Malibu Creek Ecosystem Restoration Study

Los Angeles and Ventura Counties, California

Appendix R

Consistency Determination and Concurrence

U.S. Army Corps of Engineers
Los Angeles District

November 2020

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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

October 16, 2017

Planning Division

John Ainsworth
Executive Director
California Coastal Commission
45 Fremont, Suite 2000
Attention: Mr. Larry Simon
San Francisco, California 94105-2219

Dear Mr. Ainsworth:

Enclosed for your action is a copy of the U.S. Army Corps of Engineers, Los Angeles District's (Corps) Consistency Determination (CCD) for the recommended plan for the Malibu Creek Ecosystem Restoration Project, the Locally Preferred Plan (LPP), also referred to as Alternative 2b2. The purpose of the Malibu Creek Ecosystem Restoration Project is to restore aquatic habitat connectivity along Malibu Creek and tributaries, establish a more natural sediment regime from the watershed to the shoreline, and restore aquatic habitat of sufficient quality along Malibu Creek and tributaries to sustain or enhance indigenous populations of aquatic species within the next several decades, allowing for migratory opportunities to about 15 miles of aquatic habitat that have been unreachable for many decades in this Los Angeles and Ventura Counties, California.

The Corps is requesting Commission concurrence with the enclosed CCD. The Corps has determined that the proposed project is consistent, to the maximum extent practicable with the Coastal Zone Management Act of 1976.

The federally listed endangered species southern California steelhead – Southern California distinct population segment (DPS) (*Oncorhynchus mykiss*) is present in the area. The Corps has determined that the project May Affect, Likely to Adversely Affect this DPS and that it is Not Likely to Destroy or Adversely Modify designated critical habitat for this DPS. Formal consultation with the National Marine Fisheries Service is ongoing. The Biological Assessment prepared for this formal consultation is attached for your reference. Formal consultation with the U.S. Fish and Wildlife Service is not required as the project would not affect listed species under their jurisdiction.

The Corps has consulted with local Native American tribes and with the State Historical Preservation Officer (SHPO) regarding potential cultural resources that may be present at the site. Those efforts are documented in the draft Integrated Feasibility Report provided separately to your office and in the attached Cultural Resources Survey Report for the Malibu Creek Ecosystem Restoration Study.

Comment letters from federal, state, and local resource agencies; local government; and non-governmental organizations are also attached as requested by your staff. We are preparing responses to these comments, which we anticipate will be provided to you within the next two weeks.

Project construction is not anticipated to begin until approximately 2025, subsequent to authorization by Congress. Prior to construction, the Corps will review the project to confirm that the project remains consistent with the Coastal Zone Management Act of 1976. If the Corps determines that the project has changed or has new or different effects on coastal resources that require a supplemental CCD, the Corps will, as provided for the consistency regulations, develop and submit a supplemental CCD to the Coastal Commission.

If you have any questions regarding the project, please contact Mr. Larry Smith, Project Biologist, at (213) 452-3846.

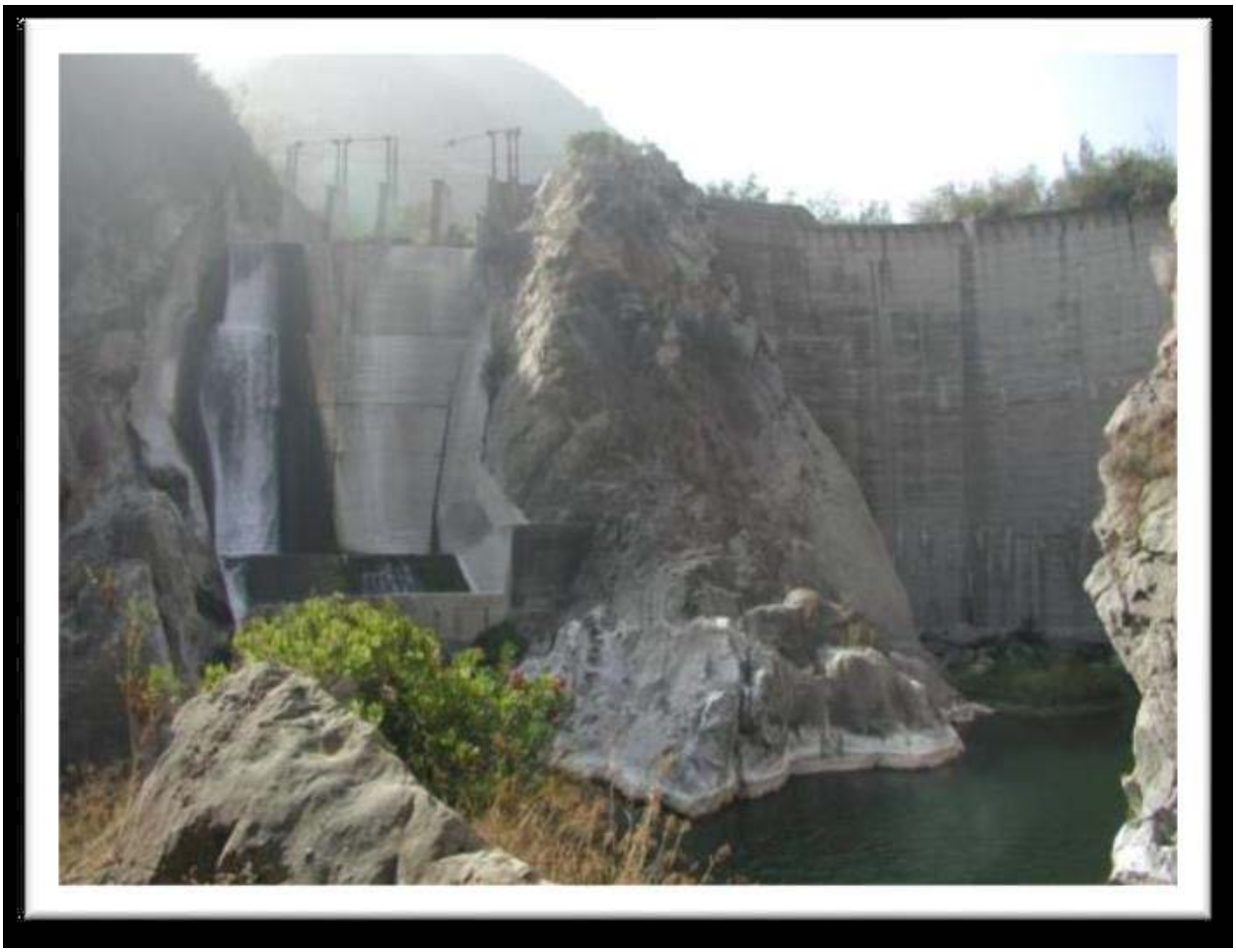
Thank you for your attention to this document.

Sincerely,

for Eduardo T. De Mesa
Chief, Planning Division

Enclosure

Coastal Consistency Determination
Malibu Creek Ecosystem Restoration Study
Los Angeles County, California



Prepared by

US Army Corps of Engineers
South Pacific Division
Los Angeles District

October 2017

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Los Angeles County, California

1.0 AUTHORITY

The Malibu Creek watershed ecosystem restoration feasibility study is prepared as a partial response to the Resolution adopted by the House Committee on Public Works and Transportation, dated February 5, 1992, which reads as follows:

Resolved by the Committee on Public Works and Transportation of the United States House of Representatives, that the Board of Engineers for Rivers and Harbors is requested to review the report of the Chief of Engineers on Point Mugu to San Pedro Breakwater, California Beach Erosion Control Study, published as House Document 277, Eighty-third Congress, Second Session, and other pertinent reports, to determine whether modifications of the recommendations contained therein are advisable at the present time, in the interest of shore protection, storm damage reduction, and other purposes along the shores of Southern California from Point Mugu to the San Pedro Breakwater and nearby areas within Ventura County and Los Angeles County, California.

2.0 DETERMINATION

The U.S. Army Corps of Engineers - Los Angeles District (USACE) has evaluated the recommended Malibu Creek Ecosystem Restoration Project and has found it is consistent to the maximum extent practicable with the California Coastal Management Program (CCMP), pursuant to the requirements of the Coastal Zone Management Act of 1972, as amended, (CZMA), and the California Coastal Act of 1976, as amended (CCA). The Project, for purposes of this Coastal Consistency Determination (CCD), is defined as the Locally Preferred Plan (LPP), otherwise identified as Alternative 2b2 in the Draft Integrated Feasibility Report (IFR). The environmental consideration and consistency sections below provide the basis for the finding. The USACE respectfully requests that the California Coastal Commission (CCC) concur with this CCD.

3.0 STANDARD OF REVIEW

Under Section 307 (c)(1) of the CZMA, 16 USC Section 1456 (c) (1), federal activities that affect any land or water use or natural resource of the coastal zone are required to be consistent with the affected state's coastal management program to the "maximum extent practicable." Section 930.32 of the National Oceanic and Atmospheric Administration's regulations implementing the CZMA (15 CFR part 930) defines "consistent to the maximum extent practicable" as follows:

(a)(1) The term ‘‘consistent to the maximum extent practicable’’ means fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.

The standard of review for federal consistency determinations consists primarily of the principal components of the California Coastal Management Program (CCMP), namely the policies of Chapter 3 of the Coastal Act. Section A(6) of the Introduction to the CCMP also states that once incorporated into the CCMP, certified Local Coastal Programs (LCPs) "will be used in making federal consistency determinations". If an LCP that the Commission has certified and incorporated into the CCMP provides development standards that are applicable to the project site, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information.

4.0 PROJECT DESCRIPTION

The Project proposes the removal of the Rindge Dam arch and spillway concurrent with the removal and placement/disposal of the estimated 780,000 cubic yards of sediment impounded behind the dam, along with modification or removal of eight partial aquatic habitat barriers on Cold Creek and Las Virgenes Creek, upstream tributaries to Malibu Creek. The Calabasas Landfill would be used for disposal of the nearly two-thirds of the impounded sediment. The remaining one-third of the impounded sediment consists of sands in the Unit 2 layer of impounded sediment that would transported 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 near shore placement site, to the east of the pier, for beneficial reuse. The overall LPP construction timeframe is estimated to be 8 years.

The study area is shown in Figure 1, Rindge Dam, and its associated impoundment area is shown on Figure 2. Nearshore placement sites and the barge route for nearshore placement of compatible sediment are shown on Figure 3.

4.1 Project Background

The USACE and the California Department of Parks and Recreation (CDPR) have undertaken a joint study of ecosystem restoration in the Malibu Creek Watershed. CDPR was interested in Federal participation in this study due to the complexity of the challenges related to addressing measures that include significant modifications to Rindge Dam and potential release of some or all of the impounded sediment, and in order to ensure that alternatives developed are complete and comprehensive, particularly related to downstream impacts to the environment and development. A Feasibility Cost Sharing Agreement (FCSA) was signed between the CDPR, the non-Federal sponsor for the study, and the Department of the Army on July 30, 2001, initiating the feasibility phase of the study. The cost of the feasibility phase study is shared equally between the USACE and the CDPR. The FCSA was amended on July 2, 2015 and October 11, 2016.

For decades, the CDPR and stakeholders have been interested in pursuing the modification to, and possible removal of, Rindge Dam, located in Malibu Creek State Park. The evaluation of alternatives for addressing the ecological damage caused by Rindge Dam provides an important opportunity to achieve potential long-term restoration of Malibu Creek. Like most dams, Rindge

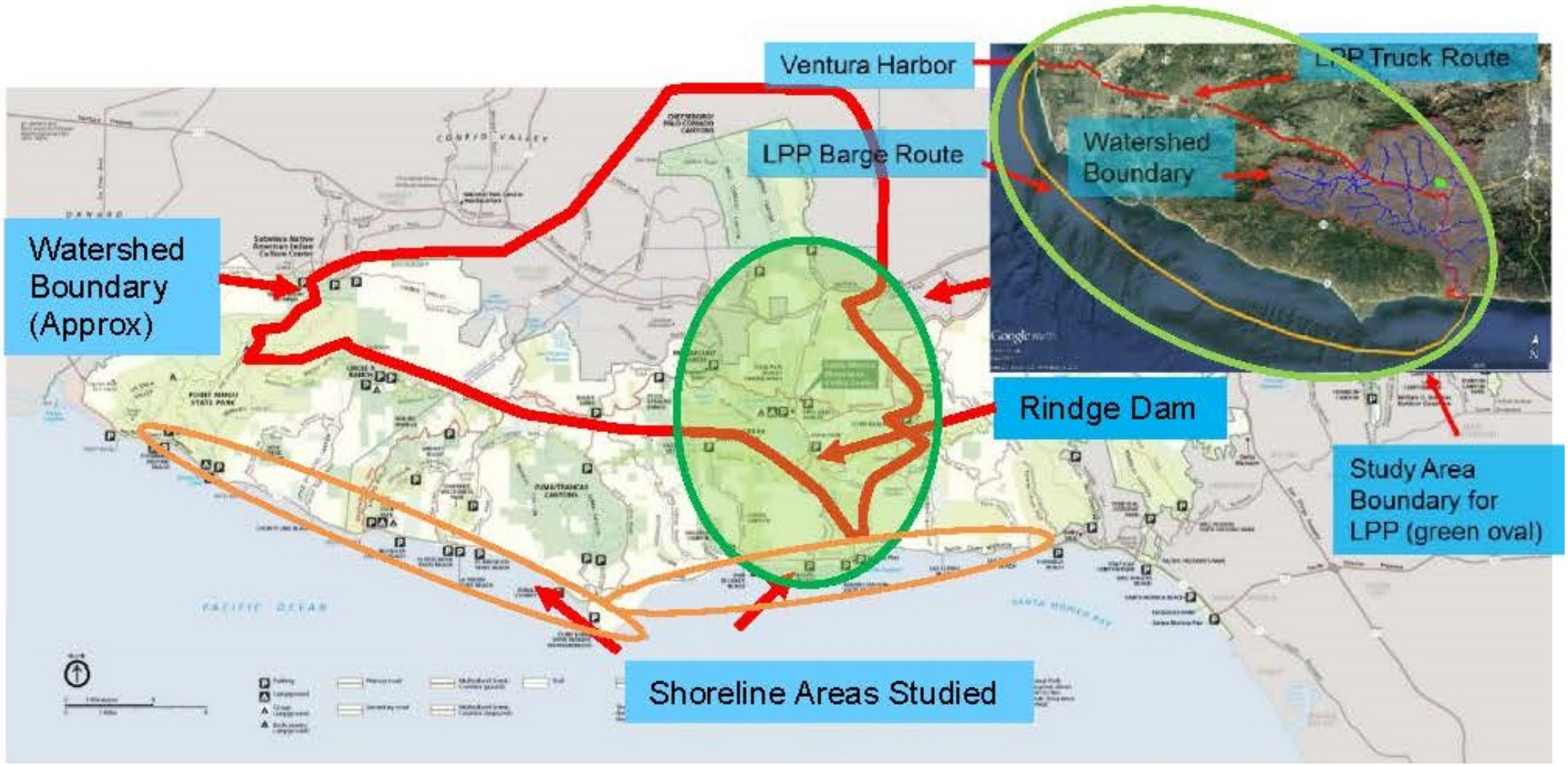

Figure 1 Study and Project Area

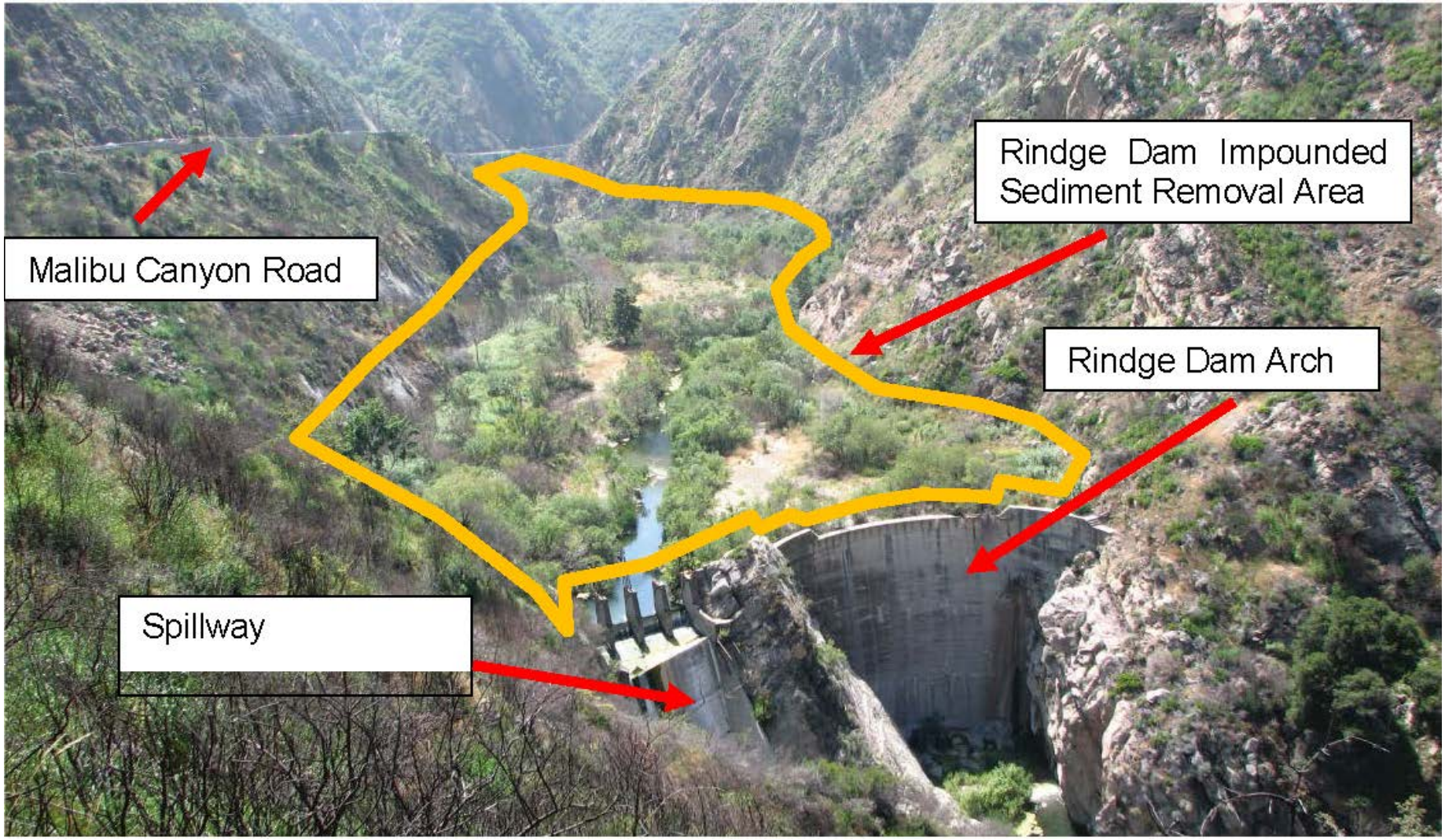

Figure 2 Extent of Rindge Dam Impounded Sediment

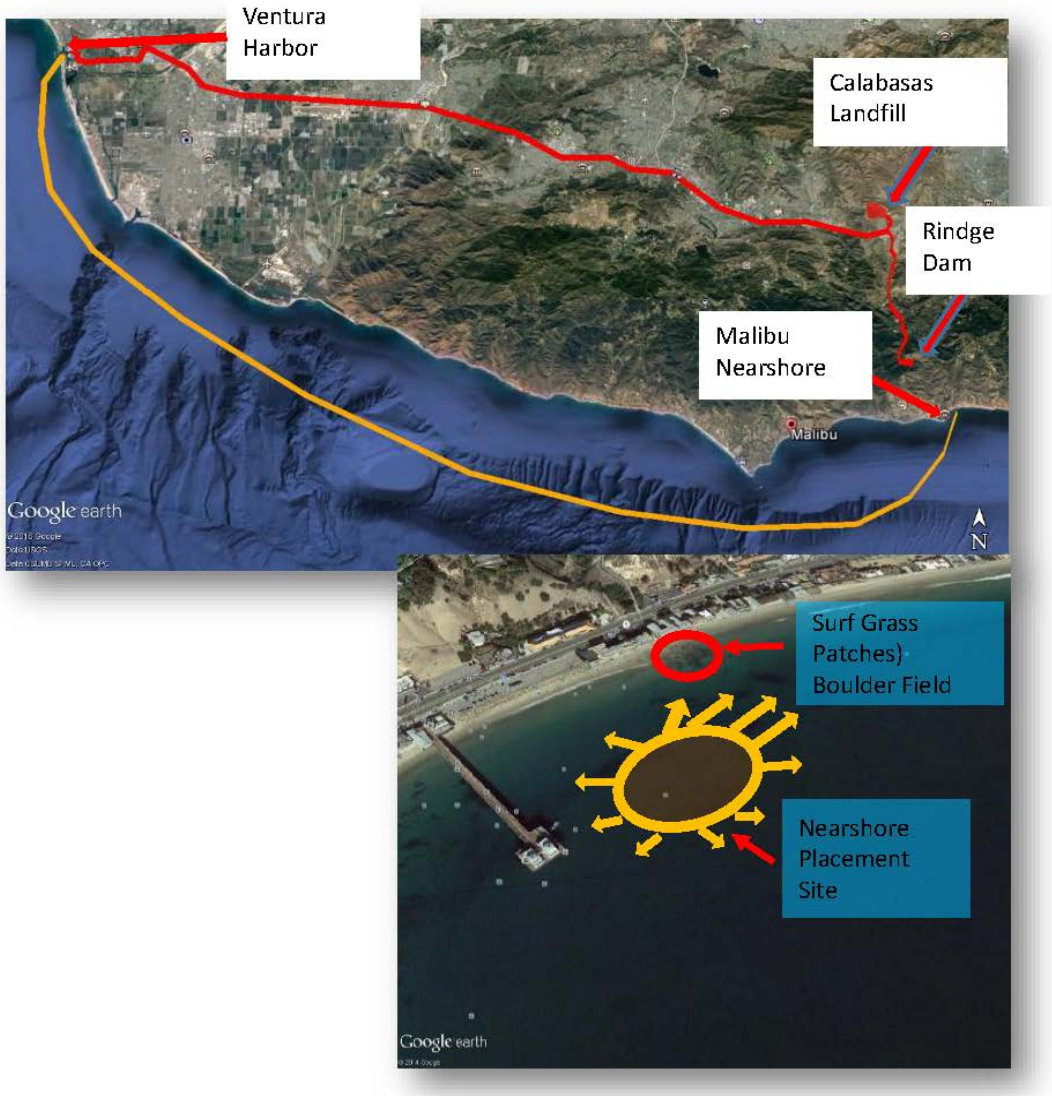

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Figure 3. Nearshore Placement Site

Dam and its impoundment significantly affect stream habitat for southern California steelhead trout and other aquatic species by fragmenting habitat and disrupting ecosystem function (Heinz Center 2002). Access to miles of high quality stream habitat necessary to the species would remain blocked, and the steelhead would remain confined to a small habitat area below Rindge Dam and thus remain vulnerable to all watershed disturbances, such as catastrophic fire, toxic spills, or other disasters.

Resource agencies generally agree that steelhead would benefit if Rindge Dam and all of its impounded sediment were removed. However sediment removal is a costly and complex issue. If not handled properly, dam removal could pose a substantial though temporary flood risk resulting from the downstream movement of sediment and the associated potential for increased flooding or damage to existing habitat (Heinz Center 2002). Therefore, detailed study of removal methods and approaches was required.

Rindge Dam has also restricted the flow of sediment downstream to replenish in-stream gravels and beach sand. With economically important Santa Monica Bay beaches eroding, the use of Rindge Dam sediments to nourish the shoreline and the nearshore environment creates a unique "win-win" ecological and economic nexus that may achieve multiple public benefits. The study has identified how to utilize impounded sediment for beneficial reuse where possible as well as removing the dam's barrier to regular sediment transport over the long term. In addition, CDPR has identified that young adults accessing the dam spillway pose both safety concerns and and risks of continued disturbance to critical habitat for steelhead at the large pool at the base of the dam.

4.2 Purpose and Need

The purpose of the study is to investigate ecosystem restoration opportunities within the Malibu Creek watershed to the nearby Pacific Ocean shoreline, specifically addressing aquatic and riparian ecosystem habitat connectivity problems and potential restoration of a more natural sediment transport regime.

Malibu Creek, located in Los Angeles and Ventura Counties, California, is an important regional ecological corridor that links Santa Monica Bay, the Malibu Lagoon (one of only two remaining large estuaries in Los Angeles County) and riparian systems from the immediate coastal plain with interior plains and valleys. A large portion of the study area is located within the Malibu Creek State Park, and Malibu Lagoon State Beach, both park units managed by the CDPR. This area is also part of the Santa Monica Mountains National Recreation Area (SMMNRA), administered by the National Park Service (NPS). The watershed offers represents a unique opportunity for systematic and sustainable ecosystem restoration in highly urbanized southern California.

The watershed supports a diversity of plant and wildlife species representative of unique biological resources of the transverse ranges of southern California. The unusual geomorphology of Malibu Creek results in a wide variety of habitat types supporting hundreds of native plants and animals. Species have adapted to a climate with cool wet winters and hot dry summers.

The lower three miles of Malibu Creek is critical habitat for the endangered (federally listed) southern California steelhead trout currently blocked from accessing former spawning and rearing habitat due to Rindge Dam, a 100-foot high decommissioned water supply dam, and other smaller barriers on upstream tributaries. The construction of the dam arch and concrete spillway was completed in 1926. The former reservoir behind the dam essentially filled with sediment by the mid-1940s, trapping about 780,000 cubic yards of sediment that would have nourished downstream reaches of the creek and the Malibu shoreline. Rindge Dam altered the natural geomorphic, riparian and aesthetic character of Malibu Creek. Pools, riffles, and runs that historically supported steelhead and other fish still exist above the dam. Upstream tributaries have smaller barriers such as culverts and bridges that interrupt connectivity for aquatic species. The barriers have interrupted the sediment transport regime in the watershed, interfered with habitat connectivity for aquatic species including the steelhead, and degraded habitat for aquatic species, as further described in the next section.

There is a need to reconnect the currently segmented aquatic and riparian corridor and to restore natural hydrology and geomorphology of Malibu Creek and its tributaries. Restoring aquatic habitat connectivity represents a unique opportunity for systematic and sustainable ecosystem restoration in highly urbanized southern California.

For the purposes of the Draft Integrated Feasibility Report (IFR), steelhead trout was selected as the "keystone" species and the potential impacts and benefits of the various project alternatives were assessed in light of how they would potentially affect this species. This species was chosen because of their anadromous life history which requires that the fish have access to high quality habitat in both the ocean and the creek at various stages. By increasing access to habitat that is able to support this species, many of the other species of concern benefit as well. It should be noted that the full suite of potentially present special-status biological resources were considered as part of the IFR.

4.3 Project Objectives and Constraints

Based on the analysis of the identified problems and opportunities and the existing conditions of the study area, planning objectives were identified to direct formulation and evaluation of alternative plans. These were established as objectives for the project.

- Establish a more natural sediment transport regime from the watershed to the southern California shoreline in the vicinity of Malibu Creek within the next several decades.

- Reestablish habitat connectivity along Malibu Creek and its tributaries in the next several decades to restore migratory access to former upstream spawning areas for indigenous aquatic species and allow for safe passage for terrestrial species from the Pacific Ocean to the watershed and broader SMMNRA.

- Restore aquatic habitat of sufficient quality along Malibu Creek and tributaries to sustain or enhance indigenous populations of aquatic species within the next several decades.

Constraints that limited the scope of study include:

- Maintain the downstream baseline condition level of flood risk along lower reaches of Malibu Creek within the Serra Canyon residential community and businesses in the City of Malibu avoiding potential for adverse flood-induced impacts associated with the consideration of upstream ecosystem restoration measures.

- Avoid or minimize adverse impacts to existing aquatic, riparian, lagoon and coastal habitats and species downstream of barriers considered in this study.

- Minimize detrimental impacts to existing water quality parameters in the lower portion of Malibu Creek.

- Avoid modification to ongoing seasonal freshwater discharges from Tapia Water Reclamation Facility into Malibu Creek above Rindge Dam.

4.4 Alternatives

Alternative plans were formulated to meet planning objectives and avoid planning constraints, following an iterative six-step planning process, and using prior and new information developed for this feasibility study. This USACE planning process is based on principles, standards and procedures that guide water resources development at the national level and are articulated in the Principles and Guidelines (P&G). The USACE planning process involves this six-step iterative approach to plan formulation and evaluation, as defined in USACE planning guidance ER 1105-2-100.

4.4.1 Future Without Project – No Action Alternative

USACE is required to consider the option of "No Action" or a Future without Project scenario, as one of the alternatives in order to comply with the requirements of NEPA (42 USC 4321 et seq; see 40 CFR 1502.14(d)) and CEQA (2012 State CEQA Guidelines §15126.2(e)). The No Action alternative is necessary for comparing the costs and benefits of different alternatives. It serves as the baseline by which other alternatives will be evaluated and compared to each other. This alternative is defined by no Federal project occurring. The assumption for the No Action alternative is that the dam and spillway remain in place and the upstream barriers are not removed or modified.

4.4.2 Dam Removal

All action alternatives included in the final array included removal of the dam arch in its entirety, as other measures to address the dam were eliminated during preliminary screening (described further below). The action alternatives differ in whether they include removal of the dam arch only or removal of both the dam arch and the spillway. Removal of the dam arch only is a feature of the National Ecosystem Restoration (NER) plan due to cost constraints. Removal of the dam arch and spillway is a feature of the LPP (recommended Project).

4.4.3 Impounded Sediment Removal

All action alternatives included in the final array included removal of the dam arch in its entirety, as other measures to address the dam were eliminated during preliminary screening (described further below). The action alternatives differ in whether they include removal of the dam arch only or removal of both the dam arch and the spillway. Removal of the dam arch only is a feature of the National Ecosystem Restoration (NER) plan due to cost constraints. Removal of the dam arch and spillway is a feature of the LPP (recommended Project).

4.4.4 Beneficial Reuse of Sand Layer from Impounded Sediment

The impounded sediment behind Rindge Dam has a layer of sand that has been examined and determined to be suitable for beach or nearshore placement as a means of beneficially reusing the sand as it would have been deposited in the absence of the Rindge Dam. There were two placement options evaluated. The first was placement directly onto a beach east of the Malibu Pier. Beach placement is only possible during the winter, so it would require a temporary stockpile during summer excavation activities with the sand moved into the beach parking lot for placement during the winter. This first option is a feature of the NER Plan.

The second option is trucking the sand up to Ventura Harbor, placing the sand onto a split-hull barge for transport and barging it back to the nearshore placement site (Figure 3), and placing it by bottom dumping. This option eliminates the need to utilize the Malibu Pier parking lot and reduces localized traffic impacts. This option is part of the LPP (recommended Project).

4.4.5 Upstream Barrier Removal/Modification

Removal or modification of eight barriers on Cold and Las Virgenes Creeks would restore access to substantial reaches of those creeks to southern California steelhead at reduced costs. This was an on/off feature with all eight barriers removed/modified or none. The environmental benefits and reduced costs resulted in a much higher cost-benefit ratio if barrier removal/modification is included. Both the NER Plan and LPP include barrier removal. Upstream barriers are shown on Figure 4. The following barriers would be removed:

Cold Creek: CC1, CC2, CC3, CC5 (CC4 is an artificial barrier removed in 2016; CC6 is a natural barrier (large waterfall) passable at moderate flows not requiring removal/modification, CC7 is an artificial barrier removed in 2014, CC8 does not provide suitable benefits).

Las Virgenes Creek: LV1, LV2, LV3, LV4.

4.5 Preliminary Screening of Alternatives

All alternatives went through a preliminary screening process.

