally, provide measures that would preclude material from entering Malibu Creek.

Sediment Removal

1. Because sediment-transport conditions described in the BA (Corps 2017a,[3] pg. 19) and preliminary sediment transport model results (Corps 2017b,[4].pg. B-109) suggest that sedimentation (*i.e.*, settling of sand and smaller particles on the channel bed, filling interstitial spaces between coarse substrate) within the downstream reaches could affect spawning and rearing habitat over several consecutive seasons, the Corps proposes to perform annual surveys of Malibu Creek from Rindge Dam to the Start Pool prior to each construction season (Corps 2018a, pg. 4). Provide the details of the proposed monitoring plan and annual survey. The monitoring plan should be capable of detecting and then timely reconciling adverse effects to ensure that suitable spawning and rearing conditions are maintained through the downstream reach over the period of construction.

Dewatering

1. Details concerning the proposed use of dewatering wells and associated filtration systems remain undefined and cannot be determined during the feasibility study phase, yet the Corps continues to state that there will be no turbidity related effects to steelhead below the dam during construction (Corps 2018a, pg.7). The Corps should provide a meaningful effects analysis that illustrates the consequences of sediment dewatering on steelhead and critical habitat downstream of Rindge Dam. The analysis should describe the anticipated turbidity concentrations and sedimentation rates from the scheduled water releases into the creek below the dam and potential effects to steelhead and critical habitat for this species.

2. The Corps anticipates that best management practices (BMPs) and monitoring will ensure discharged dewatering well effluent will be free of turbidity (Corps 2018a, pg. 7), yet the details of the BMPs (and the monitoring) have not been provided. If the Corps cannot ensure the quality of the pumped water is consistent with needs of steelhead in the creek, BMPs and/or components of the monitoring plan should be developed to identify and rectify this specific issue.

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[2] U.S. Army Corps of Engineers (Corps). 2018b. Letter and attachment to NOAA's National Marine Fisheries Service (NMFS). February 8, 2018. Responses to NMFS' January 23, 2018, letter.

[3] U.S. Army Corps of Engineers (Corps). 2017a. Malibu Creek Ecosystem Restoration Project. Biological Assessment. July 2017.

[4] U.S. Army Corps of Engineers (Corps). 2017b. Hydrology, Hydraulics, and Sedimentation Report. January 2017.

Post-Dam Removal

1. Provide to NMFS clear identification of the stream channel design objectives to be met. These objectives should be described in terms of geomorphic, hydraulic, and biological function.

2. Provide to NMFS the hydrologic and hydraulic analyses, geomorphic assessment, and updated sediment-transport model used to establish design criteria for the restored channel. The design criteria should at a minimum consider proposed stream channel geomorphology, sediment transport, fish passage, and hydraulic performance. Provide a detailed discussion about how the analyses were utilized to establish the design criteria.

3. Provide to NMFS design details regarding the proposed final channel configuration, including the length of stream channel to be excavated, alignment of the low-flow channel, upstream and downstream control points, and proposed channel slope. Describe the findings of the geotechnical investigations used to characterize the streambed surface to remain after the impounded sediment is removed. Additionally, provide plan sheets or conceptual drawings that clearly depict the aforementioned features of the restored stream channel.

4. A longitudinal profile of the proposed project-thalweg elevation compared to the existing thalweg should be provided to NMFS. The profile should extend 10 channel widths upstream and downstream of the project reach and clearly depict significant channel features such as the upstream and downstream control points.

5. Channel cross-sections, depths, and widths for the section of excavated stream channel to be restored should be provided to NMFS.

6. The Corps states there is no reason to believe that the restored channel will not provide suitable fish-passage conditions (Corps 2018a. pg. 8), yet an updated analysis that supports this statement has not been provided. If the restored channel cannot ensure that suitable fish-passage conditions will be attained over time, describe the implications for passage of adult and juvenile steelhead, and propose measures to minimize the adverse effects.