Preliminary screening eliminated the following alternatives:
- V-Notch and sediment bypass through dam
- Repair/restore water supply function

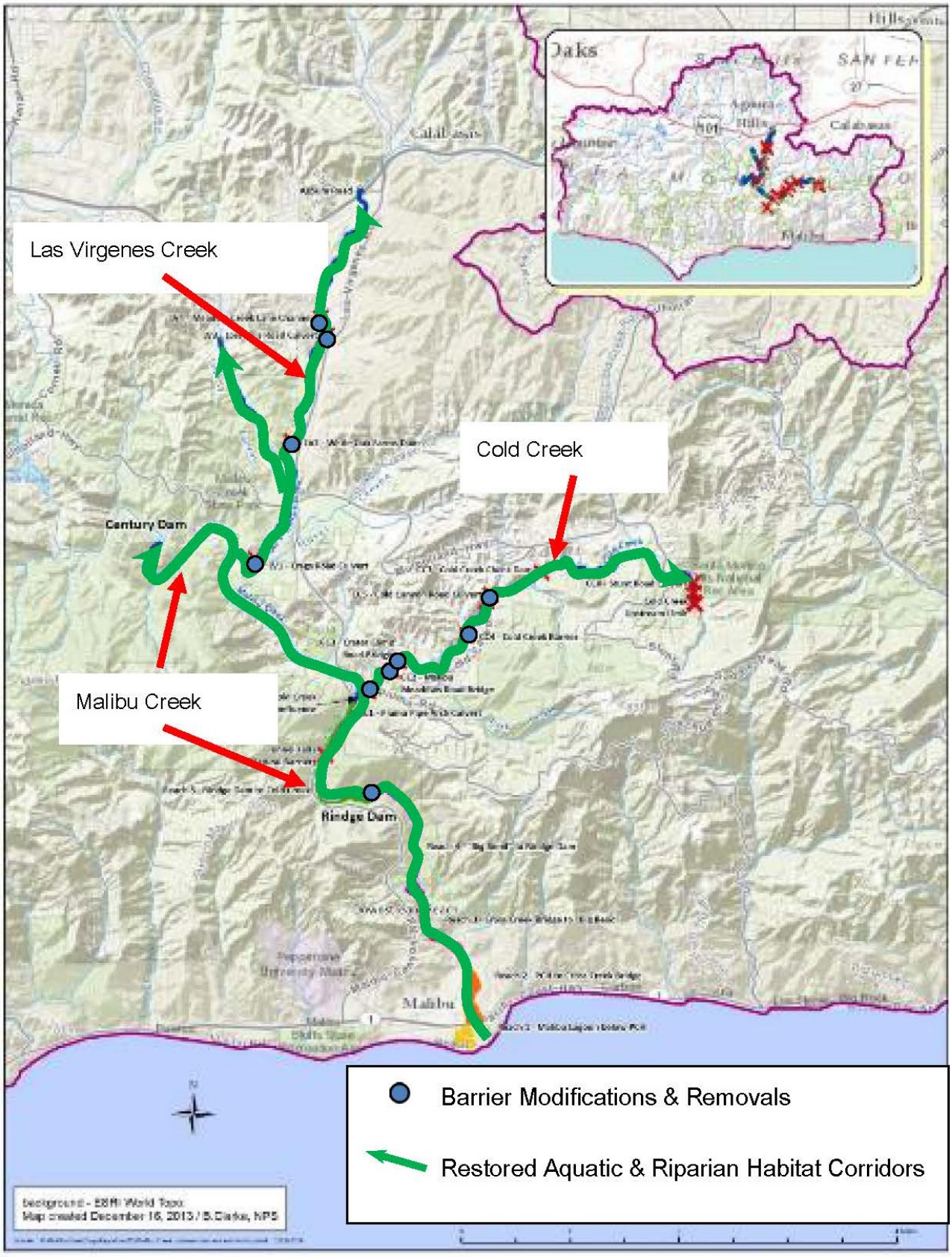

Figure 4 Restored Aquatic Habitat Connectivity - Upstream Barriers

• Fishways
• Other measures adjacent to Rindge Dam
• Restore connectivity to upstream aquatic habitat

4.5.1 V-Notch and Sediment Bypass through Dam

The v-notch measure considered removal of only the central portion of the dam arch, tapering the cut from a larger to smaller cross-section from the top to bottom of the dam. A sediment bypass through the dam was another measure to reestablish natural sediment transport at the dam site, and potentially reestablish aquatic habitat connectivity. A 40-foot diameter hole was selected based on the need for sufficient capacity for larger storm events, in alignment with a similar concept prepared by the Bureau of Reclamation (BOR) in a 1995 appraisal study. A sediment bypass around the dam using a tunnel was also considered, but was not included after it was determined that the dam had filled to capacity with sediment, and was no longer trapping additional sediment for any significant period of time.

This measure results in high costs to stabilize remaining portions of dam arch, need for stabilizing some impounded sediment, increased risk of downstream flooding and property damages due to uncontrolled releases of remaining impounded sediments in larger storms, habitat loss due to deposition below the dam. This alternative is not supported by the Sponsor, and was eliminated based on significant impacts and excessive costs. This measure also increases the risk of detrimental downstream sediment impacts to habitat and residences through uncontrolled releases of impounded sediment unless costly and difficult to design armoring of the remaining impounded sediment occurs. Therefore, this measure was eliminated.

4.5.2 Repair/Restore Water Supply Function

At the request of the Rindge family descendants and several other public interests, the USACE considered measures to restore the water supply function of the dam for water supply (municipal & firefighting), and for limited flood risk management to the Serra Canyon community and the City of Malibu. Measures associated with this action include the restoration of the spillway, at minimum, by adding new sluice gates at the top of the structure to control releases and storage capabilities. The impounded sediment would be removed mechanically from the site to one or several upland storage sites, with the possibility of some of the material being used for beach nourishment. The California Department of Safety of Dams (DSOD) requires that the dam meet current design standards if it is to be recommissioned for water supply use. The PDT assumed that removal and replacement of the existing arch and spillway would be required to meet design standards, and some allowance for fish passage would have to be incorporated into the design. This combination of measures to restore water supply does not meet any of the study objectives and was dismissed from further consideration.

This combination of measures was included initially to conceptually address comments from public members that included descendants of the Rindge family. However, they do not meet the study objectives and would require more costly investments compared to any of the other proposed alternatives. These alternative measures were eliminated early in the planning process.

4.5.3 Fishways

Five measures were evaluated to try and get migrating fish around the dam, while leaving the dam in place. None of the five were feasible as discussed below.
The step and pool fishway design considered for this study consisted of a simple series of concrete pools and weirs, located along the southern bank of Malibu Creek (road side), initially proposed with a one-foot drop every 10 feet. There is not enough space within the canyon gorge, both in regards to width and length, to accommodate such a structure. This measure was dismissed from consideration in the array of alternatives due to technical/logistical limitations.

The same fishway design combined with notching the dam arch was evaluated. The difficulty in designing around the physical constraints in the canyon, access concerns related to operations and maintenance, and added construction costs for the removal of half of the concrete arch of Rindge Dam and over half the volume of impounded sediments resulted in the measure being screened from the viable array of alternatives.

Canyon Wide Stabilization for Fish Passage includes partial removal of Rindge Dam and partial excavation of the impounded sediment to form a series of steps across the width of the canyon. The existing slope of the canyon would be modified to provide a series of gradual steps by using some of the impounded sediment as backfill for a series of stabilization structures that span the width of the canyon, with pools and weirs located near the center of each step, essentially forming a broad fish ladder. The arch portion of the dam would be notched to act as one of the stabilizing structures, and fill would be placed downstream of the dam. Stabilization structures would have to be constructed at regular intervals to restore a slope and creek gradient that supports fish passage, with resting pools and weirs. Impounded sediment would also be moved above the dam to continue the slope up the canyon until reaching a pre-dam channel elevation. The overall result is that the majority of reservoir sediment would remain. Only fine sediments would be removed from the site or stabilized in-place. This alternative provides stabilization of virtually all of the impounded sediment. The stream would be expected to eventually erode the remainder of the reservoir sediment over time during high flow events. The construction of each step would require substantial and excessively costly stabilization measures and would eliminate existing high quality aquatic habitat and was therefore dropped.

A Borland fish ladder was considered for transporting fish upstream for spawning. The Borland lift is essentially a single-species (i.e., steelhead) measure that would not easily address downstream migration of adults, would not effectively reconnect the aquatic corridor, and was unlikely to be successful for passage of juveniles. This design has a greater potential for clogs than the flume or ladder options, and optimal performance would be required during high flows; that is, at the time of least access. Given these concerns, the measure was not considered for further analysis.

Fish conduit is a measure that would involve the construction of a tunnel, a pipeline conduit for fish passage, from the base of the dam upstream to daylight leaving Rindge Dam and impounded sediments in-place. While such a structure could be designed to meet maximum flow velocities of 6.6 ft/s, the conduit would be very long (most likely in excess of 1,000 ft) and could not include any resting pools for migrating species. Sustained swimming for fish over such a length

is doubtful. In addition, it is thought that fish would likely bypass the tunnel in high flow conditions. Therefore, this measure was not considered for further analysis.

4.5.4 Other Measures Adjacent to Rindge Dam

Three other measures involving changes adjacent to Rindge Dam were evaluated. None of the three were feasible as discussed below.

Trap and haul fish is a two-way operation where juveniles would have to be captured above the dam and transported around it, as well as adults captured below the dam and released above it. Given the inaccessible nature of the dam area and need for access below and above the dam, this would be a difficult, time-consuming, and expensive operation benefiting a single species with high mortality risk for downstream migrants due to difficulty trapping during moderate to high flows. This measure was eliminated from further consideration due to logistics and impacts.

Stabilizing some of the impounded sediment in-place while also restoring an access connectivity to upstream aquatic habitat was also considered in the array of measures. Designs to allow for a channel through the impounded sediment with needed dimensions for flow conveyance, combined with the space needed for armoring and storing the impounded sediments in this topographically confined area was not deemed technically or logistically feasible. Therefore, this measure was not considered in the array of alternatives.

A bypass design was initially proposed by the PDT during early formulation, before it was confirmed that the dam is no longer trapping sediment. Sediment bypass around Rindge Dam is not needed since Rindge Dam has already reached its storage capacity.

4.5.5 Restore Connectivity to Upstream Aquatic Habitat

Measures to restore aquatic habitat connectivity above Rindge Dam and allow access to good to excellent quality upstream habitat focused on the upstream partial barriers along tributaries to Malibu Creek, including road crossings, culverts and small dams. Existing data, new field surveys and the knowledge of experts within the Technical Advisory Committee (TAC) were used to assess the quality of habitat in upstream reaches and formulate habitat connectivity restoration measures. Measures included partial or total removal of concrete aprons along creek beds at culverts and bridge crossings, removal of small dams, and associated replacement of necessary bridge crossings and utilities lines that still provide services for the watershed. The selected barriers and quality of habitat in reaches between the barriers were ranked in order of importance (report on file at USACE, Los Angeles District). Cold Creek and Las Virgenes Creek tributaries ranked high for overall habitat quality and opportunities for refuge for steelhead and other species. Measures modifying man-made partial aquatic barriers at road crossings, culverts and small dams upstream of Rindge Dam. Dark Canyon and Stokes Creek were dismissed due to relatively low quality habitat between barriers. The Project Delivery Team (PDT) and TAC made an early decision to eliminate Century Dam from further consideration due to the need to also address nearby Malibou Dam; a costly investment for little habitat gain.

4.6 Secondary Screening of Alternatives

Secondary screening was used to conduct a more detailed analysis of potential alternatives, which included the measures discussed in Section 4.5 above and in Section 4.7 below. The alternatives including removal of Rindge Dam were analyzed and considered to meet the USACE' criteria of completeness, effectiveness, efficiency and acceptability. These alternatives were carried forward into the final array of alternatives described in Section 4.7.

4.7 Final Array of Alternatives

The alternatives carried forward meet the project needs and objectives while staying within the defined project constraints. The final array of alternatives is summarized in Table 1. The period of analysis associated with all the alternative is 50 years. From the final array of alternatives, the USACE identifies the NER Plan, and USACE and CDPR identify the recommended plan (in this case, the LPP).

4.8 NER Plan Selection

The NER Plan is the plan that reasonably maximizes restoration benefits per USACE guidelines. In the absence of an approved LPP, the NER Plan is typically the recommended plan. The USACE selected Alternative 2d1 as the NER Plan for the reasons described in detail in the Draft Integrated Feasibility Report, Chapter 4. The NER Plan includes the removal of the Rindge Dam arch concurrent with the removal of the estimated 780k cy of impounded sediment, placement of the impounded sediment along the Malibu shoreline, temporarily utilizing upland Site F for some of the mostly sands (Unit 2) layer before delivery to the shore, use of the Calabasas Landfill for disposal of the nearly two-thirds of the remaining amount of impounded sediment, and modification to eight partial aquatic habitat upstream barriers on Cold Creek and Las Virgenes Creek tributaries to Malibu Creek.

4.9 Identification of the LPP

The CDPR has requested that Alternative 2b2 be selected as the LPP and the recommended plan. The LPP is the same as the NER Plan in regards to actions described for the Rindge Dam arch removal and impounded sediment area. The strategy for modification and removal of the upstream barriers is also the same as the NER plan. The LPP differs from the NER plan in the method of transport and placement of the mostly sands, using trucks and barges for nearshore placement, and by adding the removal of the Rindge Dam spillway. Although the Habitat Evaluation outputs captured by the evaluation modelare the same as those calculated for the NER Plan, the LPP has the benefit of avoiding an area of sensitive surf grass in the area of sand placement. The LPP also avoids future long term recurring impacts to steelhead critical habitat and public safety via removal of the spillway. The LPP is the Tentatively Selected Plan (TSP).

The LPP includes 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 shoreline, to the east of the pier. The use of

Table 1 - Summary Description of the Final Array of Alternatives

	Alternative 1	Alternative 2a Alternative 2c	Alternative 2b Alternative 2d	Alternative 3a Alternative 3c	Alternative 3b Alternative 3d	Alternative 4a Alternative 4c	Alternative 4b Alternative 4d
Description	No Action	Rindge Dam Arch Removal Mechanical Transport	Rindge Dam Arch Removal Mechanical Transport Upstream Barriers	Rindge Dam Arch Removal Natural Sediment Transport	Rindge Dam Arch Removal Natural Sediment Transport Upstream Barriers	Rindge Dam Arch Removal Mechanical Transport and Natural Sediment Transport	Rindge Dam Removal Mechanical Natural Sediment Transport Upstream Barriers
Alt. Summary	Rindge Dam 100-foot high arch (and spillway) would remain in-place without modification. Age of structure may be an integrity issue. Impounded sediment behind Rindge Dam to remain with some temporary deposition between storms. Risk of downstream flooding increases over time due to aggrading channel. Reach below Rindge Dam will degrade 5 to 10 feet reaching equilibrium in about 100 yrs. Approx 2 ft of deposition likely to occur in lower reaches below the Dam. Costs may be incurred to maintain dam safety and provide flood risk mgmt measures in downstream areas.	Remove Rindge Dam arch over 7-8 years while removing impounded sediment to minimize downstream adverse impacts to habitat and flood risk. Truck all 780k CY of impounded sediment to Calabasas Landfill or to shoreline/ nearshore site(s). Screen boulders and cobbles from sand delivered to the shoreline. Opens up about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 2c**: Adds spillway removal to Alt 2a features while removing arch to lessen habitat disturbance, improve safety, and aesthetic purposes. **2a1, 2c1**: shoreline placement **2a2, 2c2**: nearshore placement	Same as 2a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up a total of about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 2d**: Adds spillway removal to Alt 2b features. **2b1, 2d1**: shoreline placement **2b2, 2d2**: nearshore placement	Incrementally remove Rindge Dam arch over decades (20-100 yrs) in 5 foot lifts, waiting for impounded sediment to be naturally transported downstream with winter storm flows, repeating until structure is completely removed. Assumed timeframe for removal: 40-100 yrs. No need for trucks to transport sediment to Calabasas Landfill or beaches. Trucks needed to transport dam/ spillway concrete to landfill. Floodwalls required for increased flood risk to Serra Retreat & City of Malibu: 10 ft high and 3,100 feet long on west side & 2,700 feet long on east side, from Cross Creek Rd to PCH. After decades, reconnects about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 3c:** Adds spillway removal to Alt 3a features	Same as 3a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 3d**: Adds spillway removal to Alt 3b features.	Similar to 2a, with allowance for controlled volume of natural sediment transport during winter storm seasons over 7-8 construction timeframe. Remove Rindge Dam arch while removing impounded sediment and notch height of arch by additional 5 ft each year to allow for storms to mobilize sediment. May allow for up to 130K CY to naturally transport downstream. Truck at least 520K CY of 780k CY of impounded sediment to Calabasas Landfill and remainder to shoreline / nearshore site(s) Floodwalls required for increased flood risk to Serra Retreat & City of Malibu: 5 ft high and 3,100 feet long on the west side & 2,700 feet long on east side, from Cross Creek Rd to PCH. Opens up about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 4c**: Adds spillway removal to Alt 4a features. **4a1, 4c1**: shoreline placement **4a2, 4c2**: nearshore placement	Same as 4a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 4d**: Adds spillway removal to Alt 4b features. **4b1, 4d1**: shoreline placement **4b2, 4d2**: nearshore placement

the barge allows for more flexibility in the location for placement of mostly sands, reducing risks of habitat and species disturbances during placement activities

The 1,500 cy capacity barges (dump scows) would transport the material via tugboat downcoast and place the mostly sands in the nearshore area near, but to the east of Malibu Pier in a location that does not adversely affect submerged aquatic vegetation. Use of a barge also allows flexibility in continuing to consider placement in other areas along the Malibu Creek shoreline to minimize impacts to biological resources. Both trucks and barges would be making approximate 82-mile round-trips for each load: trucks from the Rindge Dam impounded sediment site to Ventura Harbor and back; and the dump scows from the harbor to the Malibu nearshore site and back. It is estimated that the approximate 278k cy of sands would be delivered to the nearshore area, for several months each year over a total of three construction years, while the sand-rich layer of Rindge Dam sediment is being excavated. The first and last several construction years would truck sediment from Rindge Dam directly to the Calabasas Landfill.

Unlike the NER plan, the recommended Project truck to barge approach does not require temporary use of upland storage Site F or the Malibu pier parking lot. Truck traffic through the City of Malibu is minimal for the LPP. The hauling and barging distance increases significantly for each dump cycle so the overall timeframe to complete construction takes an additional year (8 years total).

4.10 Construction Method for the LPP

The first year of construction is assumed to begin after a late spring construction contract notice to proceed. About 40k cy will be used to construct two access ramps at the upper end of the Rindge Dam impounded sediment area to provide equipment access from Malibu Canyon Road to the work site, allowing for the removal of existing mature vegetation on the surface and temporary diversion and control of Malibu Creek to allow for needed work space for mining and other actions. A temporary cofferdam about five feet in height will be constructed upstream of the southbound ramp and direct water into a series of culverts. Controls and best management practices (BMPs) will be in-place to reduce turbidity level of discharges to background levels immediately downstream of the dam. Dewatering wells will be installed in the impounded sediment. Well water will be conveyed immediately downstream of the dam and released into Malibu Creek after BMPs ensure that turbidity and other constituents are maintained at appropriate levels. Wells will be designed with casings that can withstand winter storm flows. Each well casing will be protected in-place prior to each storm season during construction. Any remnants of the wells will be removed at the end of construction.

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.

Sediment mining will begin to remove the top layer of mostly gravels and boulders (approximately10 foot depth), with some of the material used for completion of the ramps,

hauling the remaining Unit 1 layer to the Calabasas Landfill along with the surface vegetation. The first lift, the horizontal cut in the dam arch, will be removed in order to leave the concrete arch at the level of the remaining impounded sediment by October of the first year, repeating this action each year of construction. The site will be cleared of crews and equipment for the winter season, with the second year of construction beginning the next spring after the winter storm season.

The second to fourth year of construction will primarily be associated with removal of the Unit 2 sands with 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 shoreline, to the east of the pier. The 1,500 cy capacity barges (dump scows) would transport the material via tugboat downcoast and place the sands in the nearshore area near, but to the east of Malibu Pier in a location that does not adversely affect submerged aquatic vegetation. Both trucks and barges would be making approximate 82-mile round-trips for each load: trucks from the Rindge Dam impounded sediment site to Ventura Harbor and back; and the dump scows from the harbor to the Malibu nearshore site and back. This cycle of activities will be repeated for these three years.

The fourth through seventh years of construction include the removal of the Unit 3 silts and clays with delivery to the Calabasas Landfill. The final year will complete site clean-up, the revegetation of creek slopes exposed during the mining, and removal of one ramp and partial removal of the remaining ramp to limit future access to the site to monitoring and adaptive management activities. The TSP includes removal of the Rindge Dam spillway.

About 10,000 cy of impounded sediment is estimated to remain in the impounded sediment area after construction around the pre-dam bedrock outcrops and boulders exposed by mining to the former (pre-dam) creek bed elevation. This material is expected to be naturally flushed to downstream reaches and the ocean with much greater volumes of sediment generated from the watershed during early post-construction storm runoff events.

The LPP also includes removal or modification of eight barriers upstream of Rindge Dam: four along Las Virgenes Creek (LV1-LV4) and four along Cold Creek (CC1-3, CC5). Construction activities will begin after the first several year of construction at Rindge Dam, and will conclude within the estimated construction timeframe for completion of work at Rindge Dam. Barriers CC1 and CC5 are owned by Los Angeles County, and CC2 and CC3 are privately owned. LV1-2 are owned by CDPR and LV3-4 are owned by Los Angeles County. Waste material from these work sites will be transported by truck to the Calabasas Landfill.

5.0 ENVIRONMENTAL COMMITMENTS

5.1 Plans

Environmental Protection Plan

Prior to construction the construction contractor shall prepare an Environmental Protection Plan (EPP). The plan shall address protection of environmental resources including water quality, noise, air quality, hazardous substances incorporating all of the individual plans that follow as well as the environmental commitments in the following section.

Water Quality Monitoring Plan

Prior to construction the construction contractor shall prepare the Water Quality Monitoring Plan that will include weekly monitoring at the nearshore receiver sites for salinity, pH, temperature, dissolved oxygen, and light transmissivity; monthly water samples will be taken and analyzed for total dissolved solids.

Stormwater Pollution Prevention Plan

Prior to construction the construction contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) will be prepared to address potential impacts to stormwater from construction equipment, construction crews, and construction practices.

Fish Rescue and Relocation Plan

Prior to construction the construction contractor shall prepare a fish rescue and relocation plan will be developed prior to commencing work in areas where impacts to special status fish species may occur.

Cultural Resources Monitoring Plan

Prior to construction the construction contractor shall prepare a monitoring plan including monitoring procedures that is approved before construction is initiated. The monitoring would be conducted by a qualified archaeologist who would monitor earth removal activities as needed in Rindge Reservoir, and construction staging set-up at the Sheriff's Overlook construction staging site. The plan would also include provisions for Historic American Engineering Record (HAER) Documentation of the Rindge Dam and the Associated Rindge Water Pipeline and for Historic American Engineering Record (HAER) and Historic American Building Survey (HABS) of the White Oak Dam and associated Powerhouse (upstream barrier LV-2).

Transportation Management Plan

During the design phase, a Transportation Management Plan (TMP) will be prepared to address any transportation related issues. This plan will be circulated to the City of Calabasas, City of

Malibu, Los Angeles County, and Caltrans for review to minimize temporary traffic impacts during construction.

Erosion-Control and Spill Response Plan

Prior to construction the construction contractor shall prepare an erosion-control and spill response plan will be prepared and implemented to include erosion-control best-management practices during construction, including re-vegetation 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, dewatering sediments, diverting water around construction through pumping and/or piping, development of slope stability measures for groundwater saturation, construction ramp stability measures, and erosion-control measures at disposal sites.

Hazardous Substances Control Plan

Prior to construction the construction contractor shall prepare a Hazardous Substance Control and Emergency Response Plan. The plan will develop an emergency response plan for the safe cleanup up accidental hazardous substance spills. To reduce the potential for spills during construction and equipment maintenance the plan will include hazardous materials handling procedures. Areas where refueling, equipment maintenance activities, and storage of hazardous materials, will be identified in the plan.

Traffic Control Plan on Surface Streets

Prior to construction the construction contractor shall prepare a traffic control plan. The plan will address the safe exit and entry of trucks and construction equipment onto surface streets, including the use of flagging personnel where needed.

Contingency Plan for Contaminated Soil

Prior to the initiation of construction the contractor will develop a contingency plan for the detection and removal of contaminated soil that may be encountered during construction.

Safety Plan

Prior to construction the construction contractor shall prepare a safety plan to restrict public access in the construction area.

5.2 Measures

Measures identified below are as outlined in the Draft IFR circulated for public and agency review, with adjustments for clarity or to address comments received on the Draft IFR. The measures may be further clarified in the Final IFR but are not anticipated to change substantively.

Earth Resources

ER-1. Stabilization of Slopes. Stabilization measures to the extent practical will be implemented to protect Malibu Canyon Road, and other areas as determined necessary from landslide and soil destabilization effects that may be produced by the proposed project as determined by a slope stability exploration and geotechnical evaluation to be conducted prior to project construction.

ER-2. Implement Best Management Practices (BMPs). Prior to construction the construction contractor shall prepare an erosion-control and spill response plan will be prepared and implemented to include erosion-control best-management practices during construction, including re-vegetation 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, dewatering sediments, diverting water around construction through pumping and/or piping, development of slope stability measures for groundwater saturation, construction ramp stability measures, and erosion-control measures at disposal sites.

ER-3 Sediment Analysis. Additional sediment grain size analysis would be performed prior to excavation of the sand layer to confirm the material grain size for beach nourishment by placing compatible sands into the nearshore placement site. Additionally, quality control and quality assurance measures would be identified during the Preconstruction Engineering and Design (PED) phase and implemented during construction to ensure the material that is identified as beach quality sand is the material that is taken to the nearshore site.

Water Resources and Water Quality

WR-1. Best Management Practices During Construction. Prior to construction a stormwater pollution prevention plan (SWPPP) will be prepared by the construction contractor 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.

WR-2. Water Quality Monitoring During Nearshore Placement. Appropriate water quality monitoring would occur during sediment placement to ensure no significant impacts to water quality occurred.

Biological Resources

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-5 Vegetation Removal Outside of Nesting Season. 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 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.

BIO-6 Construction Speed Limit. Construction crews will be required to maintain a 15-m.p.h. speed limit on all unpaved roads to reduce the chance of wildlife being harmed if struck by construction equipment.

BIO-7 Vehicle Travel During Daylight Hours. Project-related vehicle travel and construction activities will be limited to daylight hours, as wildlife and some special-status species could be found on roadways primarily at night.

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 prior to construction by the construction contractor. 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 special status 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 special status species during construction activities associated with the proposed project; and
o A point of contact if special status 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 special status 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.

BIO-11 Special status plant species. Pre-construction surveys at the appropriate time of year will determine of any are present in the construction areas. If present, conservation measures would planned and conducted in consultation with the USFWS and CDFW to mitigate impacts including relocation or collection of propagules of perennial species, collection of propagules of annual species, or waiting for seed set mitigation.

Cultural Resources

CR-1: Archaeological Monitoring of Earth Moving Activities at Rindge Reservoir. Because the reservoir behind Rindge Dam is filled with 780,000 cy in sediments, it is unknown whether archaeological sites were buried during sedimentation. Therefore, a qualified archaeologist and/or Native American monitor shall monitor earth removal activities as needed where the native stratigraphy (i.e. along the canyon walls and bottom) becomes exposed in order to locate, record and assess impacts to any buried archaeological resources. As the project intent is solely to remove sediments built up since the dam was constructed, no further excavation should be required once the originally topography is reached. Therefore, implementation of this archaeological monitoring requirement would reduce any potential impacts to unknown archaeological deposits to a less than significant level.

CR-2: Archaeological Monitoring of Beach Nourishment at Surfrider Beach. Not applicable, sand will not be placed at Surfrider Beach under provisions of the LPP.

CR-3: Completion of Historic American Engineering Record (HAER) Documentation of the Rindge Dam and the associated Rindge Water Pipeline (at the dam). Prior to removal, a complete record of the Rindge Dam and the associated Rindge Water Pipeline prepared according to HAER program guidelines, as administered under the NPS is recommended, to be implemented in consultation with the SHPO and consulting parties. Only those sections of the Pipeline shall be removed as necessary to allow for removal of the dam and restoration of the creek channel; all other intact sections of Pipeline shall remain in place.
Note: CR-3 in the Draft IFR was deleted as material will no longer be placed at Malibu Pier. The remaining measures were renumbered.

CR-4: Incorporation of Interpretive Exhibits and Restoration of the Sheriff's Honor Camp site. Following project completion, the Sheriff's Honor Camp site will be restored as an interpretive road turnout with overlooks of the Rindge Dam site and Malibu Canyon. Interpretive exhibits explaining the historical significance of Rindge Dam and the historic and prehistoric significance of the Malibu Canyon area will be developed and installed in consultation with CDPR interpretive and cultural resource staff. A qualified archaeologist will monitor construction of the interpretive overlook in order to ensure that there are no impacts to historic properties.

CR-5: Completion of Historic American Engineering Record (HAER) and Historic American Building Survey (HABS). During the project design phase, all feasible measures for minimizing the portion of the dam requiring removal in order to meet project objectives shall be explored. Prior to dam removal, in whole or in part, a complete record of the White Oak Dam and associated Powerhouse will be prepared according to HAER program guidelines, as administered under the NPS.

Aesthetics

AES-1. Reduce Visibility of Construction Activities and Construction Related Equipment. Construction activities and construction related equipment, including staging areas, laydown areas, stockpiles, conveyors, and equipment storage will be temporarily screened throughout construction when visible from roads, trails, scenic overlooks, residences to the extent practicable. Screening will consist of temporary screening fences with colors and materials to reflect the natural surroundings.

AES-2. Blend Restoration Features with Surrounding Areas. Slopes will be constructed to match existing slopes. A revegetation plan will be developed with a native plant palette. Areas visible from Malibu Canyon Road and/or residences will be planted with a combination of fast growing native plants and/or larger native plants to obscure scarring from construction activities. The re-vegetation plan should include a plant palette and proposed sizes, maintenance procedures during establishment period, including irrigation, if any, and replanting of dead vegetation. All areas disturbed by construction, including cleared areas, shall be restored to their original condition or an improved condition.

AES-3. Incorporate Aesthetic Considerations into Road Improvement Plans. The contractor will develop road improvement plans for required reconstruction or maintenance incorporating the use of aesthetic features. Plans will be submitted to the USACE for review and approval prior to implementation. Aesthetic features include, but are not limited to, drainage, slopes, retaining walls, and screenings to match surroundings.

AES-4. Incorporation of Interpretive Signs into Restoration of the Sheriff's Overlook. Interpretive signs featuring the historical significance of Rindge Dam will be installed as a component of the restoration efforts at the Sheriff's Overlook. Plans for the interpretative signs will be designed by the CDPR and USACE.

AES-5. Minimize Stockpiling of Sand on Beach to Prevent Obstruction of Coastal Views. Stockpile maximum heights will be kept to a minimum to avoid obstruction of coastal views.

AES-6. Minimize Construction Equipment Storage Areas at Beach Replenishment Site. Construction equipment storage areas will be minimized to reduce temporary disturbances to coastal views. If public parking areas are used for construction equipment storage, temporary removal of parking spaces will be minimized in order to maximize public access to coastal scenic areas.

Transportation

T-1. Transportation Management Plan. During the design phase, a Transportation Management Plan (TMP) will be prepared to address any transportation related issues. This plan will be circulated to the City of Calabasas, City of Malibu, Los Angeles County, and Caltrans for review and approval to minimize temporary traffic impacts during construction. The TMP will cover all aspects of construction and will include haul routes, material hauling activities to the landfill and beaches, details of public parking closure at the beaches, all traffic control measures required including traffic signals, and all aspects of construction necessary during construction of the project. This plan would be developed by a registered Civil or Traffic Engineer who would be qualified to perform traffic studies and is familiar with the project area.

T-2. Road Repair. A road repair mitigation plan will be prepared prior to construction. The construction contractor will repair any damage or changes to neighboring roadways that occurred as a result of construction. The construction contractor will coordinate repairs with the appropriate public agencies to ensure that any damage is properly repaired.

Noise

NOISE-1. Noise Ordinances. The construction contractor will obey all local noise ordinances. Title 12 Section 12.08.440 of the Los Angeles County (LAC) code, restricts construction activities between the hours of 7:00 a.m. and 8:00 p.m. Construction is prohibited on Sundays and legal holidays. Construction and demolition activities that occur in LAC are anticipated to occur only during the day.

NOISE-2. Heavy Equipment Operations. The construction contractor will stagger heavy equipment operations to the maximum extent practicable, but in a manner as to not interfere with the construction schedule. Noise reduction will be achieved by reducing the numbers and types of equipment that are operating at the same time. Unnecessary idling of heavy equipment will be limited to five minutes (see AIR-1). Standard masonry saw blades will be replaced with "Damped" masonry saw blades.

NOISE-3. Electrically Powered Tools. The construction contractor will use electrically powered tools when possible.

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-5. Terrain Maximization. Maximization of surrounding terrain, such as a canyon, to reduce **noise** levels will occur.

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.

NOISE-7: Jake Braking. The use of engine or jake braking will be prohibited.

Air Quality and Global Climate Change

AIR-1: Minimize use and trips of heavy equipment to the maximum extent practicable. Limit unnecessary idling of heavy equipment to five minutes.

AIR-2: Maintain and tune engines per manufacturer's specifications to perform to EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies.

AIR-3: Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.

AIR-4: Prohibit tampering with engines and require continuing adherence to manufacturer's recommendations.

AIR-5: A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization for each applicable unit of equipment.

AIR-6: Prior to construction, facility surveys shall be performed in compliance with SCAQMD Rule 1403 – Asbestos Demolition/Renovation Activities. During construction, all applicable requirements contained in SCAQMD Rule 1403, to include training, reporting, handling, and disposal requirements, will be implemented during construction.

Safety and Hazards

HAZ-1. Reduce risk of wildfires. The construction contractor will develop a fire prevention and response plan appropriate for the use of heavy equipment in a high fire hazard area, approved by the USACE, the CDPR Department, and the Los Angeles County Fire Department, prior to the initiation of construction.

HAZ-2. Hazardous Substances Control Plan. The construction contractor will prepare a Hazardous Substance Control and Emergency Response Plan. The plan will develop an emergency response plan for the safe cleanup up accidental hazardous substance spills. To reduce the potential for spills during construction and equipment maintenance the plan will include hazardous materials handling procedures. Areas where refueling, equipment maintenance activities, and storage of hazardous materials, will be identified in the plan.