7. Submit to NMFS an updated Monitoring and Adaptive Management Plan that describes; (1) the methods for assessing sustained function of the restored channel, (2) the requirement to submit the reports to NMFS that provide the results of monitoring and any evidence of successful steelhead passage (*i.e.*, observed adult steelhead migrating through the dam site, redds upstream of dam site), and (3) recommendations and the schedule for future proposed maintenance to ensure long term function.

8. Details regarding the removal and trimming of riparian vegetation under the proposed action and revegetation plan should be provided to NMFS. Include a complete set of design drawings with sufficient detail to indicate existing riparian trees to be removed or trimmed for all construction locations under the proposed action. Identify the ratio that riparian trees (and vegetation) will be replanted to mitigate loss of trees or enhance temporarily disturbed areas. A description of the irrigation system that will be installed to provide water to newly

planted vegetation for establishment periods should be submitted to NMFS. Finally, include a description of the revegetation-monitoring plan to be implemented following project completion.

Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks

1. Fish-passage design plans for the barrier removal sites upstream of the dam have not been provided. The Corps should provide to NMFS the basis of design report and construction details for each individual fish-passage project. The report should include applicable items described in the *Post-Dam Removal* section above (Number 1-8).

50 CFR §402.14(c)(4) requires a description of the manner in which the proposed action may affect any listed species or critical habitat and an analysis of any cumulative effects. Although the Corps indicates the proposed project has been reviewed for its impacts to federally listed species and their designated critical habitat, the analyses used to assess potential effects on steelhead and critical habitat is insufficient. In order to initiate consultation, the Corps must describe how the species and their habitat will be affected and provide a meaningful analysis of effects. The following identifies the specific information the Corps must provide in fulfillment of 50 CFR§402.14(c)(4):

Removal of Rindge Dam

1. The Corps states their current approach to dam removal and resulting turbidity and sedimentation effects would mimic the existing condition. The difference being that the impounded area would be completely stripped of vegetation and the top layer of boulder/cobble material would be removed during the first year of construction. However, the Corps should provide NMFS with an assessment that describes the potential effects of this activity and related environmental conditions on endangered steelhead and designated critical habitat for this species.

Sediment Removal

1. Feasibility level sediment transport modeling outputs generally describe impacts to steelhead critical habitat downstream of the dam following 5 consecutive construction seasons (Corps 2017b, pg. B-109); however, under the proposed action, these effects would actually be observed over 8 seasons. Therefore, an updated sediment transport model and analysis that clearly translates sediment transport modeling results to effects on steelhead critical habitat downstream should be provided. Additionally, the updated model should consider the level of scour allowed below the dam which should represent the historic context of streambed degradation that has occurred during the time Rindge Dam has been in place. To this end, provide to NMFS an updated sediment-transport model (*e.g.*, DREAM models, Cui *et. al.* 2010[5]) that explicitly evaluates the consequences of removing vegetation and exposing soil and sediment over extensive areas, and maintaining such conditions for several years, on the characteristics and condition of instream habitat, and steelhead, downstream of the dam. Of

[5] Yantao Cui, Gary Parker, Christian Braudrick, William E Dietrich & Brian Cluer (2010). Dam Removal Express Assessment Models (DREAM)., Journal of Hydraulic Research, 44:3, 291-307, DOI: 10.1080/00221686.2006.9521683

particular concern is the influence of rainfall and elevated creek discharge that exceeds impounded volume, resulting in spill downstream. For each construction season, the evaluation should describe in detail the degree to which transported sediment would affect steelhead spawning, rearing, and migration habitat downstream of the dam under various hydrological conditions (*e.g.*, very wet, wet, normal, below normal, dry, extremely dry).

2. The Corps determined there would be no impact to steelhead habitat in Malibu Lagoon based on the feasibility level sediment transport model outputs (Corps 2018a, pg. 9). Based on the updated sediment transport model described above, provide an evaluation of potential effects on Malibu Lagoon. The updated evaluation should clearly describe the anticipated changes to surface hydrology (*e.g.*, frequency and timing of lagoon breaching) and estuarine processes (*e.g.*, berm dynamics, circulation, lagoon volume, depth profiles, nutrient loading), that result from the dam removal activities each season and therefore impact the quality and quantity of steelhead habitat. Specifically describe the degree and extent to which the project is likely to affect steelhead rearing and migratory behavior in the lagoon.