HAZ-3. Traffic Control Plan on Surface Streets. The construction contractor will prepare a traffic control plan. The plan will address the safe exit and entry of trucks and construction equipment onto surface streets, including the use of flagging personnel where needed.

HAZ-4. Beach Safety Plans. The construction contractor will prepare a beach safety plan. The plan will address fencing around stockpiles and construction equipment, closures of portions of parking lots during sand delivery, and closures of beach areas during spreading operations to ensure the safety of the public.

HAZ-5. Contingency Plan for Contaminated Soil. Prior to the initiation of construction the contractor will develop a contingency plan for the detection and removal of contaminated soil that may be encountered during construction. This plan will be approved by the USACE prior to the initiation of construction.

Utilities

U-1. Prior to construction during the PED phase, utility locations within the vicinity of each project feature shall be identified and verified, in coordination with each utility provider. If relocation of a utility line is determined to be required and cannot be avoided, the appropriate utility service provider would be consulted to sequence construction activities to avoid or minimize interruptions in service. Any relocation or modification to utilities shall comply with permit conditions and such conditions shall be included in the contract specifications.

U-2. If utility service disruption is necessary, residents and businesses in the project area would be notified a minimum of two to four days prior to service disruption through local newspapers, and direct mailings to affected parties.

6.0 CONSISTENCY WITH PROVISIONS OF THE CALIFORNIA COASTAL ACT

The evaluation of the project with respect to the California Coastal Act is described in the subsections below.

6.1 Public Access and Recreation

Section 30210:
In carrying out the requirements of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.
Section 30211:
Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212:
(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:
(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,
(2) adequate access exists nearby . . .

Section 30213:
Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred....

Section 30220:
Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Project Area Access and Recreation Resources.

Sand placement in the nearshore site would provide minor, short-term benefits to area beaches temporarily widening them. Placement activities will occur adjacent to, but far enough away from the pier to not endanger the pier structure or adversely affect recreational uses on the pier itself. Impacts from nearshore placement would be very minor as each event is a short event occurring infrequently. Impacts to diving, fishing, surfing, and/or boating are expected to be negligible.

Sheriff's Overlook is closed to public access due to the potential use by people attempting to illegally access Rindge Dam and associated life safety concerns, as well as potential damage to structures and habitat. Within the immediate area surrounding Rindge Dam there are no formal hiking trails and limited recreational use due to limited accessibility, although trespassing and illegal recreation does occur. Closure of this area during construction would have minimal or no impact on recreation resources as other portions of Malibu Creek State Park would remain open during construction. As a result of the closure, the project will not increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated due to the existing limited usability of the area for recreational purposes. Upon completion of construction activities any debris or equipment located at Sheriff's Overlook would be cleared from the area. At the end of construction, the site will be used as a turnout for viewing the canyon, with interpretive signage about the dam and its historical significance. This site would be similar, but larger than, other existing turnouts along Malibu Canyon Road. All other existing turnout areas along Malibu Canyon Road would remain open throughout construction.

The removal of the eight upstream barriers would not result in any impacts to recreation during construction.

6.2 Marine Resources/Beach Nourishment/Dredging and Filing

Sections 30230 and 30231 of the Coastal Act require the protection of marine resources and biological productivity. These sections provide:

Section 30230:
Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine

organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231:
The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface water flow,

Section 30233(a) of the Coastal Act applies to dredging and filling activities and provides in relevant part:
(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: …
(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas. …

Section 30233(b) encourages beach replenishment, requires disposal to occur in a manner protecting sensitive habitat, and provides:
(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

Marine Resources/Beach Nourishment/Dredging and Filing

The nearshore and beach placement sites were surveyed by the USACE to identify habitat types present and to avoid placement into any sensitive habitats. Figure 5 shows the results of this survey overlain with past survey data in the study area. The nearshore placement area was selected on the basis of its sandy bottom habitat and ability to fed sand into downcoast beaches provided the beneficial reuse of beach nourishment.

Placement of sands in the near-shore placement site could result in temporary increase in turbidity and suspended solids and may decrease the amount of dissolved oxygen near the placement site, thus affecting fish and other marine life within the area. Motile species are expected to relocate out of the area until placement activities are finished, and placement of beach compatible materials in the near shore area will not substantially impede the movement or migration of any native fish or wildlife (Criteria 4). Benthic marine populations would be buried, but would be expected to recolonize and recover. Therefore, no substantial loss to the population of any fish, wildlife, or vegetation will occur as the result of beach placement (Criteria 5). Adjacent beaches would experience less erosion due to elevated sand levels in the near shore while some of the placed sand may actually migrate onto adjacent beaches increasing beach

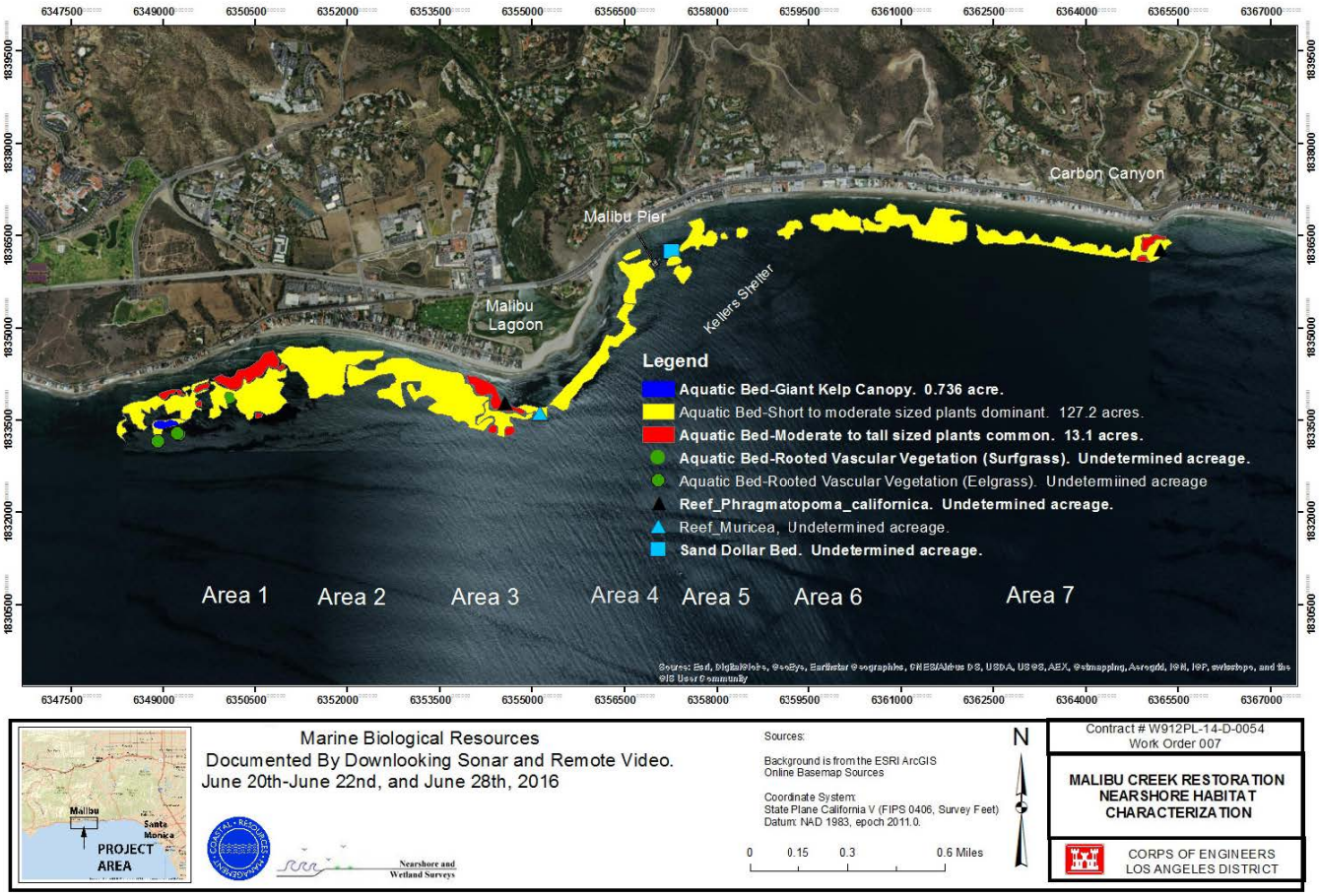

Figure 5 Malibu Nearshore Habitat Characterization

widths down coast of the placement site, which will beneficially affect shore birds and benthic organisms in the long run as well as California grunion. Therefore, nearshore placement of sediment will not result in a substantial loss in overall ecosystem biodiversity (Criteria 8) and will not result in an adverse effect or net loss in habitat value of any sensitive biological habitats (Criteria 42 2).

6.3 Water Quality

The Coastal Act provides:

Section 30230:
Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231:
The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Water Quality

The removal of Rindge Dam and the removal/modification of eight upstream barriers would improve long-term water quality in Malibu Creek by removing a major fish barrier and restoring the Dam area to a natural riparian habitat, allowing natural riverine processes to re-establish. Fish barriers are currently listed by the Regional Water Quality Control Board (RWQCB) as a water quality impairment on Malibu Creek.

Construction-related turbidity and spill-related impacts would have the potential to occur during construction and over the winter season during the period of Dam removal. Construction equipment and the dewatering system would be removed from the Dam site prior to the winter season. Water quality will be monitored during construction and adaptive Best Management Practices (BMPs) implemented to address impacts that may arise.

6.4 Land Resources

The Coastal Act provides:

Section 30240:
(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

Land Resources

Short-term impacts to riparian vegetation at the dam and sediment impound site, as well as the eight upstream barriers, is expected to be adverse. However, environmental commitments include the revegetation of these areas with native plant species resulting in an overall improvement due to the removal of any non-native plant species during construction.

Placement of sands in the nearshore area adjacent to Malibu Pier would result in minor, short term impacts as the placement site is located in an area of unvegetated sandy bottom. These areas generally recover quickly and the added sand could provide benefits by widening nearby beaches providing additional habitat to shore birds.

The USACE finds that the proposed project is consistent with the marine resources, beach nourishment, and dredging and filling policies of the Coastal Act (Section 30240).

6.5 Archeological Resources

Section 30244:
Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

Archeological Resources

Avoidance measures and implementation of environmental commitments described above will reduce impacts to a less than significant level for four of the six identified cultural resources potentially affected by the LPP. Although proposed mitigation measures for documentation and interpretation will lessen the significant impacts on the Rindge Dam, complete demolition of this resource still constitutes a Class I significant effect on the environment, per 14 CCR 15126.4(b)(2). In addition, removal of White Oak Dam (upstream barrier LV-2) would constitute an adverse effect on a historic property under Section 106 of the NHPA, a significant impact under NEPA, and a significant impact on an historical resource under CEQA (Criteria 1).

The following summary was taken from the Draft Integrated Feasibility Report:

5.5.4 Tribal Consultation Summary

On May 6, 2013, the USACE requested via fax, a list of Native American groups and individuals associated with the APE vicinity from the NAHC. The NAHC provided the list via emailed letter on May 7, 2013. The letter provided by the NAHC also included the results of a SLF search conducted for the APE and indicated that Native American cultural resources have not been identified within the APE. A revised list was requested and received via email on March 29,

2016. The 2016 letter provided by the NAHC noted that sites on the Malibu Beach quadrangle may be impacted by the project. A California Assembly Bill 52 (AB52) notification was also provided by CDPR for one Tribe.

On April 13, 2016, the USACE mailed a consultation meeting invitation for a meeting on April 29, 2016, to the Native American groups and individuals indicated by the NAHC. CDPR called individuals on the list on April 22, 2016 to provide a reminder about the meeting. The USACE made follow-up calls and sent reminder emails on April 25 and April 27, 2016 regarding the meeting to everyone on the NAHC list.

An initial Tribal Consultation Meeting was held on April 29, 2016; representatives from the Santa Ynez Band of Chumash Indians, Wishtoyo Chumash Foundation, and the Tongva Ancestral Territorial Tribal Nation attended in person or via teleconference.

Summary of Native American Consultation
Native American consultation conducted to date strongly indicates that the Malibu Ecosystem Restoration Project area should be considered sensitive for Native American resources. Consultation under Section 106 of the NHPA, CEQA, and USACE and CDPR Tribal Consultation policies is ongoing.

Avoidance measures and environmental commitments described above were discussed at the Tribal Consultation Meeting and allays many of the concerns expressed by attendees regarding potential artifacts that may be found within the impounded sediments.

The USACE finds that the proposed project is consistent with the archeological resources policies of the Coastal Act (Section 30244).

7.0 SIMILAR PROJECTS THAT RECEIVED CALIFORNIA COASTAL COMMISSION APPROVAL

Matilija Dam Ecosystem Restoration Project

The USACE, in September 2004 prepared a Final EIS/EIR for removal of Matilija Dam. Removal of Matilija Dam would eliminate a barrier to fish passage on Matilija Creek and facilitate the migration, spawning, and rearing of endangered southern steelhead. Accumulated sediment would be removed or re-configured to improve the Matilija Creek flow regime and ultimately restore Matilija Creek to a more natural pre-dam streambed configuration. On October 14, 2004, by a unanimous vote, the California Coastal Commission concurred with the consistency determination (CD-O53-04) for the removal of Matilija Dam. The Commission found the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

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Filed:	10/17/17
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75th Day:	12/31/17
Extended to:	3/13/18
Staff:	L. Simon-SF
Staff Report:	2/15/18
Hearing Date:	3/9/18

STAFF REPORT: REGULAR CALENDAR

Consistency Determination No.: **CD-0006-17**

Federal Agency: **U.S. Army Corps of Engineers**

Location: Rindge Dam on Malibu Creek and nearshore waters downcoast of Malibu Pier, Los Angeles County (**Exhibits 1 and 2**)

Project Description: Removal of the Rindge Dam arch and spillway on Malibu Creek; excavation and removal of an estimated 780,000 cubic yards of sediment impounded behind the dam; transportation by truck of an estimated 278,000 cubic yards of clean sandy sediments to Ventura Harbor and then transport by barge for disposal in nearshore waters downcoast of Malibu Pier; transportation by truck of remaining excavated sediments to the Calabasas Landfill; and modification or removal of aquatic habitat barriers on Cold Creek and Las Virgenes Creek upstream of the dam.

Staff Recommendation: Concurrence

SUMMARY OF STAFF RECOMMENDATION

The U.S. Army Corps of Engineers has submitted a consistency determination for the Malibu Creek Ecosystem Restoration Project in Malibu Creek State Park, Los Angeles County. The central feature of the project is the removal of the Rindge Dam and spillway on Malibu Creek, three miles upstream from the Pacific Ocean, and the concurrent removal of an estimated 780,000 cubic yards of sediment currently impounded behind the dam. Approximately 278,000 cubic yards of clean sandy sediments would be placed in the nearshore waters downcoast of Malibu Pier, and the remaining sediments transported to the Calabasas Landfill. In addition, eight aquatic habitat barriers on Cold and Las Virgenes creeks, upstream tributaries to Malibu Creek, would be modified. The Corps estimates that should the project be authorized and funded by Congress, project construction would commence in 2025 and last approximately eight years.

Construction of the project will result in the loss of riparian and other environmentally sensitive habitat (ESHA) that has developed on the surface of the impounded sediment reservoir. However, removal of the dam and sediment will restore that buried segment of Malibu Creek, improve the aquatic and riparian habitat in stream reaches above and below Rindge Dam, and provide spawning and rearing habitat for the endangered southern California steelhead. The project design includes water quality protection measures, no net-loss of environmentally sensitive habitat, and restoration of all habitat areas disturbed during construction. The restoration project is an allowable use and the least environmentally damaging alternative for restoring Malibu Creek aquatic and riparian habitat, and protects and restores water quality in the project area. The staff therefore recommends that the Commission find the project consistent with the water quality, stream, and ESHA policies of the Coastal Act (Sections 30231 and 30233).

Over a three-year period, the project would place in the nearshore zone near the mouth of Malibu Creek approximately 278,000 cubic yards of clean sandy sediments trapped behind Rindge Dam. Removal of the dam and the impounded sediment reservoir would restore a more natural sediment transport regime in Malibu Creek. The sediments are suitable for nearshore placement, and additional testing to reconfirm suitability will take place during the three-year period of sand excavation. The nearshore placement zone was selected to avoid sensitive marine habitats and monitoring during placement will ensure that those habitats are protected. The project is designed to not adversely affect the hydrodynamics of and the marine resources within Malibu Lagoon. The sands will be placed in the nearshore zone in water depths allowing the sands to eventually move shoreward and downcoast. The staff therefore recommends that the Commission find the project consistent with the marine resource and sand supply policies of the Coastal Act (Sections 30230, 30231, and 30233).

Rindge Dam and the impounded sediment reservoir are within Malibu Creek State Park, however the immediate vicinity surrounding this area contains no designated hiking trails or recreational areas due to limited accessibility and public safety restrictions at the dam and spillway. Overall, the restoration of Malibu Creek and its tributaries, and restoration of a more natural sediment supply to downcoast beaches, would benefit public recreation. Nearshore placement of excavated sands is designed to avoid adversely affecting surfing areas upcoast at Surfrider Beach and Malibu Point. The staff therefore recommends that the Commission find the project consistent

with the public access and recreation policies of the Coastal Act (Sections 30210, 30213, 30220, and 30223).

The project holds the potential to create two types of geologic hazards: slope instability during and after excavation of the impounded sediments behind Rindge Dam, and increased downstream flood risks after removal of the dam and impounded sediment. The project includes the incremental removal of the dam and impounded sediments over an eight-year period, and a procedure for future Commission review of potential slope stabilization and mitigation measures. The multi-year undertaking will allow the Corps to monitor the downstream effects of dam and sediment removal, and make adjustments to the project and/or implement flood control measures should unanticipated project effects require such measures. The project includes a procedure for Commission review and approval of future slope stabilization measures that will be developed during the Pre-Construction Engineering and Design phase of the project. The staff therefore recommends that the Commission find the project consistent with the geologic hazard policies of the Coastal Act (Section 30253).

Project excavation of impounded sediments behind Rindge Dam and construction activities at the Sheriff's Overlook site along Malibu Canyon Road hold the potential to affect archaeological resources associated with the Chumash and Gabrielino/Tongva people. The project includes archaeological resource protection and mitigation measures, which will be implemented in coordination with Chumash and Gabrielino/Tongva representatives. Consultation with the State Historic Preservation Officer required under Section 106 of the National Historic Preservation Act is ongoing and will continue through final project design. The staff therefore recommends that the Commission find the project consistent with the archaeological resource policy of the Coastal Act (Section 30244).

The staff therefore recommends that the Commission **concur** with the U.S. Army Corps of Engineers' consistency determination CD-0006-17. The motion and resolution are on Page 5 of this report. The standard of review for this consistency determination is the Chapter 3 policies of the Coastal Act.

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EXHIBITS

I. FEDERAL AGENCY'S CONSISTENCY DETERMINATION

The U.S. Army Corps of Engineers has determined the project consistent with the California Coastal Management Program.

II. MOTION AND RESOLUTION

Motion:

*I move that the Commission **concur** with consistency determination CD-0006-17.*

Staff recommends a **YES** vote on the motion. Passage of this motion will result in a concurrence in the determination of consistency and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution:

*The Commission hereby **concurs** with consistency determination CD-0006-17 by the U.S. Army Corps of Engineers on the grounds that the project is fully consistent, and thus consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program.*

III. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The U.S. Army Corps of Engineers ("Corps") proposes to implement the Malibu Creek Ecosystem Restoration Project in the Malibu Creek watershed in the Santa Monica Mountains and the nearshore waters downcoast of Malibu Lagoon in Los Angeles County (**Exhibits 1 and 2**). The Corps submitted the subject consistency determination for the Locally Preferred Plan (LPP), also referred to as Alternative 2b2, and described in extensive detail in the January 2017 *Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report (IFR) with Environmental Impact Statement/Environmental Impact Report (EIS/EIR), Los Angeles and Ventura Counties, California* [*DIFR/EIS/EIR*].

Malibu Creek 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 (SMMNRA), managed by the National Park Service. Primary tributary flows into Malibu Creek in the lower portion of the watershed are from Las Virgenes Creek and Cold Creek. The majority of the streambed in the area of study remains unaltered (i.e., is not armored with stone or concrete on bank or bed), although at times the natural meanders of the creeks are constricted by roads, culverts, and other development. The project area is largely located in Malibu Creek State Park, owned and managed by the California Department of Parks and Recreation (CDPR).

The central feature of the restoration project is the removal of the Rindge Dam arch and spillway on Malibu Creek, located in the coastal zone three miles upstream from the Pacific Ocean, and the concurrent excavation of an estimated 780,000 cubic yards (cu.yds.) of sediment currently impounded behind the dam over an upstream distance of one-half mile (**Exhibits 3 and 4**). Approximately 278,000 cu.yds. of excavated sediments would be placed in nearshore waters downcoast of Malibu Pier, and the remaining sediments transported to the Calabasas Landfill (**Exhibits 5 and 6**).

In addition, aquatic habitat barriers on Cold Creek (four road crossing culverts) and Las Virgenes Creek (three road crossing culverts and one check dam), both of which are upstream tributaries to Malibu Creek, would be modified under the proposed project (**Exhibits 7 and 8**). Various measures were formulated for barrier modifications to allow for restoration of partial or complete aquatic habitat connectivity while ensuring the intended purpose of the barriers. As a result, the removal of Rindge Dam would restore 8.5 miles of aquatic habitat connectivity on Malibu Creek (between the Pacific Ocean and Century Dam (located farther upstream of Rindge Dam)), and barrier modification would restore an additional 9.5 miles of aquatic habitat along Cold Creek and Las Virgenes Creek.

The proposed project includes the following elements:

> ***Construction Staging.***
> *The former Sheriff's Honor Camp site (Sheriff's Overlook), located adjacent to Malibu Canyon Road about 200 vertical feet above Rindge Dam, will be used throughout construction as a temporary construction staging area during the entire duration of the project construction, used for oversight and management of the dam and impounded sediment removal activities. This staging area is expected to include trailers, vehicular parking and equipment storage. After construction is completed, the site would be restored and used as one of the turnout areas available to vehicles travelling northbound along Malibu Canyon Road for short-term parking and a scenic overlook for viewing of the creek and canyon area. At the conclusion of the staging use, several signs about the site history (Rindge Dam) and the ecosystem restoration project are proposed to be installed at the site. Any construction work taking place at this site shall avoid all historic features related to the honor camp . . . Other temporary staging areas will be used during construction for storage and temporary disposal areas and at the upstream barriers.*
>
> ***Site Preparation.***
> *About 40k cy will be used to construct two access ramps at the upper end of the Rindge Dam impounded sediment area to provide equipment access from Malibu Canyon Road to the work site, allowing for the removal of existing mature vegetation on the surface and temporary diversion and control of Malibu Creek to allow for needed work space for mining and other actions. A temporary cofferdam about five feet in height will be constructed upstream of the southbound ramp and direct water into a series of culverts. Controls and best management practices (BMPs) will be in-place to reduce turbidity level of discharges to background levels immediately downstream of the dam. Dewatering wells will be installed in the impounded sediment. Well water will be*

conveyed immediately downstream of the dam and released into Malibu Creek after BMPs ensure that turbidity and other constituents are maintained at appropriate levels. Wells will be designed with casings that can withstand winter storm flows. Each well casing will be protected in-place prior to each storm season during construction. Any remnants of the wells will be removed at the end of construction.

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.

Dam Removal and Sediment Excavation and Disposal **[Exhibits 3, 4, 6, and 9]**
Sediment mining will begin to remove the top layer of mostly gravels and boulders (approximately10 foot depth), with some of the material used for completion of the ramps, hauling the remaining Unit 1 layer to the Calabasas Landfill along with the surface vegetation. The first lift, the horizontal cut in the dam arch, will be removed in order to leave the concrete arch at the level of the remaining impounded sediment by October of the first year, repeating this action each year of construction. The site will be cleared of crews and equipment for the winter season, with the second year of construction beginning the next spring after the winter storm season.

The second to fourth year of construction will primarily be associated with removal of the Unit 2 sands with 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.[**Exhibit 5**] *Material would be offloaded from the trucks and placed on barges to be transported to the Malibu shoreline, to the east of the pier. The 1,500 cy capacity barges (dump scows) would transport the material via tugboat downcoast and place the sands in the nearshore area near, but to the east of Malibu Pier in a location that does not adversely affect submerged aquatic vegetation. Both trucks and barges would be making approximate 82-mile round-trips for each load: trucks from the Rindge Dam impounded sediment site to Ventura Harbor and back; and the dump scows from the harbor to the Malibu nearshore site and back. This cycle of activities will be repeated for these three years.*

The fourth through seventh years of construction include the removal of the Unit 3 silts and clays with delivery to the Calabasas Landfill. The final year will complete site clean-up, the revegetation of creek slopes exposed during the mining, and removal of one ramp and partial removal of the remaining ramp to limit future access to the site to monitoring and adaptive management activities. The TSP [tentatively selected plan] *includes removal of the Rindge Dam spillway.*

About 10,000 cy of impounded sediment is estimated to remain in the impounded sediment area after construction around the pre-dam bedrock outcrops and boulders exposed by mining to the former (pre-dam) creek bed elevation. This material is expected to be naturally flushed to downstream reaches and the ocean with much

greater volumes of sediment generated from the watershed during early post-construction storm runoff events.

Aquatic barriers removal **[Exhibits 7 and 8]**
The LPP also includes removal or modification of eight barriers upstream of Rindge Dam: four along Las Virgenes Creek (LV1-LV4) and four along Cold Creek (CC1-3, CC5). Construction activities will begin after the first several years of construction at Rindge Dam, and will conclude within the estimated construction timeframe for completion of work at Rindge Dam. Barriers CC1 and CC5 are owned by Los Angeles County, and CC2 and CC3 are privately owned. LV1-2 are owned by CDPR and LV3-4 are owned by Los Angeles County. Waste material from these work sites will be transported by truck to the Calabasas Landfill.

Restoration and Monitoring.
Upon completion of dam and sediment removal, the natural channel of Malibu Creek would be restored to pre-dam contours to the extent possible, and the riparian corridor would be re-vegetated with native riparian species. All areas disturbed by project construction, including but not limited to the dam and spillway footprints, construction vehicle access ramps, canyon slopes exposed after sediment removal, and upstream barrier removal/modification sites, would be re-vegetated with the appropriate native vegetation.

Monitoring of the Rindge Dam site and impounded sediment area would continue throughout the construction timeframe and would include oversight of environmental commitments based on permits obtained and wet season storm monitoring. Monitoring would include topographic changes, vegetation (including identification and removal of non-native plant species), and indicators of slope stability as impounded sediments are removed. USACE would be involved in monitoring and adaptive management activities for revegetated areas principally in the former impoundment area, access ramps, and upstream barrier sites for approximately 5 years following completion of construction.

The Corps currently estimates that should the project be authorized and funded by Congress, project construction would commence in 2025 and last approximately eight years.

B. BACKGROUND

The 100-foot-high concrete arch Rindge Dam was constructed in a steep narrow canyon gorge on Malibu Creek in 1926 (**Exhibit 3**). To provide erosion control a spillway was cut into canyon wall bedrock adjacent to the dam and faced with concrete slabs.[1] Rindge Dam interrupted the sediment transport regime in the watershed and interfered with habitat connectivity for aquatic species, including the endangered southern California steelhead, which is currently blocked from former spawning and rearing habitat in Malibu Creek and its tributaries upstream of the dam. The dam was constructed without an outlet structure, and the half-mile-long water supply reservoir

[1] The proposed removal of the spillway means removal of the concrete slab facing over the cut bedrock spillway, and not removal of the actual cut bedrock feature.

behind the dam was essentially filled with sediment by the mid-1940s. The reservoir was decommissioned by the California Department of Water Resources as a water storage facility in 1967 because it no longer stored more than 15 acre-feet of water. The dam and adjoining property were subsequently purchased by the California Department of Parks and Recreation and added to Malibu Creek State Park.

The consistency determination states that the California Department of Parks and Recreation (DPR) and numerous stakeholders have long been interested in pursuing the modification to, and possible removal of, Rindge Dam. In 1998 the Corps and California DPR initiated a joint study of ecosystem restoration possibilities in the Malibu Creek watershed. An initial public workshop was held in January 1998, and the Corps and California DPR signed a Feasibility Cost Sharing Agreement in July 2001, which initiated the feasibility study process. A public scoping meeting and workshop for the feasibility study was conducted in May 2002, and a *Notice of Intent* to prepare an environmental impact study for ecosystem restoration was published in June 2002. Meetings coordinated by the Corps and California DPR continued through subsequent years, and included the establishment of a Project Delivery Team and a Technical Advisory Committee, both of which included federal, state, and local agency representatives (including the Coastal Commission), regional and community public interest groups, and local individuals. After nearly 15 years of work, the Corps published the *Draft Integrated Feasibility Report/EIS/EIR* for Malibu Creek ecosystem restoration in January 2017.

The proposed restoration project is currently at the feasibility stage of the Corps' planning process. As noted previously, the Corps currently estimates that the earliest that project construction (using federal and local sponsor funding) would commence is in 2025. The Corps states in the *DIFR/EIS/EIR* that numerous future actions are required prior to the start of project construction, including:

- Filing the *Final IFR/EIS* and the proposed report of the Chief of Engineers with the U.S. Environmental Protection Agency.

- Certification of the *Final IFR and Environmental Impact Report* by the California Department of Parks and Recreation.

- Approval by the Chief of Engineers of the *Final IFR/EIS*.

- Approval by the Assistant Secretary of the Army for Civil Works of the *Final IFR/EIS.*

- Review of the *Final IFR/EIS* by the Office of Management and Budget and forwarding to Congress.

- Congressional approval of the project.

- Congressional appropriations for Pre-Construction Engineering and Design, including surveys, model studies, and detailed engineering plans.

- Congressional appropriations for project construction.

In addition, the Corps states in its consistency determination that:

> *Prior to construction, the Corps will review the project to confirm that the project remains consistent with the Coastal Zone Management Act of 1976. If the Corps determines that the project has changed or has new or different effects on coastal resources that require a supplemental CCD* [coastal consistency determination], *the Corps will, as provided for* [in] *the consistency regulations, develop and submit a supplemental CCD to the Coastal Commission.*

C. OTHER AGENCY APPROVALS AND CONSULTATIONS

U.S. ARMY CORPS OF ENGINEERS, REGULATORY BRANCH

The Corps of Engineers Planning Division must comply with the provisions of the federal Clean Water Act and will do so through completion of a Section 404(b)(1) analysis and a determination of the Least Environmentally Damaging Practicable Alternative, both undertaken in coordination with the Corps' Los Angeles District North Coast Regulatory Branch.

U.S. FISH AND WILDLIFE SERVICE

The Corps of Engineers has coordinated with the U.S. Fish and Wildlife Service beginning in July 2007 and through development of a Draft Coordination Act Report (CAR), completed in May 2013; coordination will continue through development of the Final CAR. In addition, informal consultation under provisions of the federal Endangered Species Act (ESA) is ongoing including draft ESA determinations. The Corps will consult with the Service on project effects determinations and proposed conservation measures based on the final project plan.

NATIONAL MARINE FISHERIES SERVICE

The Corps of Engineers began coordination with the National Marine Fisheries Service in July 2007 and this process is ongoing regarding potential project benefits and impacts to ESA listed species and their designated critical habitat, primarily southern California steelhead and protected beach and nearshore habitats. Informal consultation under provisions of the ESA began in 2016 and is ongoing. Coordination will continue during essential fish habitat consultation and a draft Biological Assessment will be prepared and coordinated with NMFS for inclusion in a Biological Opinion for the project.

U.S. ENVIRONMENTAL PROTECTION AGENCY

The Corps of Engineers has consulted with EPA regarding the suitability of the sand layer of impounded sediments for beach or nearshore placement. Consultation occurred through the Southern California Dredged Material Management Team (SCDMMT) in 2013. The sand layer was determined suitable for direct beach placement. The Corps of Engineers will continue to coordinate with EPA and the SCDMMT throughout the National Environmental Protection Act (NEPA) process and project construction.

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

The Corps of Engineers and the California Department of Parks and Recreation jointly undertook the Malibu Creek Ecosystem Restoration Study. The Department is the non-Federal sponsor of the study and the lead agency pursuant to the California Environmental Quality Act (CEQA). The Integrated Feasibility Report (IFR) is a joint document to fulfill both NEPA and CEQA requirements. The Corps and the Department will continue to coordinate through publication of the Final IFR and Final EIS/EIR and during project construction.

CALIFORNIA STATE LANDS COMMISSION

The Corps of Engineers will obtain authorization from the California State Lands Commission for placement of suitable sandy sediments in nearshore waters downcoast of the Malibu Pier.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The Corps of Engineers will continue to consult with the California Department of Fish and Wildlife throughout the CEQA process and construction activities. Also, the Corps will coordinate with the Department relative to California listed species and Species of Special Concern. The Department may participate in a Federal ESA Section 7 consultation, if initiated, and has the option to adopt the Federal Biological Opinion (BO) or to prepare its own BO. Depending on the results of the BO, a California Fish and Game Code Section 2081 take permit may be required for the project. The non-federal project sponsors would be responsible for applying for a Section 2081 take permit, as well as a Fish and Game Code 1601 Streambed Alternation Agreement, if required.