3. The Corps proposes to grade the impounded sediment to an even slope to minimize flow obstructions and increased turbidity during winter storm flows (Corps 2018b, pg. 2). Provide a discussion about how the proposed winterization measure of grading is anticipated to minimize downstream sedimentation (*i.e.*, silt and sand) and turbidity effects to steelhead and designated critical habitat for this species during winter and spring following each construction season.

4. Because steelhead in Malibu Creek downstream from Rindge Dam have no water quality refuges, provide to NMFS suspended sediment daily time-series estimates for the hydrologic conditions that steelhead would likely experience over the 8-years of construction. These results, accounting for increased sediment concentration due to construction as well as sediment natural transport events, should be compared to background suspended sediment concentration.

Post-Dam Removal

1. Based on an updated sediment transport model as explained above, submit to NMFS a detailed evaluation of how the restored channel will promote the development of steelhead habitat including the maintenance of suitable passage and rearing conditions over the life of the project. The evaluation should include: (1) how the proposed streambed elevations, channel slope, and, upstream and downstream control points were determined, (2) a description of the stability of the restored channel and any self-sustaining streambed features, (3) how the restored channel will provide hydraulic conditions similar to those naturally found in Malibu Creek (outside the influence of Rindge Dam), and (4) a description of the anticipated changes to streambed elevation owing to the dam removal and how those changes are expected to alter the distribution of steelhead habitat within and downstream of the dam site over time. Finally, summarize all anticipated changes to stream morphology and fish-passage conditions, including the extent, nature, and duration of these changes, owing to the restored stream channel.

2. Based on an updated sediment transport model, provide to NMFS a detailed description of the related possible effects on steelhead passage and spawning and rearing conditions if aggradation or degradation of the restored streambed is expected. Depending on the type and severity of these effects, the Corps should include in their revised or supplemental BA a proposed plan that is intended to offset the potential effects of channel aggradation or degradation on steelhead passage and spawning and rearing conditions.

3. The Corps determined that there would be no impact to steelhead habitat in Malibu Lagoon (Corps 2018b, pg. 9), however this determination is not based on updated sediment transport modeling outputs. Therefore, the Corps should provide an updated description of the anticipated changes to estuarine processes (*e.g.*, circulation, habitat types, berm dynamics, depth profiles, nutrient loading) as a result of the restored channel. The Corps should describe the degree and extent to which the final design may affect steelhead rearing and migratory behavior within the lagoon, during the post-removal phase.

Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks

1. Hydraulic design projects should meet current NMFS[6] and CDFW[7] fish–passage criteria. To this end, provide a fish-passage analysis that evaluates and justifies the appropriateness of the selected high and low passage design flows (adult and juvenile) for the proposed design, and details how the proposed design will function and influence migration and rearing habitat during winter and summer flows, based on the findings of the hydraulics analysis. Concerning the evaluation of the high adult design flow, describe how the design flow was calculated and the active channel was defined. The evaluation should include analysis for the adult and juvenile design flows through the project area, including 10 channel lengths upstream and downstream of the existing impediment. Based on the evaluation, a detailed justification describing the suitability of the selected high passage-design flow for adult steelhead should be provided. The analysis should indicate whether the proposed design will be self-sustaining and reliable.

Until we receive this information, we cannot initiate formal ESA consultation. We are available to help you determine how best to develop this information. If we do not receive a response from you within 45 days, we will close out this consultation by assuming the consultation request is withdrawn. If you are still interested in consulting after 45 days have lapsed, please provide us a new request for consultation with complete information.

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[6] NMFS. 2011. Anadromous Salmonid Passage Facility Design. National Marine Fisheries Service-Northwest Region. July 2011

[7] CDFG. 2009. California Salmonid Stream Habitat Restoration Manual: Part XII: Fish Passage Design and Implementation. California Department of Fish and Game. April 2009.

Please contact Jay Ogawa at (562) 980-4061 or via email at jay.ogawa@noaa.gov if you have a question concerning this letter, or if you require additional information.

Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

cc: Suzanne Goode, California State Parks
Chris Delith, USFWS, Ventura
Mary Larson, CDFW, Los Alamitos
Administrative file: 1514WCR2018CC00008

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

July 6, 2018 **In response refer to:** WCR-2018-9239

Eduardo T. De Mesa
U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

Dear Mr. De Mesa:

NOAA's National Marine Fisheries Service (NMFS) received the U.S. Army Corps of Engineers' (Corps) May 3, 2018 response to our letter dated April 3, 2018, regarding the Malibu Creek Ecosystem Restoration Project (proposed action). Having reviewed the Corps' response, we continue to find the information insufficient to initiate formal consultation pursuant to Section 7 of the Endangered Species Act (ESA) (50 CFR §402.14(c)).

We believe the information developed to date was for the purpose of assessing the feasibility of certain dam-removal alternatives, not the expected effects of the proposed action on endangered steelhead (*Oncorhynchus mykiss*) and designated critical habitat for this species in the context of an ESA consultation. Although the preconstruction, engineering, and design phases would likely render the essential details to properly inform a formal consultation, we understand these phases are not immediately anticipated.

However, our review indicates the current information would be useful to formulate a general plan or program establishing an outline to guide the eventual development of the proposed action. Such a program would conceivably qualify as a "framework programmatic action."[1] Consequently, the Corps may wish to recast the current proposed action as a framework programmatic action and then request initiation of formal consultation with NMFS for this action,[2] if consultation is desired at this time.

When recasting the proposed action, including the content of the biological assessment, keep in mind that a framework programmatic action only establishes an outline for guiding the eventual development of a specific future action (in this case, removing Rindge Dam and undertaking

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[1] "…a framework for the development of future action(s) that are authorized, funded, or carried out at a later time, and any take of a listed species would not occur unless and until those future action(s) are authorized, funded, or carried out and subject to further section 7 consultation" (50 CR 402.02).

[2] Based on our familiarity with the current proposed action, the framework programmatic action considered here is expected to establish a program, including conditions or standards, which may affect endangered steelhead and designated critical habitat for this species.

corresponding activities), but does not authorize any future action. Under these conditions, the programmatic action itself is not expected to contain the necessary details for assessing the amount and extent of incidental take.

Accordingly, the biological opinion that considers the proposed adoption of a program establishing a framework for the development of any future action would not include an incidental take statement. Any incidental take resulting from a subsequent action that proceeds under the broader framework programmatic action would be the subject of a separate ESA Section 7 consultation and incidental take statement, as appropriate.

Should the Corps wish to propose adoption of a program establishing a framework that would inform the ensuing development of the Malibu Creek Ecosystem Restoration Project, we recommend the program include the following program categories and standards. These standards are advisable for the purpose of minimizing the duration, amount, and extent of effects on the listed species and its designated critical habitat from the anticipated effects of dam removal activities.

Dam and Spillway Removal

- Demolition activities would incorporate measures to minimize noise disturbance to steelhead and not result in the loss of critical habitat downstream the dam.

Sediment Removal

- Sediment-removal activities would include reliable methods to minimize the loss or degradation of spawning, rearing, or migration habitat downstream of the dam or elevated levels of turbidity on steelhead.
- Sediment-removal activities would incorporate proper controls to minimize alteration of estuarine processes and surface hydrology within Malibu Lagoon.

Dewatering

- The release of effluents from work sites would be minimized.
- The dewatering plan would include measures to minimize the magnitude and duration of elevated levels of turbidity and sedimentation downstream of the dam.

Post-Dam Removal

- The proposed channel-restoration element would promote long-term protection of physical or biological features for critical habitat of endangered steelhead[3]. Specifically, the restored channel would provide volitional unimpeded steelhead-passage to upstream rearing and spawning habitats, restore riparian habitat within the impounded area, and restore natural fluvial geomorphic processes.

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[3] The designation of critical habitat for Southern California steelhead uses the term "primary constituent elements" (NMFS 2005, 70 FR 52488; September 2, 2005). The new critical habitat regulations (U.S. Fish and Wildlife Service and NMFS 2016, 81 FR 7214; February 11, 2016) replace this term with "physical or biological features (PBFs)." PBFs are the sites and habitat components that support one or more life stages of the listed species.