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

The Corps of Engineers began coordination with the Los Angeles Regional Water Quality Control Board in October 2016 for the required federal Clean Water Act Section 401 Water Quality Certification (WQC). Prior to the start of project construction, the Corps will obtain the required Section 401 WQC and will comply with the permit requirements throughout project construction.

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

The Corps of Engineers has initiated consultation with the California State Historic Preservation Officer (SHPO) regarding project compliance with Section 106 of the National Historic Preservation Act (NHPA). The Corps will complete consultation prior to the start of project construction and will implement recommended cultural resource protection and mitigation measures.

NATIVE AMERICAN TRIBAL CONSULTATION

The Corps of Engineers held an initial Tribal consultation meeting in April 2016 with representatives from the Santa Ynez Band of Chumash Indians, Wishtoyo Chumash Foundation, and the Tongva Ancestral Territorial Tribal Nation. Native American consultation conducted to date strongly indicates that the Malibu Ecosystem Restoration Project area should be considered sensitive for Native American resources. Consultation under Section 106 of the NHPA, CEQA, and Corps and California Department of Parks and Recreation Tribal consultation policies is ongoing.

D. COASTAL STREAMS AND ENVIRONMENTALLY SENSITIVE HABITAT

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30233(a) states in part:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> . . .
>
> *(6) Restoration purposes . . . .*

Coastal Act Section 30233(d) states:

> *Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

Coastal Act Section 30240 states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which*

would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

The project is intended to improve aquatic and terrestrial habitat conditions along Malibu Creek and two upstream tributaries for the benefit of fish and wildlife species. Removal of Rindge Dam and upstream barriers would: (1) eliminate barriers to fish passage on Malibu Creek, thereby facilitating the migration, spawning, and rearing of the endangered southern California steelhead; (2) restore 18 miles of spawning habitat in Malibu, Cold, and Las Virgenes creeks; and (3) restore the natural sediment transport regime of Malibu Creek, thereby improving downstream coastal beach sand replenishment.

The Corps states that the restoration project would:

- *Provide for a more natural sediment transport regime in the vicinity of Rindge Dam and along reaches downstream of Malibu Creek to the shoreline.*
- *Reconnect the aquatic corridor to provide access to additional spawning and rearing habitat to a variety of aquatic species, including the Pacific lamprey, arroyo chub, western pond turtle, and the federally endangered southern California steelhead, among others.*
- *Restore riparian habitat connectivity along Malibu Creek and tributaries from the Pacific Ocean to the upper watershed to include restoration of migratory corridors for terrestrial animals, including mammals and herptofauna.*
- *Address non-native species of concern occur within Malibu Creek that crowd out native species by outcompeting for light, water and nutrients, particularly within the Rindge Dam impounded sediment area and near upstream barriers. Non-native species include the giant reed (Arundo donax), fountain grass (Pennisetum setaceum), spurge (Euphorbia esula), and pepperweed (Lepidium latifolium).*
- *Allow for transport of Rindge Dam impounded sediment to nourish downstream shoreline and nearshore habitats that would have naturally benefited from this material without the dam in-place.*
- *Decrease potential for human disturbances to aquatic species in alliance with the formulation of other ecosystem restoration measures.*

The proposed project involves excavation of sediments and removal of a dam from a coastal stream, and placement of clean sandy sediments in nearshore coastal waters. The project therefore triggers the three-part test of Section 30233(a): (1) the project must be one of the seven enumerated allowable uses; (2) the project must be the least environmentally damaging feasible alternative; and (3) the project must include feasible mitigation measures to minimize adverse environmental impacts. Regarding the first test, the excavation of sediments, the removal of Rindge Dam, and the placement of clean sandy sediments in nearshore waters are allowable uses under the restoration provision of Section 30233(a)(6).

While designed to restore coastal streams and environmentally sensitive habitat, and to restore and protect the biological productivity and quality of coastal waters, the project's temporary impacts on coastal resources requires an alternatives analysis to determine the least

environmentally damaging feasible alternative to implement the project's goals. The Corps undertook an extensive alternatives analysis:

> *A full array of structural and non-structural measures was formulated during the planning process and combined into various alternatives to address the planning objectives. After several iterations of the planning process, project delivery team risk-informed decision-making, and preliminary screening of alternatives, a focused array of alternatives was carried forward for more detailed analysis. The alternatives in the focused array all included removal of the Rindge Dam concrete arch and impounded sediment behind the dam. Methods of removal and timeframes to complete varied based on the different combinations of measures considered for each alternative.*

Several alternatives were eliminated during the screening process, including constructing a V-notch in the dam to allow direct sediment bypass through the dam, restoration of the water supply function of the dam, construction of fishways around the dam, and trapping and hauling fish around the dam. These alternatives were eliminated due to their infeasibility, inability to meet restoration objectives, or potential environmental impacts. Ultimately, four primary alternatives received detailed analysis in the *Integrated Feasibility Report*: the no action (Alternative 1) and three action alternatives (Alternatives 2, 3, and 4) each with multiple options (sub-alternatives) addressing methods of sediment transport and deposition, spillway removal, and upstream barrier modifications (**Exhibit 10**). The four alternatives are summarized as follows:

- Alternative 1 (No Action). The dam, spillway, and impounded sediment remain in place and the upstream barriers are not modified or removed.

- Alternative 2. Options include removal of the Rindge Dam concrete arch and impounded sediment removal using traditional mining methods, and consideration of various shoreline and upland placement options for the impounded sediment. The mostly sands layer of the impounded sediment, an estimated 278,000 cubic yards, would be placed along the Malibu shoreline or nearshore area using trucks (shoreline) or a combination of trucks and barges (nearshore). Other variations for the Alternative 2 options include removal of the dam spillway and the modification or removal of other upstream aquatic barriers on Cold Creek and Las Virgenes Creek tributaries. The overall construction timeframe is estimated to take 7-8 years to complete.

- Alternative 3. Options include removal of the Rindge Dam concrete arch and impounded sediment over many decades, allowing for storms to erode controlled volumes of the impounded sediment before implementing the next incremental notching of the dam arch, repeating the cycle until the dam arch and sediment is removed. The costs for these alternative options are less than other alternatives and use far less trucks, but there are much greater uncertainties about the time needed to complete construction and potential adverse downstream effects of incremental releases of the impounded sediment, including an increased flood risk *to*

downstream communities. Other variations for the Alternative 3 options include removal of the dam spillway and the modification or removal of upstream barriers. The overall construction timeframe is estimated to take at least two decades, but more likely multiple decades to a century to complete. The large range for construction completion is based on the uncertainties associated with the frequency of storm events of sufficient magnitude that allow for the next cycle of incremental dam concrete arch notching, followed by the timeframe for storms that mobilize and naturally transport the next layer of exposed impounded sediment.

- Alternative 4. Options are similar to the Alternative 2 options, except the Rindge Dam concrete arch would be lowered an additional 5-ft each winter storm season during the 7-8 year construction cycle to allow opportunities for a controlled volume of the impounded sediment to erode downstream during the storm seasons between mining season operations. These alternative options potentially reduce the number of trucks needed to transport the impounded sediment, but increase the risk of detrimental impacts to downstream reaches of Malibu Creek compared to Alternative 2 options. Other variations for the Alternative 4 options include removal of the dam spillway and the modification or removal of upstream barriers. The overall construction timeframe is estimated to take 7-8 years to complete.

The consistency determination next compared the four project alternatives, summarized as follows. Alternative 2 and 4 options provide for restoration of more natural sediment transport regimes and habitat connectivity within Malibu Creek in 7-8 years as opposed to the many decades required for Alternative 3 options. In addition, potential adverse effects to Malibu Creek critical habitat and aquatic species and sensitive cultural resources downstream of Rindge Dam are much higher for Alternative 3 options. Traffic impacts along Malibu Canyon and Las Virgenes Canyon roads and the cities of Malibu and Calabasas are much higher in Alternatives 2 and 4 than for Alternative 3.

Alternative 2 and 4 options include shoreline placement of mostly sands in front of the Malibu pier, temporarily requiring some of that sediment to be placed at an upland storage site with additional handling required to truck material from that site to the beach parking lot. Use of the lot would adversely impact public access to the beach and creates an increased risk of indirectly impacting isolated patches of surfgrass as mostly sands drift downcoast of the parking lot. Other Alternative 2 and 4 nearshore placement options shift all trucking to the upper portion of the Malibu Creek watershed and use Highway 101 to transport impounded sediment to barges in Ventura Harbor for shoreline placement, avoid use of the upland storage site and the Malibu pier parking lot, and reduce other potential traffic impacts along PCH and the City of Malibu.

The Corps states that although the Alternative 3 options are less costly, the low habitat evaluation scores for these options, timeframe to completion, and biological, cultural and flood risks to downstream reaches of Malibu Creek do not support the recommendation of these alternatives. The Corps also states that the Alternative 4 options increase the downstream flood risk, adversely impact cultural resources, and have the potential to adversely impact biological resources and therefore are not considered for recommendation.

Alternative 2 options 2b1 and 2b2 include the removal of the Rindge Dam spillway. Although some aesthetic, safety and critical habitat benefits are associated with the removal of the spillway, the Corps states that this action does not directly address the project objectives. However, the California Department of Parks and Recreation (CDPR) considers removal of the spillway to be a critical component to the overall restoration plan, and the CDPR prefers use of barges and placement of mostly sands in the nearshore area, as opposed to use of the pier parking lot for direct beach placement, which would cause increased public access and recreation impacts.

The Corps concluded that Alternative 2d1 is the National Ecosystem Restoration (NER) plan and the Tentatively Selected Plan. The CDPR prefers Alternative 2b2 as it proposes use of barges and placement of mostly sands in the nearshore area versus use of the pier parking lot and is identified at the Locally Preferred Plan (LPP). The Corps concludes that both Alternatives 2d1 and 2b2 are considered the Least Environmentally Damaging Practicable Alternatives under NEPA.

In selecting Alternative 2b2 as the proposed project for the subject consistency determination, the Corps states:

> *The Sponsor* [CDPR] *has indicated their intent to pursue Alternative 2b2 as a LPP. The likely LPP is similar to the NER Plan in regards to actions described for the Rindge Dam and impounded sediment area. 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 mostly sands, using trucks and barges for nearshore placement, and adding the removal of the Rindge Dam spillway. Although the Habitat Evaluation outputs remain the same as those calculated for the NER Plan, the likely LPP has the benefit of avoiding an area of sensitive surfgrass. The likely LPP also reduces future impacts to steelhead critical habitat and public safety via removal of the spillway.*

The *DIFR/EIS/EIR* and the consistency determination examined potential temporary impacts on habitat and wildlife during project construction, and these impacts are summarized below:

- **Vegetation/Sensitive Habitat**. 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. After removal of the dam and sediment, riparian and wetland habitats and a natural hydrologic regime will be restored along Malibu Creek, and hillside areas will be restored to pre-project conditions. As incoming streamflow and sediment currently passes over the dam, the removal project would not result in substantial changes to downstream sedimentation patterns or downstream riparian and wetland habitat.

- **Wildlife**. Mobile species will move away from construction zones and disturbed areas. Clearing of vegetation will occur outside of bird nesting seasons to minimize project impacts. Wildlife diversity and populations are expected to improve over current conditions after restoration of the Malibu Creek riparian corridor.

- **Southern California Steelhead**. Annual construction activities are expected to add fine sediments to reaches of Malibu Creek immediately downstream of the dam. Any steelhead found in the pool at the face of the dam will be caught and relocated in consultation with the National Marine Fisheries Service; this activity will be repeated each year prior to the start of construction. No project construction will occur during the winter rainy season when Malibu Lagoon is more likely to be open and allowing steelhead to move between the ocean and the reach of Malibu Creek between the lagoon and the dam.

The *DIFR/EIS/EIR* and the consistency determination also examined potential long-term impacts on habitat and wildlife during project construction, and these impacts are summarized below:

- **Vegetation/Sensitive Habitat**. Riparian habitat upstream of the impounded reservoir and downstream of the dam will be affected by the new hydrologic and sediment regime. However, native species are expected to adapt and recover quickly and required habitat restoration and revegetation work will assist this process. Riparian, wetland and aquatic vegetation communities will reestablish along the restored creek corridor and the project will generate long-term habitat improvements.

- **Wildlife**. Dam and impounded sediment removal will lead to long-term improvements to riparian and aquatic habitats, which in turn will benefit wildlife species dependent on these habitats for breeding and foraging. Restoration of upland areas disturbed during construction with native vegetation will generate similar wildlife benefits. Removal of the dam will reestablish the wildlife corridor along Malibu Creek after a century of disruption.

- **Steelhead and Fisheries**. Modifications to the hydrologic regime of Malibu Creek from dam removal will enhance aquatic and riparian habitat, with associated benefits to steelhead, tidewater goby and other native fish species. Dam removal will create an additional 18 miles of steelhead spawning and rearing habitat on Malibu, Cold, and Las Virgenes creeks.

To address the project's habitat impacts, the Corps, after coordination with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Parks and Recreation, and California Department of Fish and Wildlife, incorporated the following protective measures into the proposed project:

- A qualified biologist will be responsible for overseeing compliance with all protective measures for biological resources during clearing and construction activities.

- A Habitat Restoration Program will be developed to restore the streambed to pre-dam contours to the extent possible and to revegetate riparian areas of Malibu Creek, in coordination with the appropriate resource agencies and stakeholders during Pre-construction Engineering Design.

- A revegetation plan will be developed with a native plant palette, including proposed plant sizes, a maintenance procedures during the establishment period (including irrigation if needed), and re-planting of dead vegetation. All areas disturbed by construction, including cleared areas, shall be restored to their original condition or an improved condition.

- Construction best management practices would be in place to avoid and reduce erosion of disturbed areas. Work would stop, all equipment would be removed, and the site stabilized prior to the rainy season. Work would commence again in early spring, weather permitting.

- Prior to the implementation of vegetation removal or sediment deposition, a USFWS-approved biologist would conduct special-status plant surveys. If no such species are observed, then no further conservation measures would be implemented. If any of these special-status plant species are determined to be present on site, then individual plants would be enumerated, photographed, and flagged. Timing of field surveys would correspond with blooming or growth seasons when species are conspicuous and recognizable. Seed collection from individuals with mature seed that are likely to be impacted would be conducted for post-construction propagation.

- In order to avoid direct affects to steelhead during Dam removal activities, pre-construction surveys will be conducted to identify the presence/absence of fish below the Dam within the construction zone. The construction zone will be defined in the engineering designs. While construction would occur outside of the migratory season for steelhead, juvenile steelhead are likely to occur in the Malibu Lagoon and in Malibu Creek pools below Rindge Dam. A fish rescue and relocation effort plan will be developed prior to commencing work in pools in the reach downstream of the Dam. The fish rescue and relocation will be conducted under the supervision of a qualified biologist and will entail measures to reduce effects to steelhead.

- During work within channels where arroyo chub could occur (including upstream tributaries), measures would be taken to avoid or reduce impacts on arroyo chub under the supervision of a qualified fisheries biologist and in coordination with USFWS and CDFW. Surveys will be conducted within the sediment and dam removal areas. If needed, a fish rescue and relocation effort plan will be developed prior to commencing work in areas where this species occurs and exclusion barriers are needed to divert flow around the work area. The fish rescue and relocation will be conducted under the supervision of a qualified biologist and will entail measures to reduce effects to arroyo chub and other fish associated with in-water construction activities.

- Prior to the implementation of construction activities, a qualified biologist would conduct surveys to ensure no special statues reptiles or amphibians are present within the area in which construction activities at Malibu Creek are to occur. If no special status species are observed, then no further conservation measures would be implemented. If any of these species are present, they will be captured and relocated to suitable habitat in consultation with CDFW.

- Removal of vegetation at the project site will occur prior to the start of bird nesting season to the extent possible in order to avoid impacts to migratory and nesting birds. If vegetation removal must be conducted during the nesting season, the area will be surveyed by a qualified biologist and appropriate buffers will be identified in consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife.

- Prior to the implementation of construction activities, a qualified biologist would conduct pre-construction surveys for presences/absences of territorial vireo males within the area in which construction activities at Malibu Creek are to occur. If no vireo are observed, then no further conservation measures would be implemented. If these species are present a monitoring and avoidance plan shall be worked out in consultation with the USFWS.

- Prior to the implementation of construction activities, a qualified biologist would conduct surveys to determine if bat roosts are present within the project area, particularly trees to be removed. If no bats are observed, then no further conservation measures would be implemented. If bats are found during an August – October survey, appropriate exclusion devices approved by CDFW and the USFWS shall be installed by a qualified bat biologist. Once the bats have been excluded, tree removal may occur. Exclusion devices shall be placed by a qualified bat biologist in accordance with CDFW and USFWS guidance.

The final language of the above habitat and species protective measures will be developed during the Corps' Pre-Construction Engineering and Design process in consultation with the aforementioned agencies. All measures will be in place prior to the start of all project construction activities over the estimated eight-year-long construction time period. In addition, the Corps will need to obtain a Final Coordination Act Report and Biological Opinion from the National Marine Fisheries Service regarding protection of southern California steelhead and its designated habitat. The National Marine Fisheries Service provided a letter to the Commission on January 17, 2018, stating that it supports the restoration project and anticipates that there will be a mutually acceptable resolution of project impacts on steelhead and its designated critical habitat through the ongoing consultation process (**Exhibit 11**).

Given the complexities and uncertainties of the proposed project, the Corps and the California Department of Parks and Recreation developed a monitoring and adaptive management plan (MAMP) to:

> *. . . ensure the success of the recommended restoration plan in meeting project objectives and to provide a process to identify when any adaptive management actions are warranted during the monitoring period. The MAMP identifies criteria upon which an adaptive management action may be implemented and provides:*
>
> - *A systematic approach for identifying project success criteria in areas of habitat restoration;*

- *The process for future decision-making related to habitat management activities in the project area;*
- *Triggers, and implementation of remedial actions to meet success criteria;*
- *The framework for effective monitoring, assessment of monitoring data, and decision making for implementation of adaptive management activities in the project area;*
- *The process for identifying adaptive management actions in the project area; and*
- *Decision criteria for vegetation and wildlife evaluation and modification of adaptive management activities.*

The MAMP will be reviewed and revised as needed during the future Pre-Construction Engineering and Design phase as specific design details are made available.

The Corps states that the uncertainties associated with the proposed restoration project which justify the development and use of the MAMP include:

- *Project engineering and design fully address project objectives;*
- *Future operation and maintenance regime maintain project objectives;*
- *Ability of hydrologic models to predict project impacts/benefits;*
- *Future availability of water for restored habitat due to extreme drought or other climate change issues; and*
- *Other factors which are not completely within the USACE's or CDPR's control or ability to predict, such as high flow events that may occur before the restored habitat has fully established, vandalism, or upstream watershed changes that may affect the project area.*

The project monitoring plan that will support the MAMP includes the following elements: appropriate monitoring period to determine ecological success of the restoration project; monitoring schedules; reference sites for the vegetation communities included in the restoration project; performance standards to monitor site development and to decide when to implement remedial measures; monitoring procedures for the hydrologic regime, vegetation, stream habitat, and wildlife; monitoring stations for geomorphology and in-channel habitat elements; photo documentation; assessment phase of monitoring results; database management; and annual reports. Potential adaptive management measures for the restoration project include: irrigation/ supplemental water; replanting of habitat; plant protection from predation or trampling; invasive species control; erosion control; re-grading of the creek invert; and non-native/nuisance wildlife control.

The Commission agrees with the Corps that the project: (1) is designed to protect and minimize impacts to aquatic, riparian, and environmentally sensitive habitats to the extent practicable during the eight-year-long restoration project; and (2) includes adequate resource protection and mitigation plans. The Corps' consistency determination acknowledges that these plans will not be finalized until the project enters the future Pre-Construction Engineering and Design phase of development. The Corps has committed to provide copies of the final plans to the Executive Director for review prior to the start of any construction activity. Should the Executive Director

identify changes and/or shortcomings in the content of any of these plans regarding protection of stream resources and environmentally sensitive habitats, and if the Corps and the Executive Director are unable to resolve any disagreements over the plans, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect on coastal resources that is substantially different from what was originally described and anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations:

> ***§930.45 Availability of mediation for previously reviewed activities.***
>
> *(a) Federal and State agencies shall cooperate in their efforts to monitor federally approved activities in order to make certain that such activities continue to be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of the management program.*
>
> *(b) The State agency may request that the Federal agency take appropriate remedial action following a serious disagreement resulting from a Federal agency activity, including those activities where the State agency's concurrence was presumed, which was:*
>
> *(1) Previously determined to be consistent to the maximum extent practicable with the management program, but which the State agency later maintains is being conducted or is having an effect on any coastal use or resource substantially different than originally described and, as a result, is no longer consistent to the maximum extent practicable with the enforceable policies of the management program; or*
>
> *(2) Previously determined not to be a Federal agency activity affecting any coastal use or resource, but which the State agency later maintains is being conducted or is having an effect on any coastal use or resource substantially different than originally described and, as a result, the activity affects any coastal use or resource and is not consistent to the maximum extent practicable with the enforceable policies of the management program. The State agency's request shall include supporting information and a proposal for recommended remedial action.*
>
> *(c) If, after a reasonable time following a request for remedial action, the State agency still maintains that a serious disagreement exists, either party may request the Secretarial mediation or OCRM mediation services provided for in subpart G of this part.*

§930.46 Supplemental coordination for proposed activities.

(a) For proposed Federal agency activities that were previously determined by the State agency to be consistent with the management program, but which have not yet begun, Federal agencies shall further coordinate with the State agency and prepare a supplemental consistency determination if the proposed activity will affect any coastal use or resource substantially different than originally described. Substantially different coastal effects are reasonably foreseeable if:

(1) The Federal agency makes substantial changes in the proposed activity that are relevant to management program enforceable policies; or

(2) There are significant new circumstances or information relevant to the proposed activity and the proposed activity's effect on any coastal use or resource.

(3) Substantial changes were made to the activity during the period of the State agency's initial review and the State agency did not receive notice of the substantial changes during its review period, and these changes are relevant to management program enforceable policies and/or affect coastal uses or resources.

(b) The State agency may notify the Federal agency and the Director of proposed activities which the State agency believes should be subject to supplemental coordination. The State agency's notification shall include information supporting a finding of substantially different coastal effects than originally described and the relevant enforceable policies, and may recommend modifications to the proposed activity (if any) that would allow the Federal agency to implement the proposed activity consistent with the enforceable policies of the management program. State agency notification under this paragraph (b) does not remove the requirement under paragraph (a) of this section for Federal agencies to notify State agencies.

The Commission concludes that the project's overall goals of restoring and improving terrestrial and aquatic habitat, particularly the improvement of steelhead migration through removing a major barrier to fish passage, facilitating the migration, spawning, and rearing of southern steelhead (an endangered species), and restoring the natural sediment transport regime and riparian habitat of Malibu Creek, are consistent with Coastal Act goals for habitat restoration and beach enhancement. While construction of the project will result in the loss of riparian and other environmentally sensitive habitat (ESHA) that has developed on the surface of the impounded sediment reservoir, the project is designed to restore natural aquatic and riparian habitat along the lower 8.5 miles of Malibu Creek, including the footprint of the impounded reservoir and stream reaches above and below Rindge Dam. The project design includes no net-loss of ESHA, a net gain in aquatic and riparian habitat function in Malibu Creek, and restoration of all habitat areas disturbed during construction.

The Commission finds the restoration project is an allowable use under Section 30233(a)(6). The Commission agrees with the Corps that the proposed project represents the least environmentally damaging feasible alternative and meets the "alternatives" test of Section 30233(a), and provides adequate mitigation in accordance with the "mitigation" test of Section 30233(a). The Commission finds that the project will maintain and restore the biological productivity of coastal streams and wetlands through the restoration of aquatic and riparian habitats along Malibu, Cold, and Las Virgenes creeks, consistent with the resource protection policies of Section 30231. The Commission also finds that while the project will remove ESHA from the surface of the impounded sediment reservoir, the overall aquatic and riparian habitat restoration that will occur along Malibu Creek after dam and sediment removal will significantly improve ESHA within the project area, and that the proposed restoration is a resource-dependent use consistent with the policies of Section 30240.

The Corps' commitments for habitat restoration and protection, implementation of monitoring and adaptive management, submittal to the Executive Director of final project design and resource protection and mitigation plans, and submittal of a supplemental consistency determination should the project change (or should new or different effects on coastal resources be identified) between now and the expected start of construction in 2025 enable the Commission to find the proposed project consistent with the stream, coastal waters, and environmentally sensitive habitat protection policies of the Coastal Act (Sections 30231, 30233, and 30240).

E. WATER QUALITY

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30232 states:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

The consistency determination states that one of the project objectives is to restore aquatic habitat of sufficient quality along Malibu Creek and tributaries to sustain or enhance indigenous populations of aquatic species. This objective rests partially on a foundation of sufficient and high quality streamflow. The Corps also noted that the proposed project must: (1) minimize detrimental impacts to existing water quality parameters in the lower portion of Malibu Creek; and (2) avoid modification to ongoing seasonal freshwater discharges from Tapia Water

Reclamation Facility into Malibu Creek above Rindge Dam. The Corps also reports that to ensure compliance with the Clean Water Act, a draft 404(b)(1) analysis has been prepared and that prior to construction, a Clean Water Act Section 401 Water Quality Certification (WQC) will be obtained from the Regional Water Quality Control Board, and a Storm Water Pollution Prevention Plan (SWPPP) will be prepared pursuant to Section 402 of the Clean Water Act.

The *Draft Integrated Feasibility Report/EIS/EIR* examines several contributing factors to water quality in the restoration project area:

> *The study area of Malibu Creek is undeveloped through the canyon reaches, but the creek is narrow and steep. In the mountains, runoff concentrates quickly from the steep slopes; hydrographs show that the stream flow increases rapidly in response to effective rainfall. High rainfall rates, in combination with the effects of shallow surface soils, impervious bedrock, fan-shaped stream systems, steep gradients, and occasional denudation of the area by fire, result in intense debris-laden floods. Flows originating in the upper watershed flow through the lower canyon portion of the study area at high velocities, upstream and downstream of Rindge Dam. The bed slope decreases and the overbank area increases where Malibu Creek emerges from the canyon about a mile below Rindge Dam resulting in a reduction in flow velocities and a potential increase in sediment deposition.*
>
> . . .
>
> *The TWRF [Tapia Water Reclamation Facility] is located adjacent to Malibu Creek approximately 4.5 mi upstream from Malibu Lagoon. The facility is jointly owned by the Las Virgenes Municipal Water District and Triunfo Sanitation District. This facility treats municipal wastewater primarily from the cities and unincorporated areas of the upper watershed. The combined service area is approximately 100,000 ac with 90,000 residents in the Santa Monica Mountains. Tapia has a processing capacity of 16 MGD (about 25 cfs), but currently operates at approximately 9 MGS (about 14 cfs). The facility is currently exploring ways to increase recycling and to reduce reclaimed water discharge into the watershed.*

The *DIFR/EIS/EIR* also notes that while the TWRF discharged tertiary treated water year-round to the creek between 1984 and 1997 in part to augment summer flows in the creek, currently the facility is prohibited by its Regional Water Quality Control Board permit from discharging reclaimed water into Malibu Creek during the dry season (April 15 to November 15) excepting during treatment plant operational emergencies, storm events, and minimal streamflow conditions that require flow augmentation in Malibu Creek to sustain endangered species. Regarding the latter exception, the *DIFR/EIS/EIR* states that:

> *The NMFS, USFWS, and CDFW have expressed concern over the summer discharge prohibition because of potential adverse modification of habitat suitable for steelhead. Based on NMFS recommendations, RWQCB permitting requirements for TWRF now mandate monitoring creek flow so that a streamflow of 2.5 cfs over*

Rindge Dam and past Cross Creek Road can be maintained through augmentation from the treatment facility (RWQCB 2005: 11).

Fish barriers are currently listed by the RWQCB as water quality impairments on Malibu Creek. The removal of the Rindge Dam and modification of upstream barriers on Cold and Las Virgenes creeks would improve long-term water quality in Malibu Creek by removing fish barriers and restoring the impounded sediment reservoir area to a natural riparian habitat and allowing natural riverine processes to re-establish.

The *DIFR/EIS/EIR* examined potential impacts to water quality arising from restoration project construction activities and determined that minor natural transport of sediments during winter and potential turbidity increases associated with construction are the primary potential impacts. Any potential impacts will be reduced due to implementation of best management practices and through compliance with the project's Section 401 WQC and SWPPP. The consistency determination includes the following water quality mitigation measures that would be implemented during construction periods and during the winter season when construction is suspended:

Implement Best Management Practices (BMPs). *An erosion-control and spill response plan will be prepared and implemented to include erosion-control best-management practices during construction and implementation of geotechnical recommendations described in the Appendix D* [Geotechnical Engineering]*, including 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, dewatering sediments, diverting water around construction through pumping and/or piping, development of slope stability measures for groundwater saturation, construction ramp stability measures, and erosion-control measures at disposal sites.*

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 will include best management practices to prevent accidental spills and other contamination of Malibu Creek, and will 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.*

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

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.*

The Commission agrees with the Corps that the project: (1) is designed to restore and protect the biological productivity of coastal streams and during the eight-year-long restoration project; and (2) includes adequate water quality protection and mitigation plans. The Corps' consistency determination acknowledges that final development of the water quality protection and mitigation measures will occur during the future Pre-Construction Engineering and Design phase of project development. The Corps has committed to provide copies of those measures to the Executive Director for review prior to the start of any construction activity. Should the Executive Director identify shortcomings in the content of any of those water quality protection measures, and if the Corps and the Executive Director are unable to resolve any disagreements over the plans, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect on coastal resources that is substantially different from what was originally described and anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations (cited previously in Section III.D.).

The water quality protection measures incorporated into the proposed restoration project, the implementation of water quality monitoring and adaptive management during the construction period, submittal to the Executive Director of final water quality protection measures, and submittal of a supplemental consistency determination should the project change (or should new or different effects on water quality be identified) between now and the expected start of construction in 2025 enable the Commission to find the proposed project consistent with the water quality protection policies of the Coastal Act (Sections 30231 and 30232).

F. MARINE RESOURCES

Coastal Act Section 30230 states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine*

> *organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30233(b) states:

> *Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.*

The project includes the placement of clean sandy material excavated from the Rindge Dam impounded sediment reservoir into nearshore waters downcast of the Malibu Pier (**Exhibit 12**). Over a three-year period, the Corps anticipates placing approximately 278,000 cubic yards (cu.yds.) of material at this location. Sediments would be transported via truck from the project site to a berth at Ventura Harbor, offloaded onto 1,500-cu.yd.-capacity dump scow barges, and towed to the offshore placement location. The estimated 11-acre disposal site currently proposed by the Corps is located several hundred feet offshore in water depths less than 23 feet, which would keep the sands within the limits of the depth of closure to ensure that all materials are retained within the littoral zone. The site is an area that would typically receive sand transported down an unimpeded Malibu Creek. Sediments would then be moved generally in a downcast direction and gradually onto the beach by longshore currents.

The placement site was selected to avoid sensitive marine habitats (e.g., rocky reefs, kelp, eelgrass) (**Exhibits 13 and 14**), and is located approximately five miles downcast of the Point Dume State Marine Conservation Area and the Laguna Point to Latigo Point Area of Special Biological Significance. The *DIFR/EIS/EIR* describes the nearshore environment at the proposed sediment placement area:

> *The nearshore environment is a mix of sand and rocky-bottom habitat, with some of the rocky habitat supporting large kelp beds that support a diverse amount of species. Field surveys were conducted in June 2016 to map habitat areas and marine biological resources along a 3.5 mi stretch of Malibu shoreline from Carbon Canyon Road on the east to 1.5 mi west of Malibu Creek and the 20 foot mean-lower-low-water (MLLW) depth contour. A total of 325 acres of seafloor was mapped by employing sidescan sonar, down-looking sonar technology, remote video, and photographs to identify marine habitat types, identify bottom types (e.g., rock, sand), identify aquatic vegetation (e.g., kelp, eelgrass, surf grass, algae), identify any large objects (wrecks, debris, etc.), and anticipated resources that are known from or potentially present within the identified survey area. Biological characteristics of the study area were also compared to available information.*

> *East of Malibu Pier, the shoreline was generally sandy beach with intermittent rocks on the beach and in the surfline at both the west and east ends of the beach. The majority of the subtidal habitat was sand at depths between 0 and -35 ft. Giant kelp beds were mapped on reefs primarily located west of Malibu Pier. A second smaller bed was located offshore of Carbon Canyon.*
>
> *Surfgrass was observed on low relief bedrock reef upcoast of Malibu Point at a depth of -15 ft MLLW and has been reported to occur in several locations (between survey Areas 1-3) based on historical CDFW habitat maps. Its depth distribution is between the lower intertidal zone and approximately -20 ft MLLW. Surfgrass was not observed on the underwater video east of Malibu Point. Eelgrass, another HAPC for FMP species, was not encountered within the study area. It is located in the sandy subtidal habitat at depths between -47 and -33 ft outside of Area 1 upcoast of Malibu Point (Merkel & Associates, 2015).*

The *DIFR/EIS/EIR* next describes the marine invertebrates, fish species, and marine mammals that are found within or adjacent to the proposed nearshore sediment placement area:

> *Marine invertebrates common to the sandy nearshore inter- and shallow subtidal habitats include mole crabs, clams, and polychaete worms, which bury themselves in the sand between cobbles and feed on particles brought in by the waves. These species in turn are fed on by shorebirds during low tides and by fish during high tides. The mixture of sand and cobble, coupled with the strong wave energy and periods when low tides expose the area to desiccation, creates a harsh environment that limits the numbers of animal, plant, and algal species that occur in this area. Little neck clams (Protothaca staminea) could act as indicator species should any non-natural sand movement occur within the beach area.*
>
> *Several hundred species of finfish occupy California's near shore environment. The fishes found in the warmer waters of southern California are seldom found north of Point Arguello. The most common fish found in the nearshore environment are the rockfishes. Another dominant fish of the soft-bottom habitats in southern California are the left-eyed flatfish (family Bothidae) (e.g., California halibut [Paralichthys californicus] and sanddab [Citharichthys sp.]); right-eyed flatfish (family Pleuronectidae) (e.g., turbot [Hypsopsetta guttulata and Pleuronichthys sp.]); and tonguefish (family Cynoglossidae) (e.g., California tonguefish [Symphurus atricauda]). Other common near shore sandy bottom dwellers include the Pacific angel shark and skates and rays. Fish common in or near the surf zone include California corbina, surfperches, grunion, and croakers.*
>
> *Marine mammals potentially occurring in the nearshore waters include the common dolphin (Delphinus delphis), Pacific white-sided dolphin (Lagenorhynchus obliquidens), harbor seals (Phoca vitulina), California sea lions (Zalophus californianus), and California grey whales (Eschrichtius robustus). Although individual seals and sea lions may be sighted along the nearby shoreline, the beach is not expected to be used as a haul-out area for either of these species.*

Prior to placement of any dredged or excavated materials into ocean waters, the materials must be determined physically and chemically suitable for such disposal in order to ensure that the materials will not adversely affect the marine environment. The Southern California Dredged Material Management Team (DMMT) is the regulatory body that reviews and approves the placement of dreaded materials in ocean waters and on shoreline beaches in the southern California bight.[2] The Corps undertook initial physical and chemical testing of core samples of the impounded materials behind Rindge Dam in 2002 and made a preliminary determination that approximately 278,000 cu.yds. of sandy materials were free of contamination and suitable for nearshore placement. The DMMT reviewed the sediment test results in February 2013 and January 2015 and agreed that based on the preliminary test results the materials appear to be suitable for nearshore disposal. However, the Corps will undertake additional sediment grain size and chemical analysis during the future Pre-Construction Engineering and Design phase of the project and bring its sampling and analysis plan, test results, and a preliminary suitability determination to the DMMT for its review and approval. Therefore, the Commission will continue to retain oversight over the future sediment suitability determinations through its role in the DMMT. In addition, the Corps states in the consistency determination that:

> *As per standard procedures, prior to any placement, transect sampling is required to verify gradation compatibility with . . . nearshore . . . placements; if sediment is shown to be compatible, regular, confirmatory gradation sampling of the material at the dam site [will] also have to be done as the excavation proceeds, to assure the gradation remains within the tolerable range. In addition, any approved placement scenario will be subject to continued testing for unsuitable materials as excavation of the impound proceeds.*

Given that the sandy sediments excavated from the impounded reservoir behind Rindge Dam at this time appear physically and chemically suitable for nearshore placement, the Commission next examines the Corps' analysis of the potential impacts on marine resources and habitat from placement of those suitable sediments. The nearshore placement area was selected in part on the basis of its sandy bottom habitat and to avoid sand placement in sensitive habitats. The consistency determination states:

> *Placement of sands in the near-shore placement site could result in temporary increase in turbidity and suspended solids and may decrease the amount of dissolved oxygen near the placement site, thus affecting fish and other marine life within the area. Motile species are expected to relocate out of the area until placement activities are finished, and placement of beach compatible materials in the near shore area will not substantially impede the movement or migration of any native fish or wildlife (Criteria 4). Benthic marine populations would be buried, but would be expected to recolonize and recover. Therefore, no substantial loss to the population of any fish, wildlife, or vegetation will occur as the result of* [nearshore] *placement (Criteria 5). Adjacent beaches would experience less erosion due to*

[2] The DMMT includes representatives from the Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Regional Water Quality Control Board, California Department of Fish and Wildlife, and the Coastal Commission.

> *elevated sand levels in the near shore while some of the placed sand may actually migrate onto adjacent beaches increasing beach widths down coast of the placement site, which will beneficially affect shore birds and benthic organisms in the long run as well as California grunion. Therefore, nearshore placement of sediment will not result in a substantial loss in overall ecosystem biodiversity (Criteria 8) and will not result in an adverse effect or net loss in habitat value of any sensitive biological habitats (Criteria 2).*

The Corps examined potential impacts on the California least tern and Western snowy plover:

> *The beach and nearshore receiver sites are located more than thirteen miles north of the California least tern nesting site located within on Venice Beach. Sediment placement activities would not directly affect any nest sites owing to distance. The area is not likely to be used for foraging by California least tern also due to distance from the nearest nest site. The USACE, therefore, has determined that the placement of sand in the nearshore at the Malibu Pier Beach will not affect California least tern.*
>
> *There were reports of nesting plovers on Surfrider Beach in 2013 (Chris Dellith, personal communication), which is highly unusual and not in the location currently being considered for beach placement. The beach fronting Malibu Lagoon is critical habitat for snowy plover, but would not be modified by the proposed placement adjacent to Malibu Pier. Placement in the nearshore would have no effect on this shore species as they would not be encountered at the near shore site. The USACE, therefore, has determined that the project will not affect western snowy plover.*

In addition, the Corps notes that current sediment discharges from Malibu Creek, and the generally downcast movement of those sediments, have similar effects on marine habitat and resources as those that would be associated with the proposed placement of sediments excavated from the Rindge Dam impounded reservoir.

The project includes a number of marine resource protection measures to ensure that nearshore sediment placement over the three-year time period when suitable sediments are excavated from behind Rindge Dam do not adversely affect marine resources and habitat. As noted above, additional sediment grain size and chemical testing would occur during all phases of sand excavation to confirm nearshore placement suitability. During sand placement, weekly monitoring of water quality at the nearshore receiver sites for salinity, pH, temperature, dissolved oxygen, and light transmissivity will occur, and monthly water samples will be taken and analyzed for total dissolved solids. Water quality monitoring and the responsibility of the Corps to modify the rate or location of sediment placement will ensure that sediment placement will not adversely affect marine water quality. The Corps will also monitor sediment placement to ensure that sensitive marine habitats are not adversely affected. The Corps commitment to adaptive management during implementation of the project and consultation with federal and state resource agencies could lead to adjustments in nearshore placement over the three-year period should adverse impacts to marine habitat or resources be identified. In addition, additional

marine resource protection measures will be incorporated into the project, if deemed necessary, during the Pre-Construction Engineering and Design phase of the project.

The Corps also examined potential project impacts from dam removal and the return of a more natural flow regime in Malibu Creek on the recently-restored Malibu Lagoon. The *DIFR/EIS/EIR* states:

> *Malibu Creek flows into the Pacific Ocean at Malibu Lagoon estuary near the city limits of Malibu, California. The lagoon is part of Malibu Lagoon State Beach. Malibu Lagoon currently receives a combination of natural, seasonal freshwater input, and a substantial non-natural water input from various sources including the Tapia Water Reclamation Facility (TWRF). Most of the information in the following section is taken from Dillingham (1989) and Moffat and Nichol (2005). Malibu Lagoon tends to close to tidal flow through the formation of sand bars across its ocean front. In some extremely wet years, the lagoon remains open to the ocean and tidal exchange occurs all year. In some dry years, the sand bar remains unbreached in the winter and water flows over the sand bar. Large floods temporarily remove most of the vegetation, greatly alter topography, and completely redefine the habitats and occurrence of vegetation.*
>
> . . .
>
> *In 2012-2013, Malibu Lagoon underwent extensive restoration by the Malibu Lagoon Habitat Enhancement Project, funded by the CDPR, HTB, and SMBRC and others, via several grants. Restoration activities included habitat restoration within the lagoon, including recontouring of onsite channels to increase circulation. Additional plantings to enhance the species diversity and cover occurred in 2014.*

The Corps reports that tidewater gobies are known to occur in the Malibu Lagoon and that the lagoon is considered a source population. Tidewater gobies were federally listed as endangered on March 7, 1994. The U.S. Fish and Wildlife Service designated revised critical habitat for tidewater gobies on February 6, 2013, and Malibu Lagoon was designated as critical habitat site LA-3. The *DIFR/EIS/EIR* examines potential project impacts to gobies and their habitat in the lagoon:

> *Indirect impacts from construction would only include downstream sediment flushing during sediment removal. However, 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. Therefore, no specific conservation measures are proposed for the tidewater goby. BMPs listed in the Mitigation Measures will reduce the likelihood for accidental releases or chemical contaminants as well as reducing turbidity impacts to waters below the dam.*

The Corps concluded that the proposed project is designed to not adversely affect lagoon hydrodynamics, recent restoration projects at the lagoon, the long-term health of the lagoon, or the tidewater goby and its habitat in Malibu Lagoon.

The Commission concludes that restoring a more natural sediment transport regime on Malibu Creek, placing in the nearshore zone near the mouth of Malibu Creek approximately 278,000 cu.yds. of clean sandy sediments trapped behind Rindge Dam, and monitoring (and if necessary modifying) sediment placement activities would be consistent with Coastal Act goals for protection of marine habitat and resources. The Commission finds that the proposed project represents the least environmentally damaging feasible alternative to returning trapped sediments back to the littoral zone near the mouth of Malibu Creek.

As noted above, the consistency determination acknowledges that the restoration project's resource protection and mitigation plans, including those applicable to the placement of sediments in nearshore waters, will not be completed until the project enters the future Pre-Construction Engineering and Design phase of development. The Corps has committed to provide copies of these plans to the Executive Director for review prior to the start of any construction activity. Should the Executive Director identify shortcomings in the content of any of these plans regarding protection of marine habitat and resources, and if the Corps and the Executive Director are unable to resolve any disagreements over the plans, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect on coastal resources that is substantially different from what was originally described and anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations (cited previously in Section III.D.).

The Corps has committed to: (1) protect marine resources during dam removal activities; (2) incorporate marine resource protection into the final design of the restoration of a more natural sediment transport regime on Malibu Creek; (3) implement monitoring and adaptive management measures; (4) submit to the Executive Director final project design and resource protection and mitigation plans; and (5) submit a supplemental consistency determination should the project change (or should new or different effects on marine resources be identified) between now and the expected start of construction in 2025. Given these commitments, marine resources and biological productivity in the project area will be maintained and restored, and project mitigation measures regarding sediment suitability, nearshore placement area, and monitoring will serve to minimize potential adverse environmental effects arising from the project. Therefore, the Commission finds the proposed project consistent with the marine resource protection policies of the Coastal Act (Sections 30230, 30231, and 30233).

G. SAND SUPPLY

Coastal Act Section 30233 states in part:

> *(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.*
>
> . . .
>
> *(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

The Corps reports that a deficit of sand to the shoreline at the mouth of Malibu Creek occurred during the time period after construction of Rindge Dam in 1926 and the mid-1940s when the reservoir was essentially filled with sediment up to crest of the dam. Sediments impounded by Rindge Dam would have naturally washed out to the ocean, with sands and cobbles entering the littoral zone and ultimately drifting predominantly downcoast to nourish beaches between Malibu and Santa Monica. The surface of the impounded reservoir is now a series of large gravel bars with Malibu Creek meandering through them to the spillway and dam crest where, depending on flow volumes, water and sediment cascade over the 100-foot-tall barrier into a plunge pool and continue downstream to the Pacific Ocean. The *DIFR/EIS/EIR* describes the impounded sediment characteristics (**Exhibits 6 and 9**), noting that the former Rindge Dam reservoir is entirely full of sediment and that the surface is a series of gravel bars with Malibu Creek meandering through them. Approximately 278,000 cu.yds. of sandy sediments are estimated to be retrievable out of the estimated 780,000 cu.yds. of sediment impounded behind the dam. The sand-dominant unit is overlain by a gravel-dominant layer and underlain by a silt-dominant layer. Pre-reservoir alluvium is not present in large quantities and is proposed to be left in place for natural riparian and stream bottom substrate.

Excavation and nearshore placement of sandy sediments would occur over a three-year period during the dry seasons. The Corps proposes to return the trapped sandy sediments to nearshore waters downcast of the Malibu Pier, where the sediments would have naturally ended up absent Rindge Dam. The *DIFR/EIS/EIR* states that the project includes trucking the sandy sediments directly from the Rindge Dam impounded reservoir site along Malibu Canyon Road, Las Virgenes Road, and U.S. Highway 101 to barges located at the Ventura Harbor. The 1,500 cu.yd. capacity barges (dump scows) would transport the material via tugboat downcoast and place the

sands in the nearshore area east of Malibu Pier in a location that does not adversely affect submerged aquatic vegetation. The sands will be placed landward of the depth of closure (an approximate water depth of 23 feet) allowing the sands to eventually move shoreward.

As noted earlier in this report in Section III.F, the sediments proposed for nearshore placement have been tested and preliminarily determined to be physically and chemically suitable for placement. However, the Corps will implement additional physical and chemical sediment testing prior to the start of excavation and will continue testing throughout excavation of the impounded sediment reservoir in order to ensure continued suitability for nearshore placement. In addition, and as noted previously, sediment placement has been designed to avoid sensitive habitat areas in nearshore waters and to be placed in the zone of closure to maximize retention of sands along the shoreline. After completion of project construction, Malibu Creek would return to a more natural flow regime through Malibu Canyon. While the volume of sediments eventually reaching the ocean after project completion would essentially be the same as current volumes, the elimination of the dam and impounded sediment reservoir will provide for winter storm and runoff events to more naturally transport sediments from the Malibu Creek watershed to the ocean and shoreline.

The consistency determination acknowledges that the restoration project's required sediment analysis and suitability determinations will not be completed until the project enters the future Pre-Construction Engineering and Design phase of development. The Corps has committed to work with the DMMT and the Executive Director to obtain concurrence with physical and chemical sediment suitability determinations prior to the start of any construction activity. Should the Executive Director identify shortcomings with the determinations regarding suitability of sediment for nearshore placement, and if the Corps and the Executive Director are unable to resolve any disagreements over the determinations, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect on coastal resources that is substantially different from what was originally described and anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations (cited previously in Section III.D.).

Sections 30233(b) and (d) require that nearshore disposal of sediments must be suitable for such a use, must avoid significant disruption to marine habitats, and must be placed into suitable longshore current systems. The Corps has committed to: (1) protect marine resources during nearshore placement of clean sandy sediments; (2) implement monitoring and adaptive management measures for all elements of the project, including sediment placement in nearshore waters; (3) submit to the Executive Director final project design and resource protection and mitigation plans; and (4) submit a supplemental consistency determination should the project change (or should new or different project effects on sand supply be identified) between now and the expected start of construction in 2025. Given these commitments, clean sands currently

trapped behind Rindge Dam will be transported to nearshore waters. Sediment placement has been designed to avoid sensitive habitat areas and to be placed in the zone of closure to maximize retention of sands along the shoreline. Therefore, the Commission finds the proposed project consistent with the sand supply policies of the Coastal Act (Section 30233(b) and (d)).

H. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30210 states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act Section 30213 states in part:

> *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.*

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30223 states:

> *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

The project's two primary objectives, restoration of steelhead habitat in Malibu Creek and its tributaries and restoration of sediment supply to downcast beaches, are both consistent with the intent of these Coastal Act policies. Regarding recreational areas at and adjacent to the project area, the California Department of Parks and Recreation operates Malibu Creek State Park and Malibu Lagoon State Beach. While a large portion of the project area falls within the boundary of the State Park, including Rindge Dam and the impounded sediment area, the immediate vicinity surrounding this area contains no designated hiking trails or recreational areas due to limited accessibility, the steep terrain, and existing public safety restrictions at the dam and spillway.

The consistency determination examines unsanctioned public use in the dam and spillway area:

> *Sheriff's Overlook is closed to public access due to the potential use by people attempting to illegally access Rindge Dam and associated life safety concerns, as well as potential damage to structures and habitat. Within the immediate area*

> *surrounding Rindge Dam there are no formal hiking trails and limited recreational use due to limited accessibility, although trespassing and illegal recreation does occur. Closure of this area during construction would have minimal or no impact on recreation resources as other portions of Malibu Creek State Park would remain open during construction. As a result of the closure, the project will not increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated due to the existing limited usability of the area for recreational purposes. Upon completion of construction activities any debris or equipment located at Sheriff's Overlook would be cleared from the area. At the end of construction, the site will be used as a turnout for viewing the canyon, with interpretive signage about the dam and its historical significance. This site would be similar, but larger than, other existing turnouts along Malibu Canyon Road. All other existing turnout areas along Malibu Canyon Road would remain open throughout construction.*

The *DIFR/EIS/EIR* examines the effects on recreation from nearshore placement of sediments:

> *Disposal of beach compatible material offshore utilizing a barge would avoid any use of the Malibu Pier parking area and beach, and would therefore avoid any temporary closures or potential recreational impacts at the location. The barge routes and exact offshore placement area would also avoid any impacts to prime surfing areas along Surfrider Beach and Malibu Point.*

Sand will be placed in the nearshore zone downcast of Malibu Point. The net direction of sediment in this area is downcast to the east, and project sediment placement is not expected to interact with the surfing areas upcoast and adjacent to Surfrider Beach and Malibu Point. The *DIFR/EIS/EIR* states:

> *The shoreline change model shows some increased beach width near Malibu lagoon but will return to the normal levels by the end of the placement window. This increased beach width will not alter the waves at Malibu Point but may cause the waves to break slightly further offshore for a short period of time.*

The consistency determination acknowledges that the restoration project's final design decisions, including interpretive facilities at Sheriff's Overlook, will not be completed until the project enters the future Pre-Construction Engineering and Design phase of development. Should the Executive Director identify shortcomings with the design of such facilities, and if the Corps and the Executive Director are unable to resolve any disagreements over these facilities, the matter will be brought before the Commission for a public hearing and Commission review. The Commission also notes that should the proposed nearshore placement of sediments from the Rindge Dam impounded reservoir become associated with adverse changes to surf breaks at Surfrider Beach and Malibu Point, the Executive Director and the Corps will work together to determine if there is a causal relationship between sediment placement and changes in surf breaks, and whether modifications to sediment placement would be necessary in order to protect this recreational activity. If resolution is not achieved, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect

on coastal resources that is substantially different from what was originally described and anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations (cited previously in Section III.D.).

The Commission agrees that because there are no designated safe public access and recreation areas at Rindge Dam or the impounded sediment reservoir, the proposed dam and spillway removal and excavation of impounded sediments will not adversely affect public access or recreation at those locations. The Commission also agrees that (1) nearshore sediment disposal will not adversely affect public shoreline recreation but may lead to increased downcast beach widths and associated recreational benefits; (2) the Malibu Pier parking area and beach will not be closed; and (3) the barge routes will avoid impacts to prime surfing areas. In addition, the Corps has committed to: (1) ensure that surfing is not adversely affected by nearshore placement of sediments downcast of Malibu Pier; (2) implement monitoring and adaptive management measures for all elements of the project, including sediment placement in nearshore waters; (3) submit to the Executive Director final locations of nearshore disposal sites; and (4) submit a supplemental consistency determination should the project change (or should new or different effects on surfing or other shoreline recreational activities be identified) between now and the expected start of construction in 2025. These facts and commitments mean that the project will not adversely affect: (1) the achievement of maximum public access; (2) the protection of lower cost visitor and recreational facilities in the form of beaches, surfing spots, hiking trails, and viewing spots; (3) the protection of coastal areas suited for water-oriented recreational activities; again in the form of beaches and surfing spots; or (4) the reservation of upland areas suitable for coastal recreational uses. Therefore, the Commission finds the proposed project consistent with the public access and recreation policies of the Coastal Act (Sections 30210, 30213, 30220, and 30223).

I. HAZARDS

Coastal Act Section 30253 states:

> *New development shall do all of the following:*
>
> *(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

(c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.

(d) Minimize energy consumption and vehicle miles traveled.

(e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses.

The project holds the potential to create two types of geologic hazards: slope instability during and after excavation of the impounded sediments behind Rindge Dam, and increased downstream flood risks after removal of the dam and impounded sediment. The *DIFR/EIS/EIR* addresses the slope stability issue:

The removal of the lateral force and vertical force loads now being maintained by the mass of the impounded sediment could potentially destabilize canyon walls (bedrock) surrounding the sediment basin as the sediment and dam are removed. Instability in the form of creep or sliding is a concern and could potentially be activated if existing slopes are undercut or are inadvertently loaded with fill.

The removal of the lateral force load from the dam arch could potentially destabilize canyon walls, which have to some extent been supported by the dam for nearly 100 years. No related slope stability exploration or study has been funded or undertaken. This evaluation will have to be done prior to the onset of sediment removal. Additional concern is stability of the canyon walls related to changes in groundwater characteristics. The bedrock under the impound area has been unnaturally saturated continuously (or intermittently) by groundwater at an elevation as much as 100 feet higher than would occur naturally (if the dam were not present). Ground water that remains within the ascending slopes has a destabilizing effect. Elevated pore pressures create a buoyant effect that reduces internal friction and hence the resisting forces within the lower portion of the slope. Elevated groundwater levels also reduce the strength of the clay material typically found along joint fractures and clay seams within the rock. The net effect is landsliding which is most likely to occur when groundwater levels are high and the excavation of impounded sediment has removed lateral support at the base of slope or toe. No related slope stability exploration or study of this potential condition has been funded or undertaken. This evaluation will have to be done prior to the onset of sediment removal.

In conjunction with the stability of the canyon slopes, retaining walls associated with Malibu Canyon Road and utility lines may be impacted by canyon slope instabilities [**Exhibit 15**]. *If slope instabilities impact the retaining walls and/or utilities or cause failure of them, significant cost and schedule impacts would occur so that repairs can be made. The current configurations of the retaining walls and their foundations are currently unknown and would need to be evaluated at future stages. Utility lines and foundations are also unknown and would need to be*

> *evaluated at future stages as well. This evaluation would be in conjunction with and along similar lines of investigation as those required for the canyon slopes.*
>
> *Erosion and scour that may occur in localized parts of the canyon, after the dam and impounded sediment are removed could provide additional sources of slope and infrastructure instability.*

The Corps states in the consistency determination that all necessary additional slope stability studies and evaluations will be undertaken during the future Pre-Construction Engineering and Design phase of the project. The results of these studies would outline the project design, safety, stabilization, and mitigation measures needed to ensure that the project does not adversely affect existing public infrastructure (e.g., Malibu Canyon Road) adjacent to the dam and impounded reservoir. Currently, however, the project only includes the following mitigation measures addressing potential slope stability hazards:

> ***ER-1. Stabilization of Slopes****. Stabilization measures to the extent practical will be implemented to protect Malibu Canyon Road, and other areas as determined necessary from landslide and soil destabilization effects that may be produced by the proposed project as determined by a slope stability exploration and geotechnical evaluation to be conducted prior to project construction.*
>
> ***ER-2. Implement Best Management Practices (BMPs).*** *Prior to construction the construction contractor shall prepare an erosion-control and spill response plan will be prepared and implemented to include erosion-control best-management practices during construction, including re-vegetation 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, dewatering sediments, diverting water around construction through pumping and/or piping, development of slope stability measures for groundwater saturation, construction ramp stability measures, and erosion-control measures at disposal sites.*

The Commission does not have sufficient information at this time to be able to fully determine whether these measures will adequately address the aforementioned slope stability hazards associated with the project. Regarding the potential destabilization of canyon walls from the removal of the dam and impounded sediment, and from changes in groundwater characteristics of the bedrock underneath the impounded sediment, the *DIFR/EIS/EIR* states:

> *No related slope stability exploration or study has been funded or undertaken. This evaluation will have to be done prior to the onset of sediment removal.*

Regarding retaining walls that support Malibu Canyon Road and utility lines in the corridor, the *DIFR/EIS/EIR* states:

> *The current configurations of the retaining walls and their foundations are currently unknown and would need to be evaluated at future stages. Utility lines*

> *and foundations are also unknown and would need to be evaluated at future stages as well. This evaluation would be in conjunction with and along similar lines of investigation as those required for the canyon slopes.*

The Corps' mitigation measures, which call for future slope stability exploration and geotechnical evaluations, are themselves not a substitute for the documentation currently required to support a finding that the removal of the dam and impounded sediments will not lead to geologic hazards along the slopes above and adjacent to the immediate project area. Additional geotechnical evaluations of slope stability and any associated measures needed to prevent slope instability and failure will be needed before the Commission can finally conclude that the project would be consistent with the geologic hazard policy of the Coastal Act. The project is currently at the feasibility study stage of development, and the necessary geotechnical studies will not be undertaken and published until the future Pre-Construction Engineering and Design (PED) phase of the project is underway.

Therefore, the Commission determines that the project would be consistent with the geologic hazard policy by implementing the following procedure. As provided for in the subject consistency determination, the Corps will submit to the Commission future geotechnical reports developed during the project's Pre-Construction Engineering and Design phase. Those reports will: (1) evaluate slope stability hazards associated with the removal of Rindge Dam and its impounded sediment reservoir; (2) include any stabilization measures necessary to protect Malibu Canyon Road, utility lines, and other areas adjacent to the project area; and (3) conclude that the proposed project, including any required slope stabilization measures, will not create geologic hazards that would adversely affect existing public infrastructure in the project area. Upon receipt of those reports, the Executive Director will: (1) prepare a summary of the geotechnical reports for Commission review; (2) make a recommendation to the Commission as to whether the project, with any slope stabilization measures that are included in the geotechnical reports, remains consistent with the geologic hazard policies of the Coastal Act; (3) make a recommendation to the Commission as to whether a supplemental consistency determination is required from the Corps in order for the Commission to review new project elements (i.e., slope stabilization measures) not currently proposed in the subject consistency determination; and (4) schedule a public hearing for the Commission to review and act on such recommendations.

With this procedure for future Commission review of project geotechnical reports, and at this feasibility stage of project development, the Commission finds that construction of the proposed restoration project will include a procedure for Commission review and approval of slope stabilization measures that will ensure the project is implemented consistent with the geologic hazard policy of the Coastal Act.

Regarding potential downstream flooding impacts, the Corps identified the following constraint that limited the scope of project development:

> *Maintain the downstream baseline condition level of flood risk along lower reaches of Malibu Creek within the Serra Canyon residential community and businesses in the City of Malibu, avoiding potential for adverse flood-induced impacts associated with the consideration of upstream ecosystem restoration measures.*

Certain developed areas in the City of Malibu downstream of Rindge Dam are currently subject to sporadic flooding events. During the initial phase of the project feasibility study, the Corps assumed that Rindge Dam was still accumulating sediment. However, further investigations and modeling confirmed that the dam had reached its storage capacity with the current volume of impounded sediment. As a result, during peak events the entire flow of Malibu Creek overtops the dam's crest and it transports sediment eroded from the watershed to downstream reaches of Malibu Creek and the ocean (**Exhibit 16**). During low-flow regimes, small volumes of sediment are collected across the surface of the impounded reservoir until larger storm events mobilize and transport these sediments over the dam and downstream to the ocean.

The *DIFR/EIS/EIR* states:

> *There are flood concerns along lower Malibu Creek even under current conditions. Several residential and commercial areas downstream of the canyon mouth are at risk of flooding during events more frequent than the 1% ACE* [annual chance exceedance] *event. Significant deposition would be expected in these reaches even if the dam is not removed which will increase the flood risk. Up to 12 ft of deposition in some locations could be expected in the lower reaches over the next 50 years.*
>
> . . .
>
> *Subsequent to the hydraulic analyses of the initial array of alternatives, the PDT* [Project Delivery Team] *reviewed the results and concluded there was a significant flood risk downstream even under the No Action alternative. Therefore, natural transport was not considered a viable alternative because it would only exacerbate the downstream flood risks. Therefore, it was concluded that the TSP* [Tentatively Selected Plan] *should be based on mechanical removal of sediments.*

The *DIFR/EIS/EIR* addresses the potential for increased sediment deposition downstream of Rindge Dam during and subsequent to the proposed removal of the dam and impounded sediments:

> *The sediment transport analysis completed for the project indicates a small potential for induced sediment deposition, for Alternative 2 in comparison to Alternative 1* [the without-project or No Action alternative], *downstream of the Dam. After 10 yrs, in Malibu Lagoon (Reaches 1 and 2a), stream deposition would average 2.5 to 4.8 ft, in comparison to 2.4 to 4.4 ft 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.*
>
> *In Reach 2b, just upstream of Malibu Lagoon, 10-yr deposition would average 5.1 ft, in comparison to 4.1 ft for the without-project condition. Most reaches of Malibu Creek show a similar trend over the 50-yr period of simulation, with less than a*

> *foot difference in bed elevation between Alternative 2a and Alternative 1 in all reaches except Reach 5, which is immediately downstream of the Dam, at 50 yrs (Appendix B has more detailed description of stream deposition). Sediment deposition can result in shifting and destabilized stream channel morphology that could adversely affect adjacent areas and property through erosion and widening the stream channel. Sediment transport simulation shows the ultimate bank-full width/depth ratio of Malibu Creek for Alternative 2 for to be within 10% of the without-project description.*

The *DIFR/EIS/EIR* also examined the impact of the proposed project on downstream flood risk, compared to the risk associated with the No Action alternative (i.e., leaving the dam in place), using simulated streambed elevations. The report found that in Malibu Creek segments downstream of the canyon mouth, where commercial and residential areas are located, the modeled increases in streambed elevation are very small at most locations (less than 0.3 ft), with a maximum increase of 1.0 ft. The associated modeled increases in water surface elevation are less, with a maximum increase of 0.7 ft. The report concludes that even with the simulated increases in water surface elevation associated with the proposed project, there is no discernable increase in the 100-year floodplain boundary over that which exists by leaving the dam in place (**Exhibit 17**). The Corps concluded that the proposed project would not lead to increased downstream flood risks as compared to the existing level of flood risk with the dam in place.

The Commission agrees with the Corps' conclusion that the proposed project would not lead to: (1) a significant increase in slope stability hazards adjacent to the impounded sediment reservoir with implementation of slope stabilization measures; or (2) increased flood hazards downstream along Malibu Creek over the flood hazard that currently exists with the dam in place. The proposed project includes the incremental removal of the dam and impounded sediments over a seven-year period. The multi-year undertaking allows the Corps to monitor the stability of slopes adjacent to the impounded reservoir, monitor the downstream effects of dam and sediment removal, and make adjustments to the project and/or implement flood control measures should unanticipated project effects require such measures. In addition, the Corps notes that the existing level of slope stability analysis and hydraulic and sediment modeling for the proposed project is commensurate with the current planning feasibility study, and that additional modeling and analysis may be required during the future Pre-Construction Engineering and Design phase of the project.

Should future modeling results indicate that the project would lead to significant increased slope stability and/or flood hazards, the Corps would need to submit a supplemental consistency determination to the Commission to address project modifications and/or additional mitigation measures required to bring the project into conformance with the hazards policies of the Coastal Act. If the Corps determines no supplemental consistency determination is warranted, it will still provide the Executive Director with the modeling results and analysis to support its determination. If agreement cannot be reached between the Corps and the Executive Director regarding the need for a supplemental consistency determination, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect on coastal resources that is substantially different from what was originally described and

anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations (cited previously in Section III.D.).

The Corps' inclusion into the project of: (1) monitoring and adaptive management measures; (2) a commitment to coordinate with the Executive Director regarding any modifications to the project and its resource protection and mitigation measures that are developed during the Pre-Construction Engineering and Design phase of the project; and (3) a commitment to submit a supplemental consistency determination should the project change (or should new or different geologic or flood hazards be identified) between now and the expected start of construction in 2025, enable the Commission to find the proposed project consistent with the geologic and flood hazard policies of the Coastal Act (Section 30253).

J. CULTURAL RESOURCES

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

The *DIFR/EIS/EIR* examines local prehistory and history to provide a context for analysis of potential project effects on cultural and archaeological resources:

> *The Santa Monica and Malibu coastal areas represent one of the most intensely studied archeological regions in the state of California. A century of formal and informal research has generated considerable information regarding the area's prehistoric cultural development (Baldwin 1996; Morrato 1984). Investigations of the native Chumash and Gabrielino/Tongva of the region have provided insight into the development of complex hunter-gatherer societies in coastal southern California.*
>
> *Archeological data indicate that prehistoric occupation of the California south-central coast dates to at least 9,500 yrs before present (BP) (Erlandson and Colten 1991), with even earlier evidence from the Channel Islands, including a date from Santa Rosa Island of 13,000 BP (Ritsh 1999).*
>
> . . .
>
> *The first account of European contact in the region was the 1542 Cabrillo expedition, which visited the "Pueblo de las Canoas," reportedly the village of Muwu near Point Mugu at the western end of the Santa Monica Mountains,*

although some claim that it may also have been the village of Humaliwo at the mouth of Malibu Lagoon. In 1602, the Vizcaíno expedition was greeted by Chumash people in a canoe from Muwu, although the Europeans did not come ashore. The first land expedition, under Gaspar de Portolà traveled across southern California, staying at the village at Encino, and then proceeded north to the Santa Clara River, and then west toward Saticoy. Their return route followed roughly the modern route of Highway 101, through the interior of the western Santa Monica Mountains. Several additional expeditions in the late 1700s provided accounts of the region (King 2009:7-9).