Modification/Removal of Upstream Barriers on Las Virgenes and Cold Creeks

- Barrier modification projects would be designed to promote attainment of NMFS[4] and CDFW[5] fish-passage criteria and volitional unimpeded passage for adult and juvenile steelhead.

We appreciate the continued dialog on this important project. Please contact Jay Ogawa at (562) 980-4061 or via email at jay.ogawa@noaa.gov if you have any questions, or if you require additional information.

Sincerely,

for Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

cc: Suzanne Goode, California State Parks
Chris Dellith, USFWS, Ventura
Mary Larson, CDFW, Los Alamitos
Administrative No. 151422WCR2018CC00008

[4] NMFS. 2011. Anadromous Salmonid Passage Facility Design. National Marine Fisheries Service-Northwest Region. July 2011

[5] CDFG. 2009. California Salmonid Stream Habitat Restoration Manual: Part XII: Fish Passage Design and Implementation. California Department of Fish and Game. April 2009.

UNITED STATES DEPARTMENT OF COMMERCE
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West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

May 16, 2019

Colonel Aaron Barta
Commander and District Engineer
U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

Dear Colonel Barta:

NOAA's National Marine Fisheries Service (NMFS) is pleased to support the United States Army Corps of Engineers' (Corps) Malibu Creek Ecosystem Restoration Project (Project) and associated modification or removal of Rindge Dam. The Project is of particular interest to NMFS because Rindge Dam precludes endangered steelhead (*Oncorhynchus mykiss*) from accessing historic spawning and rearing habitats. Habitat fragmentation is one of many impacts of dams on anadromous salmonids such as steelhead, and is believed to increase extinction risk of this species. NMFS' Southern California Steelhead Recovery Plan[1] identifies removal or physical modification of Rindge Dam as an essential action to promote recovery of this species. Development and implementation of the Project is expected to contribute substantially to the survival and recovery of steelhead in Malibu Creek.

The Project involves substantive elements requiring further analyses in order to reliably assess potential effects on endangered steelhead and its designated critical habitat. This level of technical information has not yet been developed and will be necessary to begin formal consultation pursuant to Section 7 of the U.S. Endangered Species Act. The Corps and NMFS met on March 20, 2019, to discuss the information needed to begin formal consultation (as detailed in NMFS' letters dated February 21, 2018, and April 3, 2018). Development of this data and analyses would occur during the upcoming Pre-Construction, Engineering, and Design (PED) phase of the Project. NMFS supports deferring formal consultation to the PED phase of the project.

[1]www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/south_central_southern_california_coast/south_cental_southern_california_coast_recovery_plan_documents.html

NMFS appreciates the Corps' ongoing commitment to carry forward and ultimately complete the Project in a manner that protects endangered steelhead and its designated critical habitat. Please contact Jay Ogawa at (562) 980-4061 should you have any questions or if you would like additional information.

Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

cc: David Van Dorpe, U.S. Army Corps of Engineers
Jodi Clifford, U.S. Army Corps of Engineers
Jesse Ray, U.S. Army Corps of Engineers
Administrative File: 151422WCR2018CC00008

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

June 10, 2019

Colonel Aaron Barta
Commander and District Engineer
U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

Dear Colonel Barta:

NOAA's National Marine Fisheries Service (NMFS) is pleased to support the United States Army Corps of Engineers' (Corps) Malibu Creek Ecosystem Restoration Project (Project) and associated modification or removal of Rindge Dam. The Project is of particular interest to NMFS because Rindge Dam precludes endangered steelhead (*Oncorhynchus mykiss*) from accessing historic spawning and rearing habitats. Habitat fragmentation is one of many impacts of dams on anadromous salmonids such as steelhead, and is believed to increase extinction risk of this species. NMFS' Southern California Steelhead Recovery Plan[1] identifies removal or physical modification of Rindge Dam as an essential action to promote recovery of this species. Development and implementation of the Project is expected to contribute substantially to the survival and recovery of steelhead in Malibu Creek.

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Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

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