The San Buenaventura Mission was established at Ventura in 1782, followed by the San Fernando Mission in 1797. The missions recruited converts and workers from nearby village sites, and much of the native population of the Santa Monica Mountains was brought into one of the two missions as evidenced by the baptismal records which documented village names and kinship ties. The establishment of the missions drastically altered the existing social organization of the California Native Americans. As neophytes brought into the mission system, they were transformed from hunters and gatherers into agricultural laborers and exposed to diseases to which they had no resistance. By the end of the Mission Period in 1834, the Native American population had been decimated by disease and declining birthrates. Population loss as a result of disease and economic deprivation continued into the next century.

The Corps reports that excavation of the impounded sediments behind Rindge Dam and construction activities at the Sheriff's Overlook site along Malibu Canyon Road hold the potential to affect archaeological resources associated with the Chumash and Gabrielino/Tongva people. As a result, the project includes the following resource protection and mitigation measures:

CR-1: Archaeological Monitoring of Earth Moving Activities at Rindge Reservoir. *Because the reservoir behind Rindge Dam is filled with 780,000 cy in sediments, it is unknown whether archaeological sites were buried during sedimentation. Therefore, a qualified archaeologist and/or Native American monitor shall monitor earth removal activities as needed where the native stratigraphy (i.e. along the canyon walls and bottom) becomes exposed in order to locate, record and assess impacts to any buried archaeological resources. As the project intent is solely to remove sediments built up since the dam was constructed, no further excavation should be required once the originally topography is reached. Therefore, implementation of this archaeological monitoring requirement would reduce any potential impacts to unknown archaeological deposits to a less than significant level.*

CR-4: Incorporation of Interpretive Exhibits and Restoration of the Sheriff's Honor Camp site. *Following project completion, the Sheriff's Honor Camp site will be restored as an interpretive road turnout with overlooks of the Rindge Dam*

site and Malibu Canyon. Interpretive exhibits explaining the historical significance of Rindge Dam and the historic and prehistoric significance of the Malibu Canyon area will be developed and installed in consultation with CDPR interpretive and cultural resource staff. A qualified archaeologist will monitor construction of the interpretive overlook in order to ensure that there are no impacts to historic properties.

The consistency determination also documents the consultation the Corps has undertaken with Native American tribes and individuals since 2013:

Section 106 of the NHPA, the American Indian Religious Freedom Act of 1978 (Public Law 95-341; 42 U.S.C. 1966), and Executive Order 13175 of November 6, 2000 (Consultation and Coordination with Indian Tribal Governments), all require that government agencies consult with Native Americans to determine their interests in federal projects.

On May 6, 2013, the USACE requested via fax, a list of Native American groups and individuals associated with the APE vicinity from the NAHC. The NAHC provided the list via emailed letter on May 7, 2013. The letter provided by the NAHC also included the results of a Sacred Lands File search conducted for the APE and indicated that Native American cultural resources have not been identified within the APE. A revised list was requested and received via email on March 29, 2016. The 2016 letter provided by the NAHC noted that sites on the Malibu Beach quadrangle may be impacted by the project. A California Assembly Bill 52 (AB52) notification was also provided by CDPR for one Tribe.

On April 13, 2016, the USACE mailed a consultation meeting invitation for a meeting on April 29, 2016, to the Native American groups and individuals indicated by the NAHC. CDPR called individuals on the list on April 22, 2016 to provide a reminder about the meeting. The USACE made follow-up calls and sent reminder emails on April 25 and April 27, 2016 regarding the meeting to everyone on the NAHC list.

An initial Tribal Consultation Meeting was held on April 29, 2016; representatives from the Santa Ynez Band of Chumash Indians, Wishtoyo Chumash Foundation, and the Tongva Ancestral Territorial Tribal Nation attended in person or via teleconference.

The Corps concluded in the consistency determination that based on the Native American consultation conducted to date, the Malibu Ecosystem Restoration Project area should be considered sensitive for Native American resources, particularly given the potential for discovery of artifacts within the impounded sediments. Consultation required under Section 106 of the National Historic Preservation Act, CEQA, and Corps of Engineers and California Department of Parks and Recreation tribal consultation policies is ongoing and will continue through the Pre-Construction Engineering and Design phase of the project. Should consultation determine that additional archaeological resource protection and/or mitigation measures are required, in part to

bring the project into conformance with the archaeological resource policies of the Coastal Act, the Corps will submit those measures to the Executive Director for review. If agreement cannot be reached regarding the adequacy of the additional resource protection measures, staff will bring the matter back to the Commission for a public hearing on the question of whether the project is likely to have an effect on coastal resources that is substantially different from what was originally described and anticipated and, as a result, the project no longer appears consistent with the California Coastal Management Program.

The Commission retains its statutory ability to conclude that such changes have occurred and to request that the Corps take appropriate remedial action in such a situation, including submission of a supplemental consistency determination, pursuant to the re-opener provisions of 15 CFR §930.45 and §930.46 of the NOAA federal consistency regulations (cited previously in Section III.D.).

In conclusion, the Corps' incorporation into the project of: (1) monitoring and adaptive management measures, in particular during the excavation of the impounded sediments; (2) a commitment to coordinate with the Executive Director regarding any modifications to the project and any archaeological resource protection and mitigation measures that are developed during the Pre-Construction Engineering Design phase of the project and/or during ongoing consultation with the State Historic Preservation Officer; and (3) a commitment to submit a supplemental consistency determination should the project change (or should new or different impacts to archaeological resources be identified) between now and the expected start of construction in 2025, enables the Commission to find the proposed project consistent with the archaeological resource policy of the Coastal Act (Section 30244).

SUBSTANTIVE FILE DOCUMENTS

1. CD-0006-17 (U.S. Army Corps of Engineers, Malibu Creek Ecosystem Restoration Project, Los Angeles and Ventura Counties).
2. Malibu Creek Ecosystem Restoration Study, Draft Integrated Feasibilty Report (IFR) with Environmental Impact Statement/Environmental Impact Report (EIS/EIR), with Appendices A – Q, Los Angeles and Ventura Counties.
3. National Marine Fisheries Service letter to California Coastal Commission, January 17, 2018.
4. Biological Assessment and Section 7 Consultation for Malibu Creek Ecosystem Restoration Project, U.S. Army Corps of Engineers, September 2017.
5. Southern California Dredged Material Management Team, Final Meeting Minutes for February 27, 2013, and January 28, 2015, meetings.
6. CD-053-04 (U.S. Army Corps of Engineers, Removal of Matilija Dam, Ventura County).
7. Coastal Development Permit 4-07-098 (California Department of Parks and Recreation. Malibu Lagoon Restoration Project, Los Angeles County).

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

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CD-0006-17 (CORPS OF ENGINEERS)

February 15, 2018

EXHIBITS

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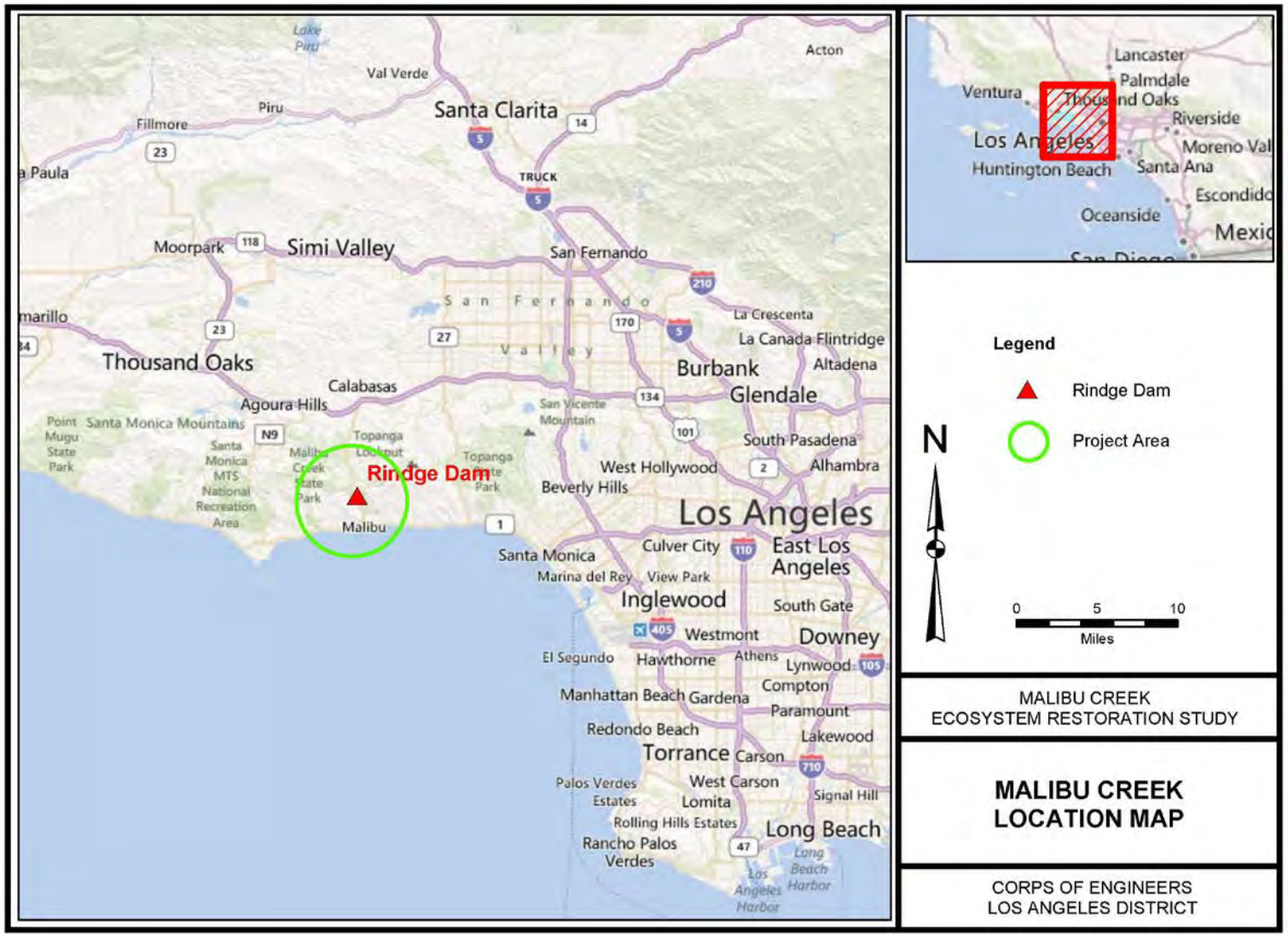

Plate 9.1-1 Malibu Creek Location Map

Exhibit 1
CD-0006-17

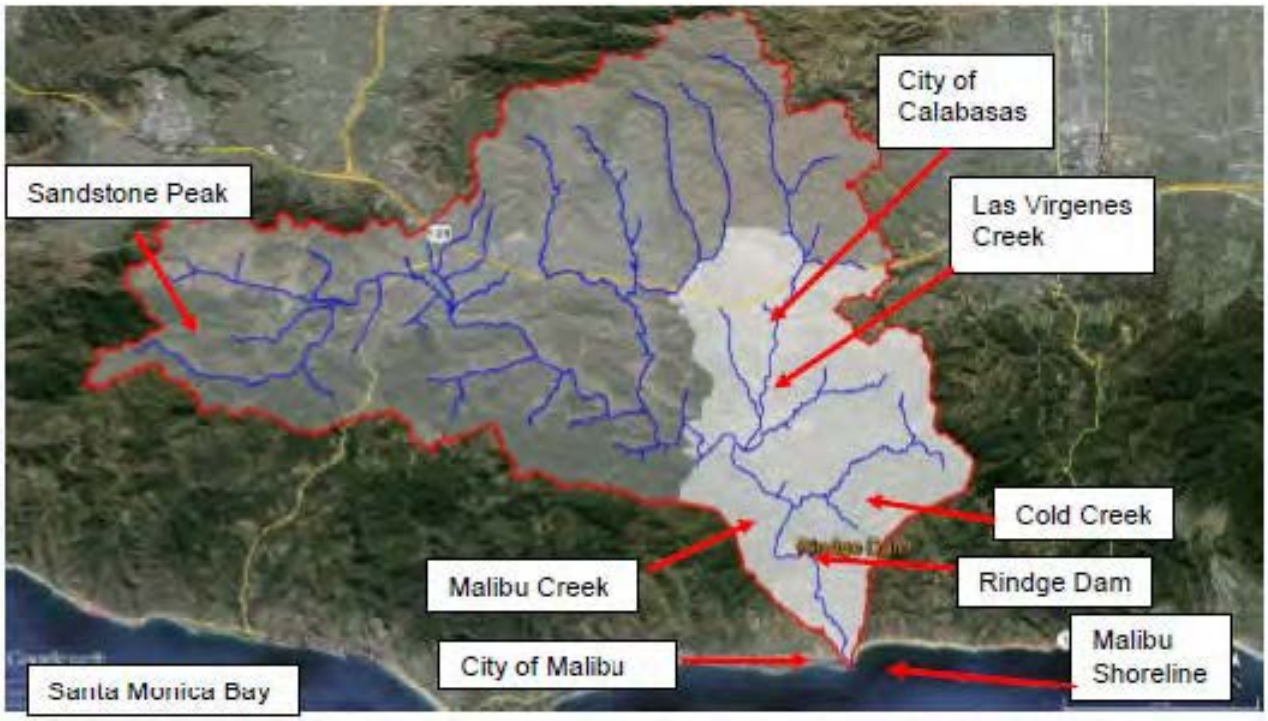

Figure 1.9-1 Malibu Creek Watershed Study Area and Project Area (Shaded)

Exhibit 2
CD-0006-17

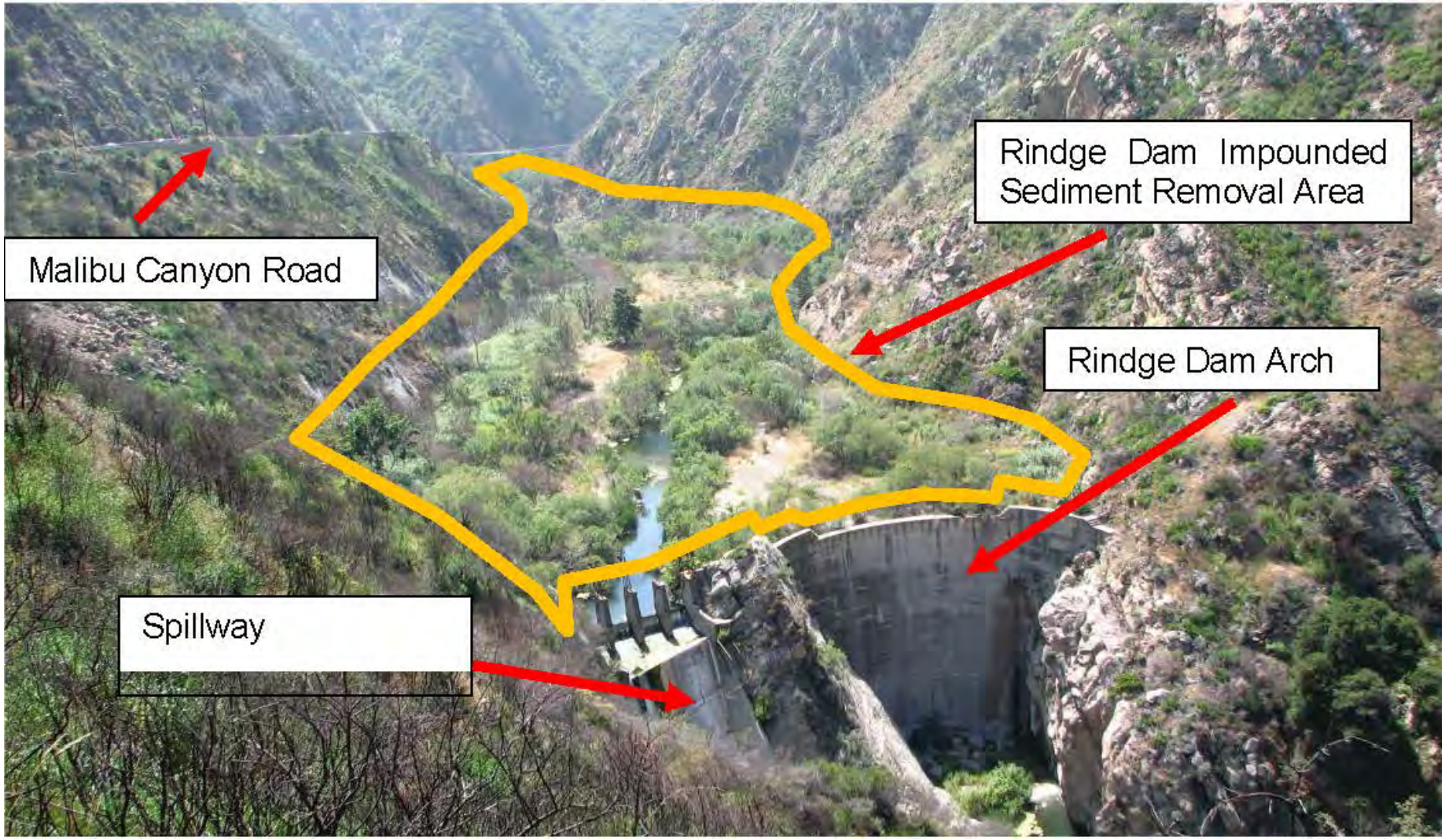

Figure 2 Extent of Rindge Dam Impounded Sediment

Exhibit 3
CD-0006-17

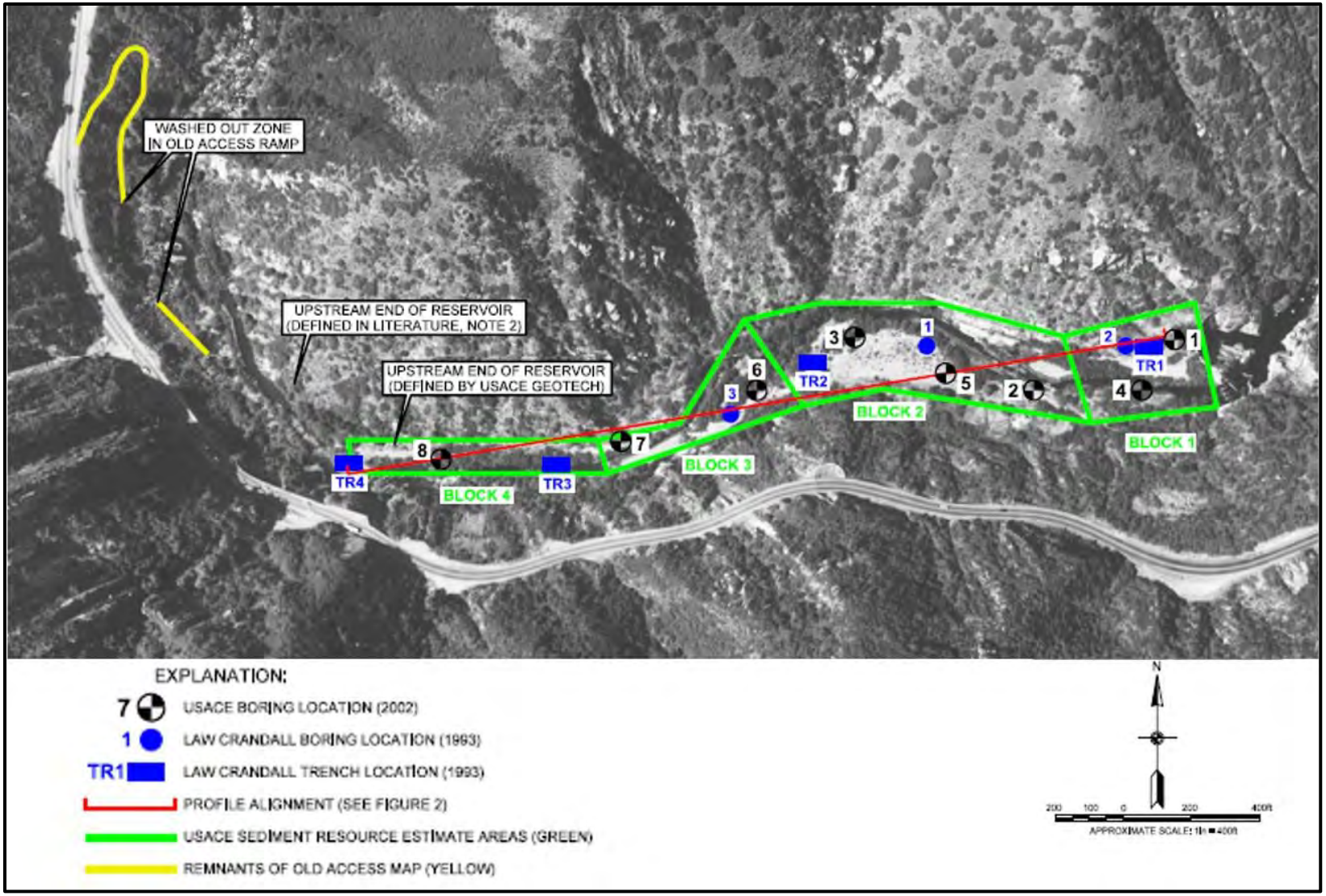

Figure 3.2-3 Extent of Rindge Dam Impounded Sediment

Exhibit 4
CD-0006-17

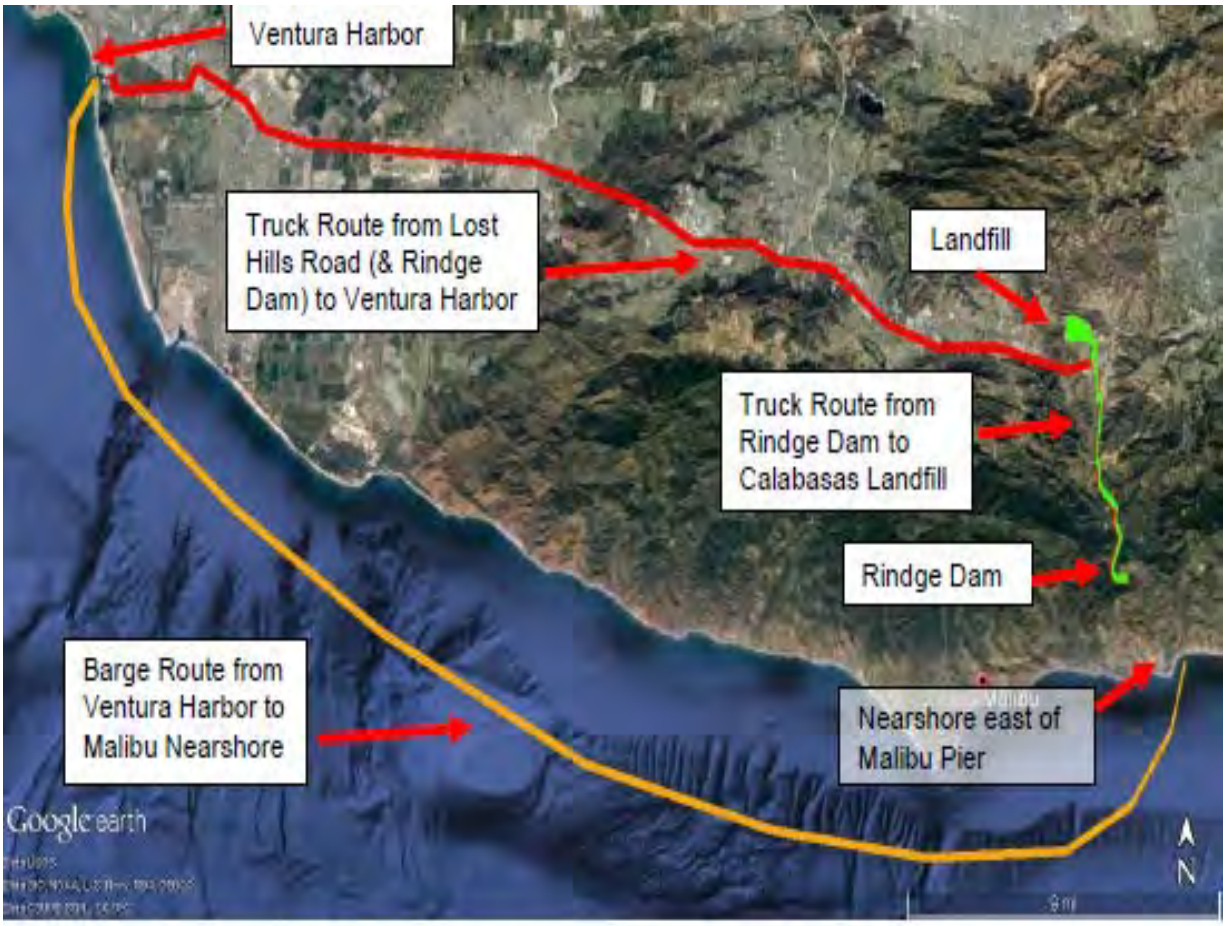

Figure 1.8-1 - Likely LPP Truck to Barge

Exhibit 5
CD-0006-17

Figure 4: Layers of Impounded Sediment

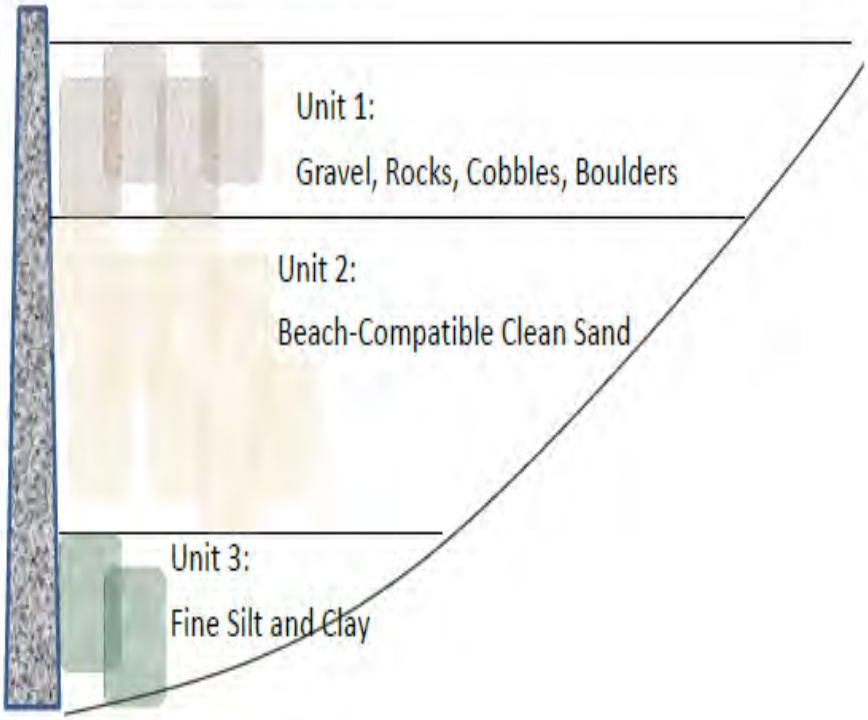

Exhibit 6
CD-0006-17

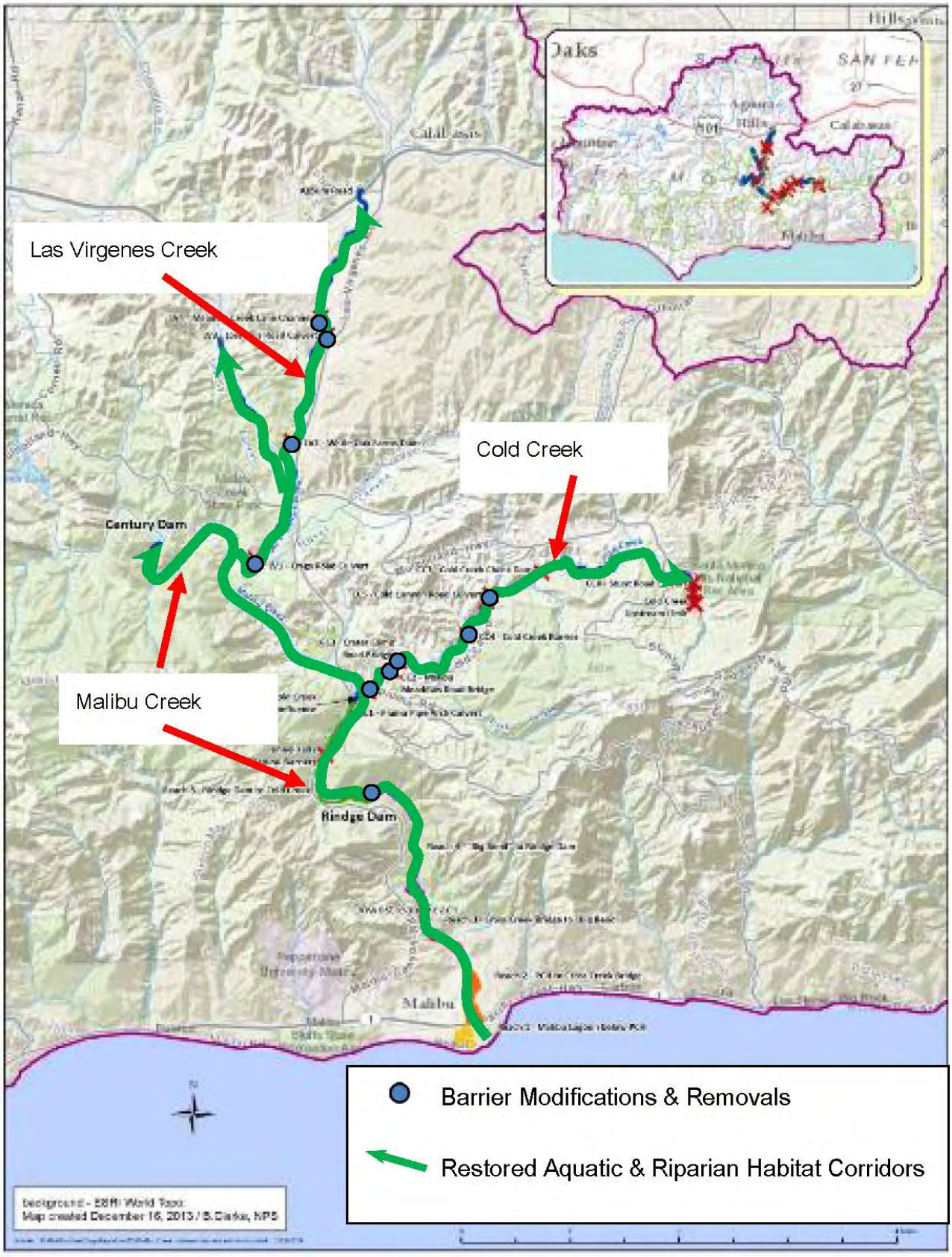

Figure 4 Restored Aquatic Habitat Connectivity - Upstream Barriers

Exhibit 7
CD-0006-17

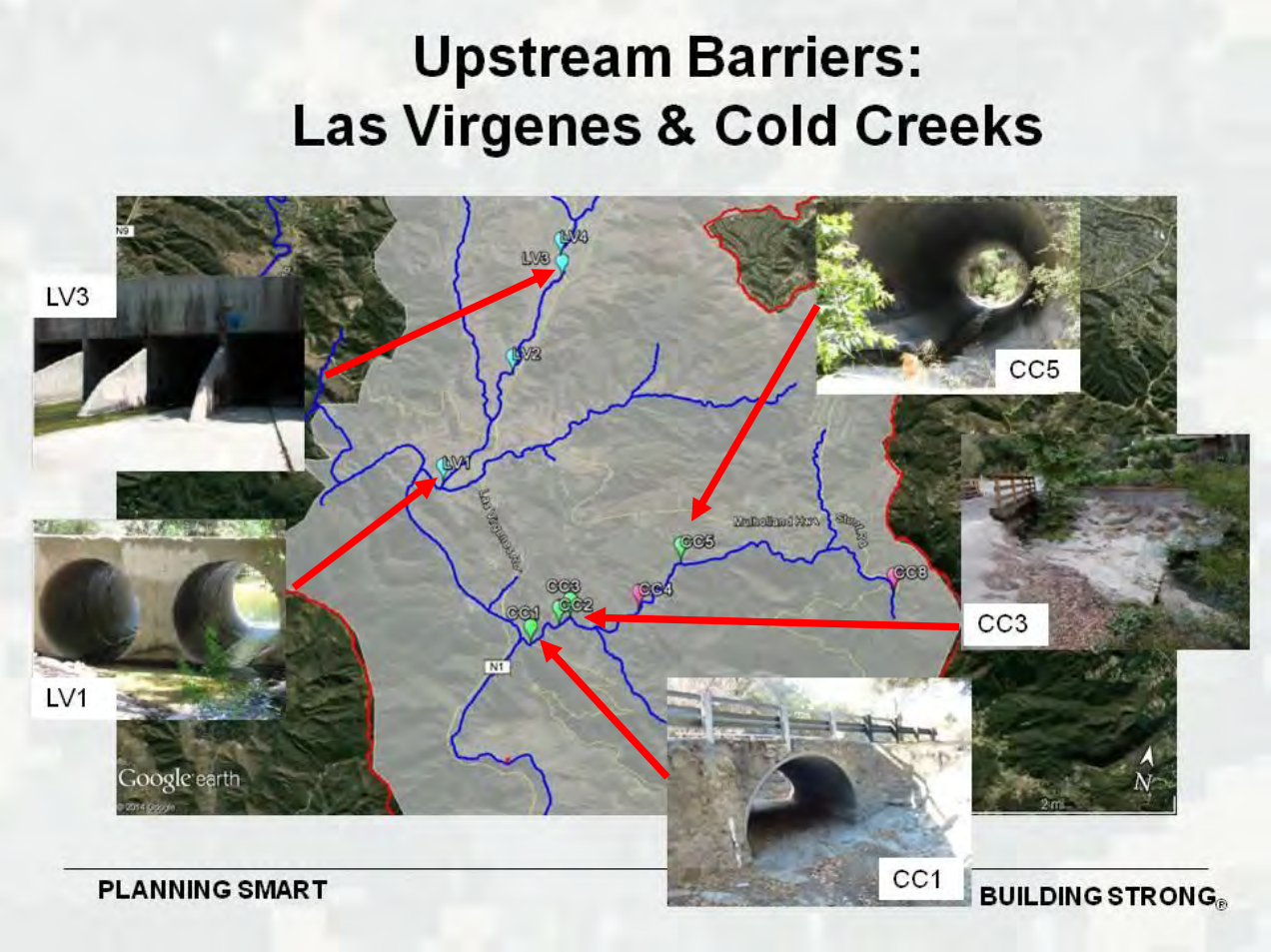

Figure 4.4-13 - Upstream Barriers

Exhibit 8
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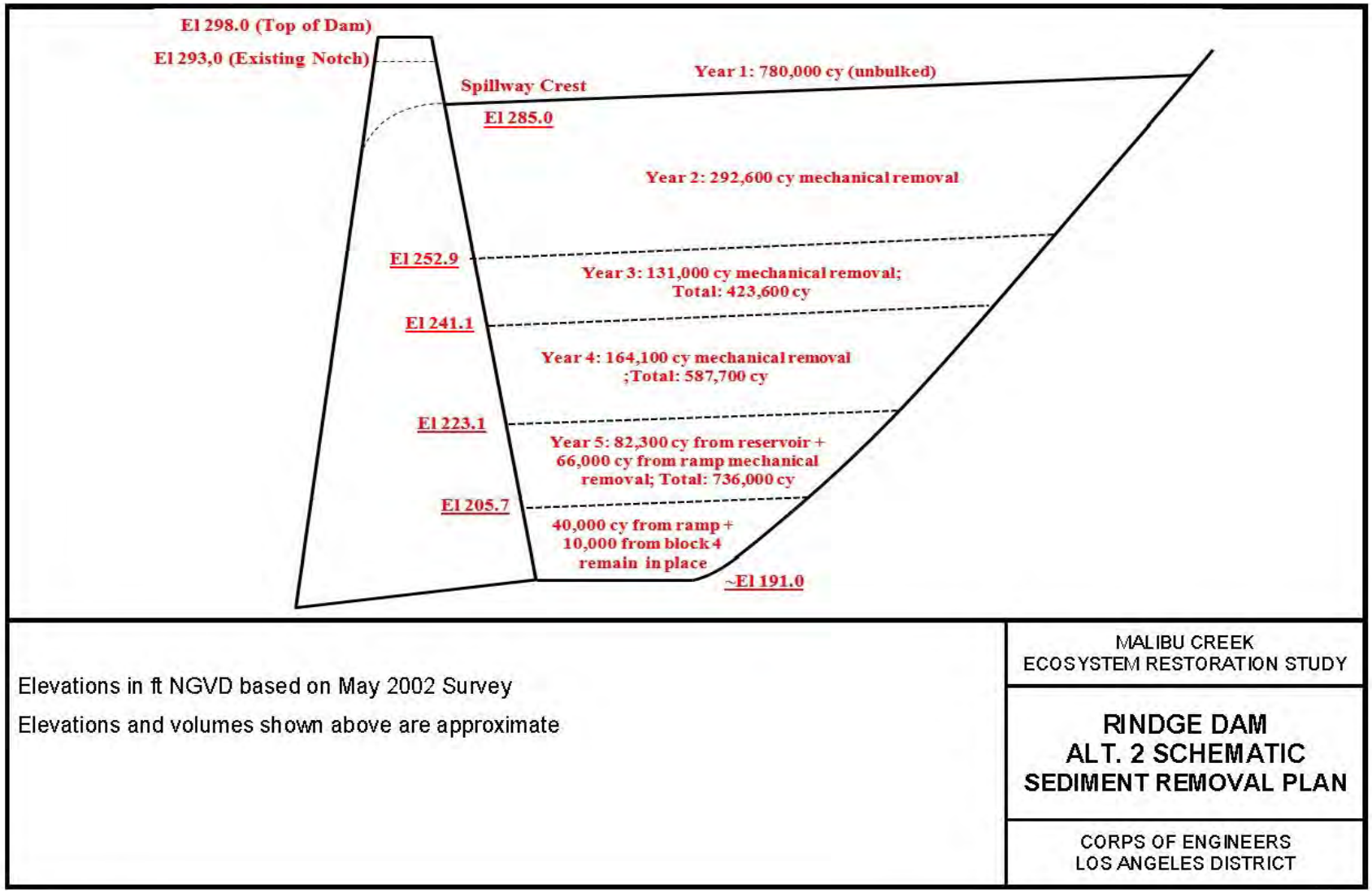


Plate 16.3-1 Rindge Dam - Alt. 2 Schematic Sediment Removal Plan

Exhibit 9
CD-0006-17

1 **Table 4.4-2 - Summary Description of the Focused Array of Alternatives**

2

	Alternative 1	Alternative 2a Alternative 2c	Alternative 2b Alternative 2d	Alternative 3a Alternative 3c	Alternative 3b Alternative 3d	Alternative 4a Alternative 4c	Alternative 4b Alternative 4d
Description	No Action	Rindge Dam Arch Removal Mechanical Transport	Rindge Dam Arch Removal Mechanical Transport Upstream Barriers	Rindge Dam Arch Removal Natural Sediment Transport	Rindge Dam Arch Removal Natural Sediment Transport Upstream Barriers	Rindge Dam Arch Removal Mechanical Transport and Natural Sediment Transport	Rindge Dam Removal Mechanical Natural Sediment Transport Upstream Barriers
Alt. Summary	Rindge Dam 100-foot high arch (and spillway) would remain in-place without modification. Age of structure may be an integrity issue. Impounded sediment behind Rindge Dam to remain with some temporary deposition between storms. Risk of downstream flooding increases over time due to aggrading channel. Reach below Rindge Dam will degrade 5 to 10 feet reaching equilibrium in about 100 yrs. Approx 2 ft of deposition likely to occur in lower reaches below the Dam. Costs may be incurred to maintain dam safety and provide flood risk mgmt measures in downstream areas.	Remove Rindge Dam arch over 7-8 years while removing impounded sediment to minimize downstream adverse impacts to habitat and flood risk. Truck all 780k CY of impounded sediment to Calabasas Landfill or to shoreline/ nearshore site(s). Screen boulders and cobbles from sand delivered to the shoreline. Opens up about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 2c:** Adds spillway removal to Alt 2a features while removing arch to lessen habitat disturbance, improve safety, and aesthetic purposes. 2a1, 2c1: shoreline placement 2a2, 2c2: nearshore placement	Same as 2a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up a total of about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 2d**: Adds spillway removal to Alt 2b features. 2b1, 2d1: shoreline placement 2b2, 2d2: nearshore placement	Incrementally remove Rindge Dam arch over decades (20-100 yrs) in 5 foot lifts, waiting for impounded sediment to be naturally transported downstream with winter storm flows, repeating until structure is completely removed. Assumed timeframe for removal: 40-100 yrs. No need for trucks to transport sediment to Calabasas Landfill or beaches. Trucks needed to transport dam/ spillway concrete to landfill. Floodwalls required for increased flood risk to Serra Retreat & City of Malibu: 10 ft high and 3,100 feet long on west side & 2,700 feet long on east side, from Cross Creek Rd to PCH. After decades, reconnects about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 3c:** Adds spillway removal to Alt 3a features	Same as 3a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 3d:** Adds spillway removal to Alt 3b features.	Similar to 2a, with allowance for controlled volume of natural sediment transport during winter storm seasons over 7-8 construction timeframe. Remove Rindge Dam arch while removing impounded sediment and notch height of arch by additional 5 ft each year to allow for storms to mobilize sediment. May allow for up to 130K CY to naturally transport downstream. Truck at least 520K CY of 780k CY of impounded sediment to Calabasas Landfill and remainder to shoreline / nearshore site(s) Floodwalls required for increased flood risk to Serra Retreat & City of Malibu: 5 ft high and 3,100 feet long on the west side & 2,700 feet long on east side, from Cross Creek Rd to PCH. Opens up about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 4c:** Adds spillway removal to Alt 4a features. 4a1, 4c1: shoreline placement 4a2, 4c2: nearshore placement	Same as 4a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 4d:** Adds spillway removal to Alt 4b features. 4b1, 4d1: shoreline placement 4b2, 4d2: nearshore placement

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

January 17, 2018

Larry Simon
California Coastal Commission
45 Fremont Street
Suite 1900-2000
San Francisco, California 94105-2219

Dear Mr. Simon:

NOAA's National Marine Fisheries Service (NMFS) is pleased to support the Army Corps of Engineers' (Corps) Malibu Creek Ecosystem Restoration Project (Project). The Project involves the removal of Rindge Dam and a number of upstream fish-passage barriers on Malibu Creek for the purposes of restoring natural ecosystem processes and providing access to historical spawning and rearing habitats in the upper basin for endangered steelhead (*Oncorhynchus mykiss*).

Consultation between NMFS and the Corps on this Project is ongoing, for the purpose of addressing potential impacts of the Project on endangered steelhead and designated critical habitat for this species. At this time, a resolution of the impacts that is mutually acceptable to NMFS and the Corps is anticipated.

Malibu Creek is one of three "Core 1" watersheds within the Santa Monica Mountains Biogeographic Population Group identified in NMFS' Southern California Steelhead Recovery Plan[1]. Core 1 watersheds must be protected and restored if the federally endangered southern California steelhead are to be recovered. The removal or physical modification of Rindge Dam is an essential action to reinstate habitat connectivity and promote access of this species to its historic spawning and rearing habitats. Therefore, the Project is important for the recovery of endangered steelhead.

Overall, NMFS greatly appreciates the Corps' ongoing commitment to carry forward and ultimately complete the Project in a manner that protects endangered steelhead and designated critical habitat for this species. Please contact Jay Ogawa at (562) 980-4061 if you have a question concerning this letter or if you would like additional information.

Sincerely,

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

cc: Larry Smith, Army Corps of Engineers, L.A.
Administrative file: 151422WCR2018CC00008

Exhibit 11
CD-0006-17

[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

Figure 3. Map depicting the approximate shoreline placement (green – NER) and nearshore placement (red – likely LPP) locations.

Exhibit 12
CD-0006-17

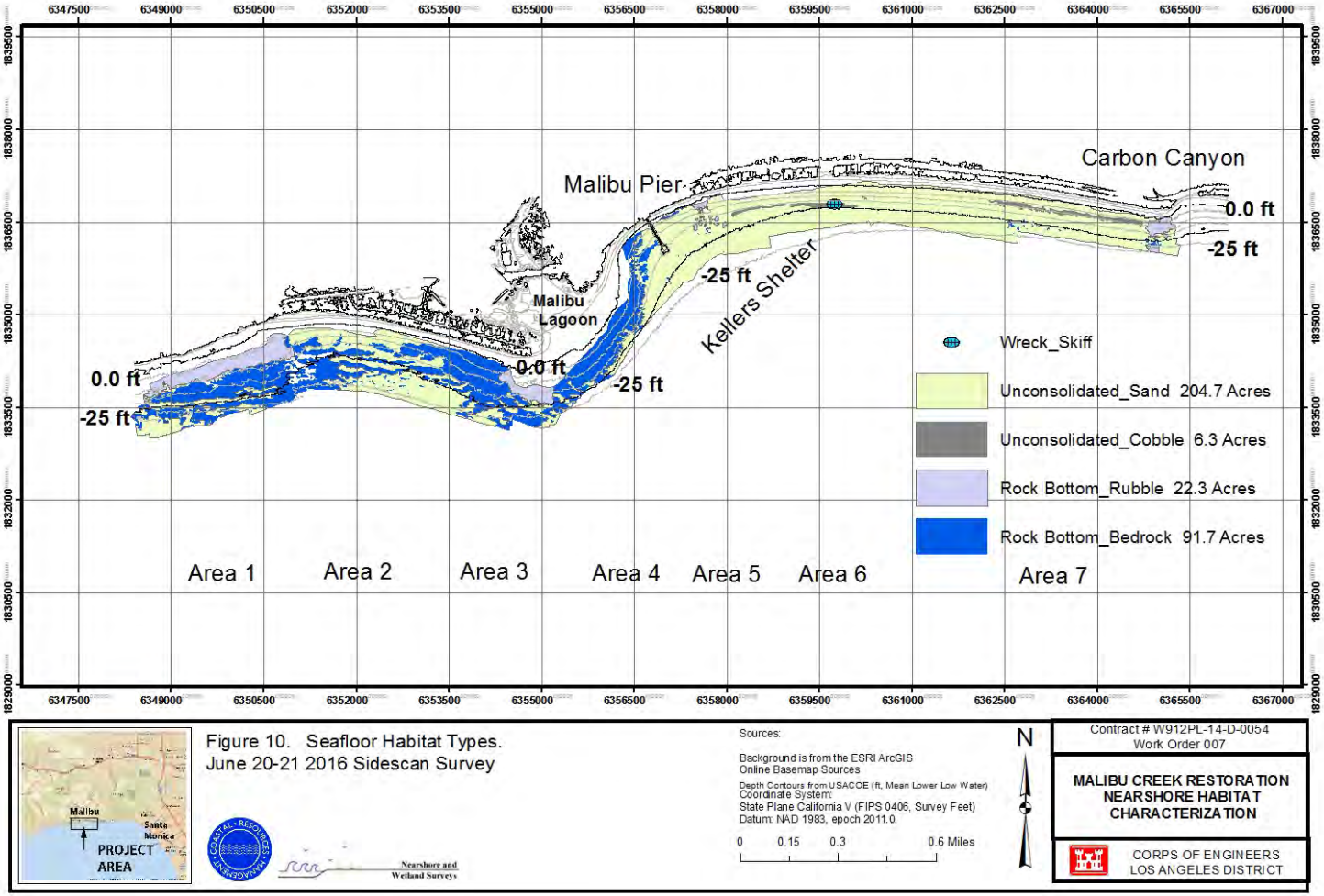


Figure 3.4-3 - Nearshore Seafloor Habitat Types (from USACE 2016)

Exhibit 13
CD-0006-17

Figure 1.10-2 - Malibu Shoreline Nearshore Habitat Characterization

Exhibit 14
CD-0006-17

Figure 2-1 Rindge Dam

Exhibit 15
CD-0006-17

Exhibit 16
CD-0006-17

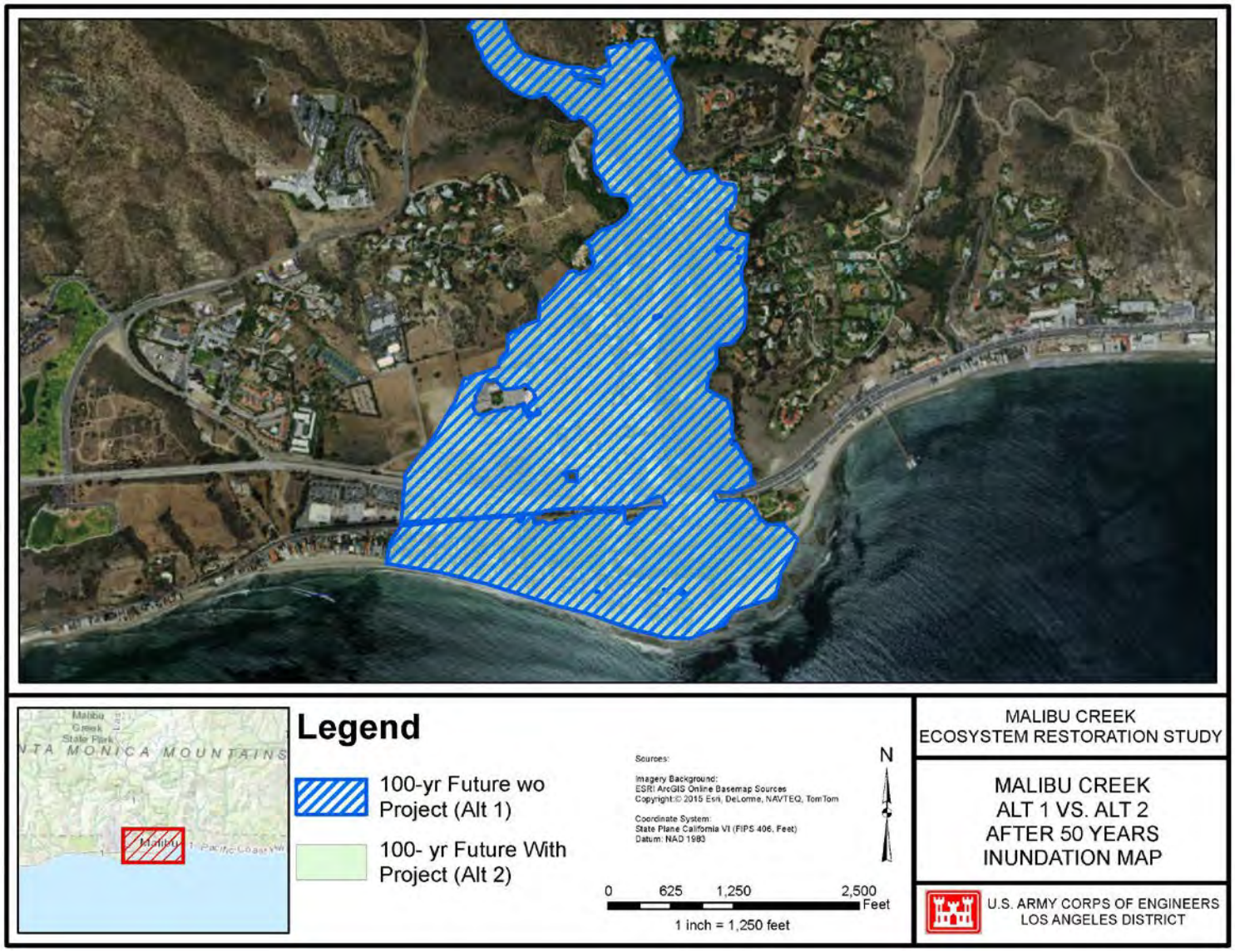


Plate 19.1-4 Malibu Creek Alt. 1 vs. Alt. 2 after 50 Years Inundation Map

Exhibit 17
CD-0006-17

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

F 11a

CD-0006-17 (CORPS OF ENGINEERS)

February 15, 2018

CORRESPONDENCE

Caroline E. Lee
D: 310.746.4485
CLee@elkinskalt.com

ELKINS
KALT
WEINTRAUB
REUBEN
GARTSIDE LLP

January 31, 2018

VIA U.S. MAIL AND E-MAIL

Mr. Larry Simon
Federal Consistency Coordinator
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219
E-Mail: Larry.Simon@coastal.ca.gov
EORFC@coastal.ca.gov

Re: Malibu Creek Ecosystem Restoration Project
Consistency Determination No. CD-0006-17 – Request for Continuance

Dear Mr. Simon:

Our office represents the Serra Canyon Property Owners Association (the "SCPOA"), an association of approximately 110 property owners and a retreat center in the Serra Canyon area of the City of Malibu ("City"). Serra Canyon is located approximately two miles downstream from Rindge Dam and adjacent to Malibu Creek. The SCPOA will incur significant affects resulting from any action concerning the Malibu Creek Ecosystem Restoration Project ("Project'"), including the Coastal Commission's Federal Consistency Determination No. CD-0006-17 ("Consistency Determination"), due to its location in the Project area.

Neither the SCPOA, nor individual Serra Canyon property owners of which we are aware, received notice of the Coastal Commission's February 7, 2018 agenda until the City alerted the SCPOA of the Consistency Determination item as a courtesy by email on January 24, 2018. As an interested party, SCPOA respectfully requests the Coastal Commission continue the Consistency Determination until the March 7-9, 2018 or the April 11-13, 2018 meeting so that SCPOA receives sufficient time to analyze the full impacts of the Coastal Commission action and allow the Commission to consider the item at a location closer to the Project area so that the SCPOA and its consultants can appear.

Importantly, while certain Serra Canyon residents may have received notice, SCPOA received no formal notice of the Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report ("IFR") with Environmental Impact Statement/Environmental

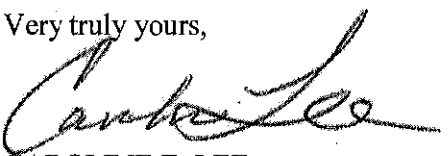
Impact Report ("EIS/EIR") (collectively, "Draft IFR") circulated on January 2017. In our preliminary review, the Draft IFR incorrectly states that the "Serra Retreat Community" was included in the planning process through its involvement in the Technical Advisory Committee ("TAC"). It is our understanding that, while individual Serra Canyon property owners may have attended early meetings, the SCPOA has not been involved in the TAC since approximately 2012. Similarly, Appendix Q of the Draft IFR includes the "Serra Retreat Community (Serra Canyon property owners)" by name on the distribution list, but provides no address, email, or contact name, suggesting no notice of the Draft IFR was ever sent.

SCPOA is clearly an interested party as the Project will significantly impact the SCPOA properties. For example, according to the Draft IFR, the Project poses significant downstream flood risks to the SCPOA properties located in the floodplain below the dam. Draft IFR, § 1.10.10 and Appendix B. SCPOA is in the process of retaining an environmental consultant to review and more thoroughly comment on the Draft IFR and the Federal Consistency Determination.

Thus, we respectfully request a continuance to the Coastal Commission hearing on the Consistency Determination to the March 7-9, 2018 or April 11-13, 2018 meeting to provide sufficient notice and sufficient time for SCPOA to comment and so that the meeting be held in a location where SCPOA members and consultants can attend.

Given the timing, we appreciate your prompt consideration of our request. Please do not hesitate to contact our office with any questions.

Very truly yours,



CAROLINE E. LEE
Elkins Kalt Weintraub Reuben Gartside LLP

cel:cel

cc: U.S. Army Corps of Engineers - Los Angeles District
Jim Hutchison, Planning Division, james.d.hutchison@usace.army.mil
California Department of Parks and Recreation
Craig Sap, District Superintendent, Craig.Sap@parks.ca.gov
Suzanne Goode, Senior Environmental Scientist, sgood@parks.ca.gov
City of Malibu
Reva Feldman, City Manager, RFeldman@malibucity.org

Simon, Larry@Coastal

From: Mark Bruschaber <mbruschaber@gmail.com>
Sent: Thursday, February 01, 2018 10:10 AM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

What a waste of time ,money, & resources !
Are you going to put the material in your pockets and carry it out Your excavation or dredging will cause more damage then good Find other more useful ways to spend tax payer money !

Sent from my iPhone

Simon, Larry@Coastal

From: Jason Anderson <jbaypobox@gmail.com>
Sent: Friday, February 02, 2018 7:50 AM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

As a native Californian at 50 years of age and avid Steelhead Fisherman/ Conservationist, it is extremely import that we do everything possible to help bring back this once abundant fish to the southern region. One of the requirements in doing so is bring back critical habitat that these fish once had, let's do everything we can to help make this happen that's why 11b-CD-0006-17 makes sense. I hope my grand kids get the opportunity to see the great fish once a flourish in Southern California Waters.
Sincerely,
Jason Anderson
Monterey, Ca.

Sent from my iPhone

Simon, Larry@Coastal

From: Bernard Yin <lariver@aol.com>
Sent: Friday, February 02, 2018 8:37 AM
To: Energy@Coastal
Subject: Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

Hello,
I wish to offer my voice of support that the Rindge Dam be removed. It is useless BUT remains effective in preventing the natural flow of sediment to the sea as well as the migration of the endangered steelhead trout. You know this I am sue but what sometimes seems forgotten is the effect that sediment has on maintaining a surfing location. Surfrider State beach and the legendary break at the mouth of Malibu Creek is a daily destination for hundreds of surfers and is a vital component of Malibu's economy and lore. - Please remove the dam.
Bernard Yin
Santa Monica, California

Simon, Larry@Coastal

From: Jim Burns <lariverflyfishing@gmail.com>
Sent: Friday, February 02, 2018 11:08 AM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

Dear Commissioners,

I've written and edited the blog www.lariverflyfishing.com for the past eight years. If you take a look at it, you'll find pictures of many types of warm-water fish caught in the Los Angeles River. In 2012, I wrote this piece about the slim possibility of the return of steelhead to its waters:

https://lariverflyfishing.com/2012/01/10/will-steelhead-ever-return-to-the-l-a-river/

It seems to be that removing the Rindge Dam would indeed bolster the chances at survival for this endangered, marker species. I hope that you will do everything in your power to make this a reality.

We are clearly in a new era, one in which we've realized that not all man-made waterway projects are good and that many are unnecessary as our technology has advanced, as well as our understanding of ecosystems.

I look forward to the day steelhead can once again freely access this important waterway so close to the Los Angeles River.

Sincerely,

Jim Burns
239 Pasqual Ave.
San Gabriel, CA 91775

Simon, Larry@Coastal

From: joanna fogarty <joannafogarty007@gmail.com>

Sent: Friday, February 02, 2018 3:08 PM
To: Energy@Coastal
Cc: joanna.fogarty937@myci.csuci.edu
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

As a student at Channel Islands University majoring in Environmental Science & Resource Management, I support the Local Preferred Plan. This project is very costly therefore, we should take full advantage of this opportunity and remove the dam in its entirety. Eventually, its removal will allow the slow restoration of Malibu Creek and the Steelhead Trout. The dam has negatively impacted the environment and its wildlife, as well as the residents of Malibu. Homeowners and beach goers face the consequences of sea level rise and beach erosion as a result of impeding the natural process of sediment transport. There has been a lot of discussion over the problems with replenishing sand at locations like Broad Beach. Instead of considering other sources of sediment, we should replenish Malibu beaches with Malibu Creek sediment. Although costly, the dam will eventually have to come down. The longer we wait, the more dangers we face down the line and the greater the costs will become. Thank you.

Joanna Fogarty

Simon, Larry@Coastal

From: k bens <karinbens@gmail.com>
Sent: Friday, February 02, 2018 4:03 PM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

I support California State Parks position on the Rindge Dam removal project. Dam removal is critical to restore access for aquatic species especially the federally endangered Southern California Steelhead.

Riparian habitat along Malibu Creek from the upper watershed to the Ocean should also be restored for safe migratory corridors for the terrestrial animals as well

Sincerely
Karin Benson
Topanga, CA

Simon, Larry@Coastal

From: Debbie Sharpton <debbie.sharpton@gmail.com>
Sent: Friday, February 02, 2018 4:24 PM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

The Sierra Pacific Flyfishers supports the Locally Preferred Plan for the Rindge Dam removal.

Sincerely,

Debra Sharpton
Conservation Chair
Sierra Pacific Flyfishers
Van Nuys, CA

Simon, Larry@Coastal

From: Fred Collins <fcollins@northernchumash.org>
Sent: Sunday, February 04, 2018 9:43 AM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 7 - Energy, Ocean Resources

Please see film below as the Northern Chumash Tribal Council comment for the above referenced public comment.

https://vimeo.com/216942495

Fred Collins
Tribal Administrator

Northern Chumash Tribal Council
P. O. Box 6533
Los Osos, CA 93412
805-801-0347
fcollins@northernchumash.org

Simon, Larry@Coastal

From: Marisa Kuizenga <marisa@themissionguild.com>
Sent: Sunday, February 04, 2018 4:14 PM
To: Energy@Coastal
Subject: Public Comment on February 2018 Agenda Item Wednesday 11b - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

To whom it may concern,

I am writing to say I am in favor of the proposal to remove the Rindge Dam and relocate the many cubic yards of sediment that has backed up behind it.

I believe this approach makes the most sense for the long term health of the surrounding aquatic and riparian environments and their associated wildlife, such as the endangered California Steelhead.

Thank you for taking my thoughts into account and for choosing to restore and protect this special area.

Sincerely,

Marisa Kuizenga
Topanga, CA

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

F 11a

CD-0006-17 (CORPS OF ENGINEERS)

February 15, 2018

EX PARTE COMMUNICATION

EX PARTE COMMUNICATION DISCLOSURE FORM

RECEIVED
FEB 01 2018

Filed by Commissioner: Mark Vargas

1) Name or description of project:

Application No. 5-17-0809 (Sanitation District No. 2 of Los Angeles County);
1-16 (LCP-5-SCL-16-0012-1 Comprehensive LUP Update);
CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.);

2) Date and time of receipt of communication:

February 1, 2018 at 10AM

3) Location of communication:
(If not in person, include the means of communication, e.g., telephone, e-mail, etc.)

Telephone

4) Identity of person(s) initiating communication:

Jennifer Savage, Surfrider Foundation

5) Identity of persons(s) receiving communication:

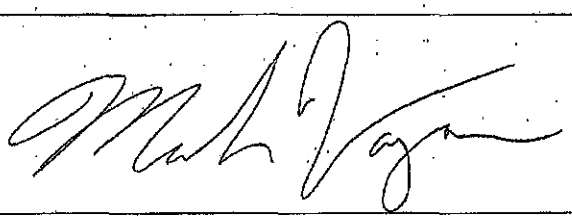
Mark Vargas

6) Identity of all person(s) present during the communication:

Mark Vargas, Jennifer Savage

7) Complete, comprehensive description of communication content (attach complete set of any text or graphic material presented):

Brief discussion to go over Surfrider's issues on this month's agenda. They are generally in support of the San Pedro Clearwater program of the Sanitation Districts of LA County, as well as the Army Corp's Rindge Dam removal in the Santa Monica Mountains. With regard to San Clemente's LCP, Sufrider believes it's important to push for conditions that define "existing development," and that restrict the ability to create more shoreline armoring.

February 1, 2018	**Signature** 

TIMING FOR FILING OF DISCLOSURE FORM: File this form with the Executive Director within seven (7) days of the ex parte communication, if the communication occurred seven or more days in advance of the Commission hearing on the item that was the subject of the communication. If the communication occurred within seven (7) days of the hearing, provide the information orally on the record of the proceeding and provide the Executive Director with a copy of any written material that was part of the communication. This form may be filed with the Executive Director in addition to the oral disclosure.

RECEIVED

FEB 02 2018

EX PARTE COMMUNICATION DISCLOSURE FORM

Filed by Commissioner: _____

1) Name or description of project: W11b CD-0006-17 (U. S. Army Corps of Engineers)

2) Date and time of receipt of communication: January 31, 2018 11:45 AM

3) Location of communication: telephone

(If not in person, include the means of communication, e.g., telephone, e-mail, etc.)

4) Identity of person(s) initiating communication: Suzanne Goode, Senior Environmental Scientist, California Department of Parks and Recreaton

5) Identity of person(s) on whose behalf communication was made: California Department of Parks and Recreation

6) Identity of persons(s) receiving communication: Commissioner Steve Padilla

7) Identity of all person(s) present during the communication: Suzanne Goode, Jamie King (Ca. State Parks), James Hutchison and Susan Ming (U. S. Army Corps of Engineers), Commissioner Padilla

Complete, comprehensive description of communication content (attach complete set of any text or graphic material presented):

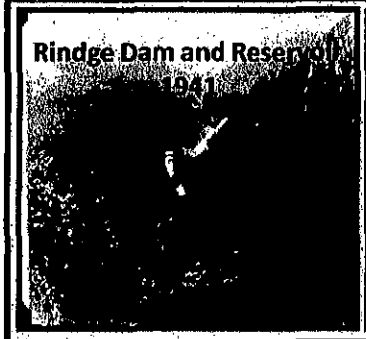
Benefits of project to connect and increase habitat for steelhead trout and replenishment of beach sand. The Corps explained that the sediment behind the dam has been tested and would be tested again prior to placement in the nearshore environment. The Corps also explained that any slope stability issues would also be explored prior to and during project implementation and that, if necessary, remedial measures would be taken. State Parks said the community of Serra Canyon and the City of Malibu had concerns regarding potential flooding, and that these concerns may not be resolved at this time, though they were discussed in individual and public meetings. State Parks also stated that there is support for the project in both the public and private sectors.

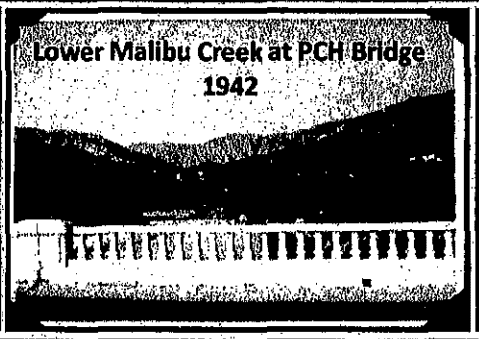
Feb 2, 2018
Date

Signature of Commissioner

TIMING FOR FILING OF DISCLOSURE FORM: File this form with the Executive Director within seven (7) days of the ex parte communication, if the communication occurred seven or more days in advance of the Commission hearing on the item that was the subject of the communication. If the communication occurred within seven (7) days of the hearing, provide the information orally on the record of the proceeding and provide the Executive Director with a copy of any written material that was part of the communication. This form may be filed with the Executive Director in addition to the oral disclosure.

MALIBU CREEK ECOSYSTEM RESTORATION FEASIBILITY STUDY
LOS ANGELES AND VENTURA COUNTIES, CALIFORNIA

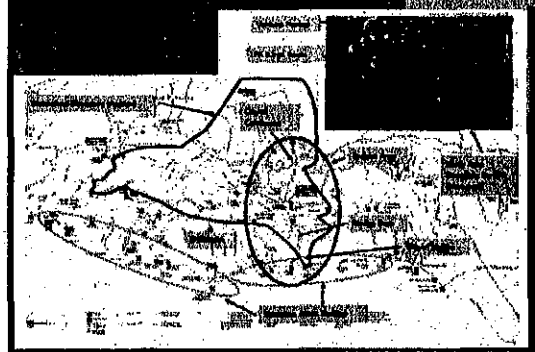




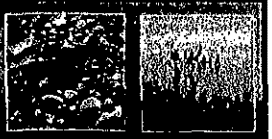
This study evaluates ecosystem restoration opportunities within the eastern portion of the Malibu Creek watershed along Malibu Creek from Century Dam to the Pacific Ocean, Cold Creek and Las Virgenes Creek tributaries, and the Malibu shoreline and nearshore area. Rindge Dam, a 100-foot obsolete water supply dam located three miles upstream of the Pacific Ocean trapped sediment for decades and is a migratory barrier to aquatic and terrestrial species. Addressing Rindge Dam and other partial to complete aquatic habitat barriers within the watershed allows for restoration of a significant regional and national resource.

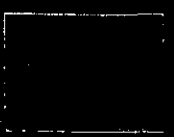
Reestablish habitat connectivity along Malibu Creek and tributaries in the next several decades

Restore aquatic habitat of sufficient quality along Malibu Creek and tributaries

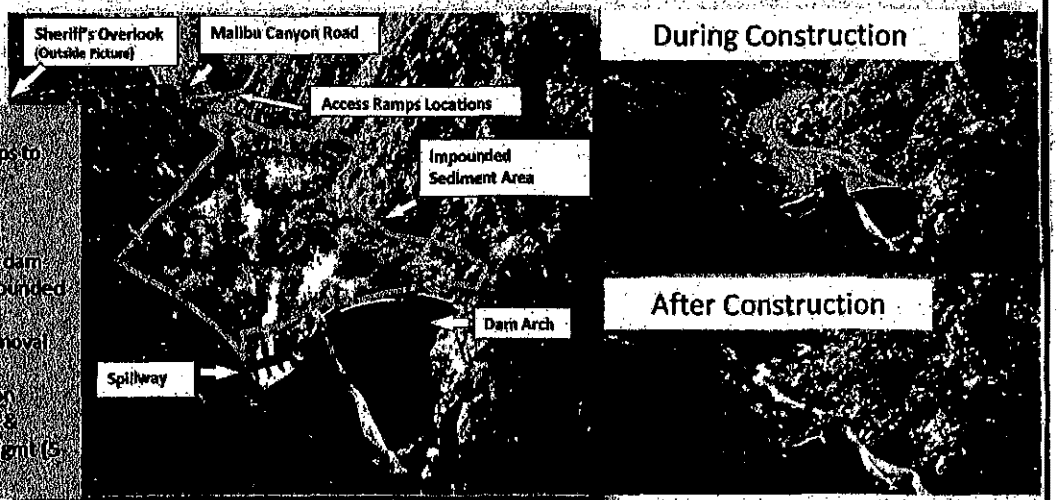


- Diversity of plant and wildlife species
- Malibu Creek is an important regional corridor
- Restoring aquatic habitat connectivity represents a unique opportunity for systematic and sustainable ecosystem restoration
- Malibu Creek is one of the last remaining habitats that support steelhead in the region.

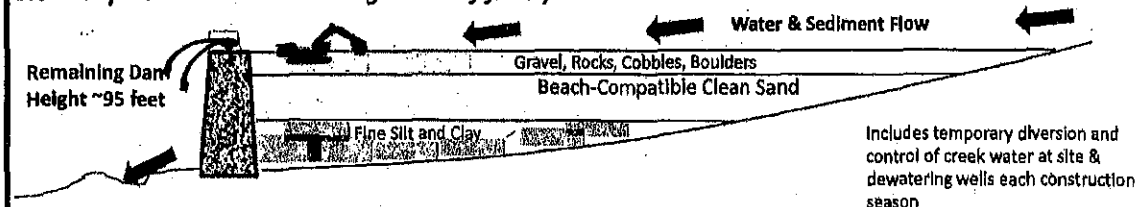




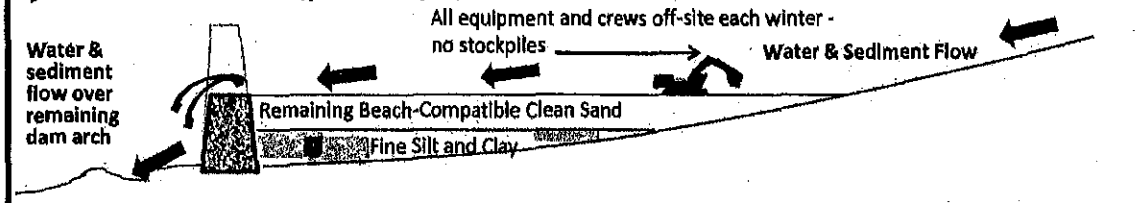
Plan includes:
- Access ramps to road
- Vegetation removal
- Removal of dam arch & impounded sediment
- Spillway removal (LPC only)
- Revegetation
- Monitoring & Adaptive Mgmt (5 yrs)

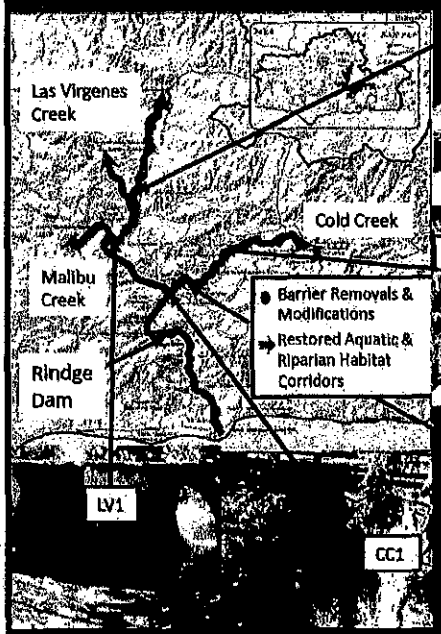


Site Prep & Excavation through end of first year



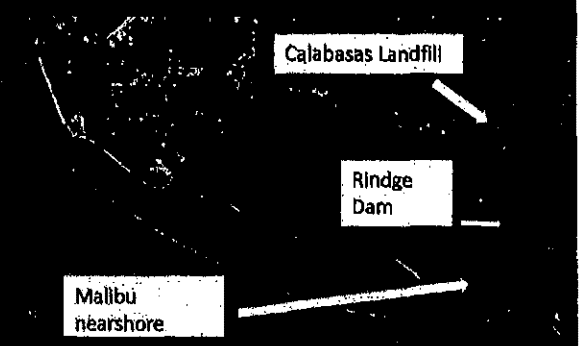
After mid-construction (years 3-5)





- Remove Rindge Dam Arch and spillway
- *Nearshore placement of mostly sands* from Rindge Dam (276,000 cubic yards) east of Malibu Pier, via truck transport to Ventura Harbor and barge.
- 2/3 of Rindge Dam impounded sediment goes to Calabasas Landfill
- Modification and/or removal of 8 upstream aquatic barriers

- Removing Rindge Dam alone opens up an additional 5.5 miles of good to excellent aquatic habitat along Malibu Creek (8.5 miles from ocean to other barriers.
- Addressing Upstream Barriers increases the total aquatic habitat connectivity to 18 miles from the ocean to upper portions of Malibu Creek and Las Virgenes Creek and Cold Creek tributaries.



FY17 PRICE LEVELS, 2.875% DISCOUNT RATE ($,000)

- Approximately 270 CY of mostly sands
- Temp benefits to downcoast shoreline

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

F 11a

March 7, 2018

To: Coastal Commissioners and Interested Persons

From: Alison Dettmer, Deputy Director
Larry Simon, Federal Consistency Coordinator

Subject: **Addendum to Consistency Determination CD-0006-17 (U.S. Army Corps of Engineers)**

This addendum provides correspondence that staff has received in response to our February 15, 2018, staff report on the above-referenced consistency determination, proposed revisions to that staff report, and staff's responses to the comments in that correspondence. The proposed modifications to the staff report do not change staff's recommendation that the Commission **concur** with CD-0006-17.

Correspondence Received and Attached Hereto

- Letter from Katherine Pease, Ph.D., Heal the Bay, to California Coastal Commission, February 26, 2018.
- Letter from Stefanie Sekich-Quinn and Graham Hamilton, Surfrider Foundation, to California Coastal Commission, March 1, 2018.
- Letter from Reva Feldman, City of Malibu, to California Coastal Commission, March 1, 2018.
- Letter from Kenneth A. Ehrlich, Elkins Kalt Weintraub Reuben Gartside LLP, to California Coastal Commission, March 2, 2018.
- Letter from John J. Waller, Law Office of John J. Waller, to California Coastal Commission, March 2, 2018.

Revisions to the Staff Report

Additions are shown below in <u>underline</u> and deletions in ~~strikethrough~~.

1. On Page 2, the third paragraph shall be corrected as follows:

Over a three-year period~~,~~ the project would place in the nearshore zone ~~near the mouth of Malibu Creek~~ downcoast of Malibu Pier approximately 278,000 cubic yards of clean sandy sediments trapped behind Rindge Dam.

2. On page 29, the first paragraph, lines 4 and 5 shall be corrected as follows:

. . . that reviews and approves the placement of ~~dreaded~~ dredged materials in ocean waters and on shoreline beaches . . .

3. On page 42, prior to the last paragraph, insert the following paragraph:

Upon completion of additional sediment and hydraulic modeling of flood hazards during the future Pre-Construction Engineering and Design phase of the project, the Corps will submit the modeling results and analyses to the Executive Director. Upon receipt of those reports, the Executive Director will: (1) prepare a summary of the sediment and hydrology reports for Commission review; (2) make a recommendation to the Commission as to whether the project, with any additional flood hazard protection and/or mitigation measures included in the reports as steps the Corps is committing to take, remains consistent with the flood hazard policy of the Coastal Act; (3) make a recommendation to the Commission as to whether a supplemental consistency determination is required from the Corps in order for the Commission to review new project elements (e.g., flood protection and mitigation measures) not currently proposed in the subject consistency determination; and (4) schedule a public hearing for the Commission to review and act on such recommendations.

Staff Response to Comments

The staff received letters supporting the project and letters raising questions or concerns about certain elements of the proposed project, the latter of which focus primarily on potential downstream flood hazards from removal of the dam and impounded sediments, potential slope instability and erosion above the excavated sediment reservoir, the failure to maximize beneficial re-use of impounded sediments, the need for additional offshore and onshore sediment placement locations, impacts from truck traffic on public safety and health, and the timing of Commission review of the proposed project.

Letters from John Waller (representing two downstream property owners) and from the Serra Canyon Property Owners Association (SCPOA) urge the Commission to object to the Corps' consistency determination due to project-related downstream flood hazards, erosion and slope instability, and impacts from truck transportation of excavated sediments. A letter from the City of Malibu requests that additional flood hazard, slope stability, and truck traffic impact studies be completed by the Corps prior to final approval of the removal of Rindge Dam. If the project is to proceed, the SCPOA letter also urges that additional monitoring programs be established, and all three letters argue that mitigation measures must be included as part of the current approval, to reduce the risk of flooding and associated damage,

As in the referenced letters, the consistency determination and the staff report document the flood hazards that currently exist downstream of Rindge Dam. The staff report (page 40) notes that the Corps project is designed to:

> *Maintain the downstream baseline condition of flood level risk along lower reaches of Malibu Creek within the Serra Canyon residential community and businesses in the City of Malibu, avoiding potential for adverse flood-induced impacts associated with the consideration of upstream ecosystem restoration measures.*

The hydraulic analysis undertaken during the Feasibility Study Phase determined that the project would not increase downstream flood hazards over those hazards that currently exist. As the project advances into the more detailed Pre-Construction Engineering and Design (PED) Phase, the Corps states that additional hydraulic and sediment modeling work will be undertaken to either confirm the Feasibility Stage conclusions or to modify the project to ensure that it would not increase downstream flood hazards. In addition, it is at this stage of project design (rather than in the current Feasibility Study stage) that any necessary flood hazard reduction, mitigation, and monitoring measures would be identified and designed by the Corps for the project. The Commission will have the ability to review future modeling results and flood hazard reduction and mitigation measures to ensure that the refined project design remains consistent with the flood hazard policy of the Coastal Act.

The Corps acknowledges that all necessary slope stability geotechnical studies and evaluations, including those associated with the excavation of impounded sediments and potential erosion and landsliding, will take place during the PED Phase of the project. The staff report (page 39) states that:

> *The results of these studies would outline the project design, safety, stabilization, and mitigation measures needed to ensure that the project does not adversely affect existing public infrastructure (e.g., Malibu Canyon Road) adjacent to the dam and impounded reservoir.*

The staff report (page 40) acknowledges that additional geotechnical evaluations of slope stability will be needed before that Commission can finally conclude that the project would be consistent with the geologic hazard policy of the Coastal Act. Therefore, the Corps has committed to submit to the Commission the future geotechnical reports that will evaluate hazards and identify required stabilization measures. The Commission will then schedule a public hearing to review the reports and to determine whether the project remains consistent with the hazard policy of the Coastal Act.

Letters from Heal the Bay and Surfrider Foundation urge the Corps to conduct further studies regarding the potential to beneficially re-use more of the impounded sediment at offshore and onshore locations. The consistency determination notes that additional grain size and chemical testing of sediments will take place throughout the excavation process and that test results will be submitted to the Southern California Dredged Material Management Team (DMMT, which includes Commission staff) before decisions are made regarding disposal locations. Should test results indicate that more sediment than currently calculated by the Corps is suitable for

nearshore or onshore beneficial re-use, the DMMT would recommend the Corps to modify the sediment disposal program to maximize beneficial re-use of the impounded sediments.

The Corps' *Draft Integrated Feasibility Report/Environmental Impact Statement/Environmental Impact Report* and consistency determination addressed potential project impacts arising from truck transportation of excavated sediments from the Rindge Dam site to the Calabasas Landfill and to Ventura Harbor. The consistency determination stated that a Transportation Management Plan (TMP) would be prepared during the PED Phase of the project, and would cover all aspects of construction, including haul routes, sediment transport to the landfill and Ventura Harbor, traffic control measures, impact minimization and avoidance measures, and all aspects of project construction that would affect transportation and traffic on public roads. The TMP will be circulated to the City of Malibu, City of Calabasas, Los Angeles County, City of Ventura, Ventura County, Caltrans, and the Commission prior to the start of construction. During the PED Phase the Corps will also prepare a road repair mitigation plan, which will include the requirement to repair any damages to roadways that occur as a result of project construction and trucking activities.

Questions were also raised about the timing of the Corps' submittal of its consistency determination, prior to the completion of numerous and required technical studies, several of which are mentioned in this addendum. As noted in the staff report (page 9), the proposed project is in the Feasibility Study Phase of project development. Consistent with comments made in the aforementioned letters, the Commission and the Corps acknowledge that much additional information and analysis must be produced by the Corps during the PED Phase prior to the Corps making a final decision on approving and constructing the project. However, the additional studies (e.g., slope stability, flooding hazards, traffic management) cannot be authorized and undertaken until the *Final Integrated Feasibility Report/Environmental Impact Statement* is approved by the Chief of Engineers of the Corps and the Assistant Secretary of the Army for Civil Works, and has received Congressional funding for the PED Phase. The Corps is required to complete its Coastal Zone Management Act federal consistency process (i.e., to submit this consistency determination) as an element of the *Final Integrated Feasibility Report/ Environmental Impact Statement*. If the Commission were to object to the Corps' consistency determination on the basis that these additional studies had not been completed, that would only serve as an impediment to the completion of the very studies that the commenters are demanding. The timing and scheduling of Commission review and action on this consistency determination is similar to previous Corps Feasibility Phase projects (e.g., CD-053-04, Removal of Matilija Dam, Ventura County; CD-0203-13, Encinitas-Solana Beach Coastal Storm Damage Reduction Project).

In addition, construction of the proposed project is currently not scheduled to occur until 2025 at the earliest, leaving adequate time for completing the required studies, modifying the project if necessary, incorporating impact avoidance and minimization measures into final project design, and evaluating whether or not the project remains consistent with the Chapter 3 policies of the Coastal Act.

Finally, at least one of the commenters expressed a concern that the process established for public and Commission review of these additional studies as they are generated would not

provide adequate opportunity for input or the ability for a change in course. *See e.g.*, SCPOA letter at 3 ("future process leaves much to the future discretion of staff and the Commission, and may leave the SCPOA without a remedy if it disagrees with the CCC position"). As noted throughout the staff report and in this addendum, not only are there federal consistency procedures that ensure that the Commission will have the opportunity review the future studies, but the public will likewise be able to review those studies and participate in the Commission's public hearing processes related to those studies in precisely the same manner in which the public can and is participating at this current stage. Thus, the public's opportunity to provide input and remedies if it is dissatisfied is not in any way diminished. In addition, the Corps stated in its consistency determination that it will submit a supplemental consistency determination to the Commission should the project change during the PED Phase or if new or different effects on coastal resources are identified. With these procedures in place, and based on the information currently available, the Commission staff continues to recommend that the Commission concur with CD-0006-17, and find that the proposed project is consistent with the applicable policies of Chapter 3 of the Coastal Act.

Heal the Bay

1444 9th St.
Santa Monica, CA 90401
310-451-1500
info@healthebay.org / www.healthebay.org

February 26, 2018

California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105- 2219
Submitted via email to: EORFC@coastal.ca.gov

Re: Support for Consistency Determination, March 2018 Agenda Item Friday 11a - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

Dear Coastal Commissioners:

On behalf of Heal the Bay, we strongly support the consistency determination for the removal of Rindge Dam arch and spillway (Locally Preferred Plan) along Malibu Creek by the U.S. Army Corps of Engineers (USACOE). We appreciate the opportunity to provide comments. Heal the Bay is an environmental organization with over 30 years of experience and 15,000 members dedicated to making the coastal waters and watersheds of greater Los Angeles safe, healthy, and clean.

Heal the Bay has been actively working in the Malibu Creek Watershed since 1998. During this period we have collected extensive data showing that Malibu Creek and many of its tributaries are impaired for numerous pollutants including water quality and physical habitat parameters, such as barriers. Heal the Bay's 2013 report on the state of the Malibu Creek Watershed[1], presented results from our 2005 Stream Walk surveys where we mapped over 70 miles of streams in the Malibu Creek Watershed. We found and mapped 201 potential barriers for fish and prioritized the top 10 barriers that needed to be removed to improve habitat and watershed health. Rindge Dam was at the top of that list.

Further, Heal the Bay has been actively engaged in barrier removal in the watershed, removing a Texas Crossing in Malibu Creek State Park in 2006 in order to improve habitat and access for aquatic organisms. The removal of stream barriers provides benefits to fish, invertebrates, and other aquatic life that live in the watershed by providing additional access to habitat. These restoration activities also allow natural sediment transport downstream. Barriers restrict the natural flow of sediment downstream, causing downstream waters and streambanks to become sediment starved, resulting in a net increase in downstream erosion. Removing stream barriers throughout the Malibu Creek Watershed will help restore natural flows, improve habitat quality, and re-establish a more normal sediment regime.

[1] Sikich S et al. (2013) Malibu Creek Watershed: An Ecosystem on the Brink. Heal the Bay, Santa Monica, CA.

Heal the Bay

1444 9th St.
Santa Monica, CA 90401
310-451-1500
info@healthebay.org / www.healthebay.org

Heal the Bay has been engaged in the stakeholder process for the removal of Rindge Dam for many years. We submitted comments on the Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report (IFR) with Environmental Impact Statement/Environmental Impact Report (hereafter, "draft EIS/EIR") in March, 2017 and have included those comments as an attachment. We urged our strong support for the Locally Preferred Plan (LPP), Alternative 2b2, and we now urge the Coastal Commission to support the consistency determination for the LPP to allow this important project to move forward.

Heal the Bay supports Alternative 2b2 because it provides the most environmental benefits while minimizing negative impacts. This alternative removes both the dam and spillway, which we think is important to improve habitat directly and indirectly for federally endangered Southern California steelhead trout and many other species that utilize the riparian corridor. We also support the mechanical transport of sediment in this alternative because it maintains high quality habitat and prevents the need for floodwalls downstream. Further, this alternative is preferred because sediment is placed to avoid risk to natural resources, specifically surf grass habitat. Alternative 2b2 also includes removal of upstream barriers in Las Virgenes and Cold Creeks, which we strongly support. Removal of these barriers will open up many additional miles of high-quality stream habitat.

As described in more detail in our comment letter submitted to the USACOE on March 27, 2017 (attached), we recommend some additional changes to the final project. In its consistency determination process, we urge the Coastal Commission to carry forward these recommendations to the USACOE. Specifically, we recommend the impounded sediment be reused as much as possible with prioritization for beach nourishment. We are concerned that only 1/3 of the impounded sediment will be reused, while 2/3 of it will go to the Calabasas landfill. Without Rindge Dam in place, this material would have all remained in Malibu Creek or been transported to the ocean. With the numerous beaches suffering sediment loss and requiring nourishment, we believe that more of the sediment trapped behind Rindge Dam could be beneficially reused.

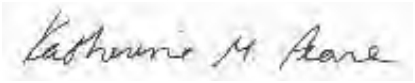
We further recommend that strong mitigation and best management practice measures be established to minimize the spread of invasive species. Unfortunately, invasive species are widespread throughout the Malibu Creek Watershed. These include such species as red swamp crayfish, New Zealand mudsnails, *Arundo donax*, and many others. We recommend that specific provisions and mitigation measures be included to ensure that the project does not contribute to the spread of these invasive species. These provisions should cover the construction/deconstruction processes, and sediment removal and transport processes. Specific mitigation measures are outlined in the attached letter. We also requested that monitoring be conducted throughout the project to assess and detect impacts to water quality, biological health, and physical habitat.

Heal the Bay

1444 9th St.
Santa Monica, CA 90401
310-451-1500
info@healthebay.org / www.healthebay.org

As expressed above, we urge the Coastal Commission to support the consistency determination for the Locally Preferred Plan, Alternative 2b2. We thank you for your consideration of these comments. Please feel free to contact us at (310) 451-1500 with any questions.

Sincerely,



Katherine Pease, Ph.D.

Watershed Scientist

Attachment: "2017-03-27_HTBtoACOE_RindgeDam" Comment Letter

cc: Jamie King, Environmental Scientist, California State Parks, Angeles District

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1500
fax 310 496 1902

info@healthebay.org
www.healthebay.org

March 27, 2017

Mr. Eduardo T. De Mesa
Chief, Planning Division
US. Army Corps of Engineers
Los Angeles District
915 Wilshire Boulevard, Suite 930
Attention: Mr. Jesse Ray (CESPL-PDR-L)
Los Angeles, California 90017-3401
Submitted via email to: Malibu.Creek@usace.army.mil

Re: Comments on Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report (IFR) with Environmental Impact Statement/Environmental Impact Report (EIS/EIR) Los Angeles and Ventura Counties, California.

Dear Mr. De Mesa:

On behalf of Heal the Bay, an environmental organization with over 15,000 members dedicated to making the coastal waters and watersheds of greater Los Angeles safe, healthy, and clean, we submit the following comments on the the Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report (IFR) with Environmental Impact Statement/Environmental Impact Report (hereafter, "draft EIS/EIR").

Heal the Bay has been actively working in the Malibu Creek Watershed since 1998. During this period we have collected extensive data showing that Malibu Creek and many of its tributaries are impaired for numerous pollutants including water quality and physical habitat parameters, such as barriers. Heal the Bay's 2013 report on the state of the Malibu Creek Watershed[1], presented results from our 2005 Stream Walk surveys where we mapped over 70 miles of streams in the Malibu Creek Watershed. We found and mapped 201 potential barriers for fish and prioritized the top 10 barriers that needed to be removed to improve habitat and watershed health. Rindge Dam was at the top of that list.

Further, Heal the Bay has been actively engaged in barrier removal in the watershed, removing a Texas Crossing in Malibu Creek State Park in 2006 in order to improve habitat and access for aquatic organisms. The removal of stream barriers provides benefits to fish, invertebrates, and other aquatic life that live in the watershed by providing additional access to habitat. These restoration activities also allow natural sediment transport downstream. Barriers restrict the

[1] Sikich S et al. (2013) Malibu Creek Watershed: An Ecosystem on the Brink. Heal the Bay, Santa Monica, CA.

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1500
fax 310 496 1902

info@healthebay.org
www.healthebay.org

natural flow of sediment downstream, causing downstream waters and streambanks to become sediment starved, resulting in a net increase in downstream erosion. Removing stream barriers throughout the Malibu Creek Watershed will help restore natural flows, improve habitat quality, and re-establish a more normal sediment regime.

Heal the Bay strongly supports the removal of Rindge Dam and we urge your support for the Locally Preferred Plan (LPP), Alternative 2b2, with some additional suggestions as described below.

Specifically, we support the following aspects of Alternative 2b2:

- **Removal of Rindge Dam arch *and* spillway:** The removal of Rindge Dam arch will provide significant benefits to endangered Southern California steelhead trout as well as other aquatic and terrestrial organisms that utilize the riparian corridor. The dam currently blocks access to high-quality habitat upstream for many species. Southern California steelhead trout are a keystone species; they are federally endangered and are listed as a distinct population unit. In urban Southern California, there are few lagoons, estuaries, and streams where steelhead are able to persist, largely due to development and habitat loss and alteration, including barriers and dams. Southern California steelhead are known to exist in Malibu Creek below Rindge Dam and restoring access to upstream portions of spawning habitat is a critical step in the persistence and recovery of this important species. Further, removal of the dam arch will restore a more natural hydrologic and sediment regime to the creek. This opportunity to restore Malibu Creek for numerous native species while also improving and restoring ecosystem services is unprecedented.

  Heal the Bay also supports the removal of the Dam spillway in addition to the arch. While the removal of the spillway does not improve habitat directly, we believe that it improves habitat indirectly and in important ways. As stated in the draft EIS/EIR, if the spillway is not removed, there will be future needs to repair and maintain the spillway, necessitating access roads and disturbance to natural resources. Further, the spillway will likely continue to be an attraction for visitors, despite it being officially closed to the public, as it currently is. This will cause continued habitat degradation through establishment of social trails and water quality impacts from trash and human waste. These indirect effects of the spillway will lead to a reduction in habitat quality. These indirect impacts are not accounted for in the alternatives that leave the spillway in place; we request that indirect ecological impacts of the spillway be assessed and discussed in the final EIS/EIR.

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1500
fax 310 496 1902

info@healthebay.org
www.healthebay.org

- **Mechanical transport of sediment to maintain high quality habitat and prevent the need for floodwalls:** Heal the Bay supports the mechanical removal and transport of the impounded sediment behind Rindge Dam. While natural methods of transport would, theoretically, be preferred, the amount of development in the downstream portions of the watershed preclude this alternative from being supported by Heal the Bay. Sediment removal through natural transport (Alternatives 3 and 4) would negatively impact water quality and would necessitate floodwalls in the Serra Retreat/Cross Creek communities. We understand the need for floodwalls in these alternatives but cannot support them. Removing one barrier only to increase hardening and barriers in another portion of the watershed is not the best alternative. The floodwalls would act as a barrier themselves to many species and the hardening of streambanks almost always leads to scour, erosion, and a reduction of stream habitat quality. Therefore, Heal the Bay supports the mechanical removal and transport of the sediment behind Rindge Dam. We do acknowledge that there are significant impacts associated with this option (such as traffic); however, we believe that it is the method that will result in the best habitat quality in the long-term.

- **Removal of upstream barriers in Las Virgenes and Cold Creeks:** Heal the Bay also strongly supports the removal of barriers upstream of Rindge Dam. The benefits of the removal of these smaller barriers are great, opening up additional miles of high-quality habitat. Further, the costs of removing these upstream barriers is relatively small and taken together with the removal of Rindge Dam, provides for a comprehensive watershed restoration project.

- **Sediment placement to avoid risk to surf grass habitat:** Heal the Bay supports the placement of sediment in areas where impacts to natural resources are avoided. Therefore, given that shoreline sand placement, as proposed in the Tentatively Selected Plan (TSP)/National Ecosystem Restoration (NER) plan, Alternative 2d1, may have impacts to surf grass (p. 275), Heal the Bay supports the LPP in which sand is placed nearshore. The potential impacts to the surf grass habitat are not quantified in the alternatives which consider shoreline sand placement. We ask that the impacts be quantified and mitigated for in those alternatives, should they be chosen for implementation. Heal the Bay supports Alternative 2b2, which places sand nearshore, avoiding impacts to surf grass habitat. Surf grass is a highly productive habitat[2],

[2] Ramirez-Garcia P et al. (2002) Distribution and nutrient limitation of surfgrass, *Phyllospadix scouleri* and *Phyllospadix torreyi*, along the Pacific coast of Baja California (México). *Aquat Bot* 74:121–131.

Heal the Bay
1444 9th Street
Santa Monica CA 90401
ph 310 451 1500
fax 310 496 1902
info@healthebay.org
www.healthebay.org

providing shelter for many species[3] and serving as nursery habitat for fishes and invertebrates.[4] Impacts to this important habitat should be avoided.

We ask that the EIR/EIS also consider:

- **Reuse of the impounded sediment as much as possible; beach nourishment should be prioritized at areas that are in need of nourishment due to erosion:** We are concerned that only 1/3 of the impounded sediment will be reused (p. 229), while 2/3 of it will go to the Calabasas landfill. This material would have all stayed in Malibu Creek or gone to the ocean if Rindge Dam had not been there and we would like to see it reused in the watershed or in local areas. We urge the ACOE to explore additional beneficial reuse of impounded material throughout the project. This would also provide a benefit of reducing tipping fees for disposal of sediment. We urge the ACOE to work with local groups and agencies to identify projects that are in need of material as project planning and implementation is underway. We are also concerned that the sand that is being reused for beach nourishment is not benefitting beaches that are in the most need of nourishment. Similar to the Habitat Evaluation analysis in the draft EIS/EIR, we would like to see a quantitative analysis of impacts and benefits to beaches from nourishment, with need for nourishment factored in to that analysis. We recommend that the findings from the 2010 Coastal Sediment Management Working Group's "California Beach Erosion Assessment Survey"[5] and the 2016 Los Angeles County Public Beach Facilities "Sea-level Rise Vulnerability Assessment"[6] be utilized to identify and prioritize beaches for nourishment. We also recommend that the transport of sand be modeled at both shoreline and nearshore sites (p. 234) to identify which areas will be impacted from the sediment placement, both positively and negatively.

- **Implementation of best management practices to minimize spread of invasive species:** Unfortunately, invasive species are widespread throughout the Malibu Creek Watershed. These include such species as red swamp crayfish, New Zealand mudsnails, *Arundo donax*, and many others. We recommend that specific provisions and mitigation measures be included to ensure that the project does not contribute to the spread of these invasive species. These provisions should cover the construction as well as any possible beneficial reuse of sediment. During construction, equipment should be thoroughly cleaned and decontaminated before and after entering the creek bed/project area. The

[3] Stewart JG & Myers B (1980) Assemblages of algae and invertebrates in Southern California *Phyllospadix*-dominated intertidal habitats. *Aquat Bot* 9:73–94.
[4] Engle JM (1979) Ecology and growth of juvenile California spiny lobster, *Panulirus interruptus* (Randall). Ph.D. Dissertation, University of Southern California.
[5] http://dbw.ca.gov/csmw/pdf/CBEAS_Final_10252010a.pdf
[6] http://file.lacounty.gov/SDSInter/dbh/docs/247261_LACO_SLR_Vulnerabilty_FinalReport_19Apr2016.pdf

Heal the Bay
1444 9th Street
Santa Monica CA 90401
ph 310 451 1500
fax 310 496 1902
info@healthebay.org
www.healthebay.org

draft EIS/EIR addresses possible contaminants that could get into the creek during construction (p. 302) but does not consider biological contaminants. We suggest that an additional mitigation measure be added to specifically address procedures to prevent and minimize the spread of invasive species, including Hazard Analysis and Critical Control Point (HACCP) planning. We also recommend that the impounded sediment be treated as possibly contaminated with invasive biological material, until deemed uncontaminated. In addition to testing the sediment for chemical contaminants (p. 292), we recommend testing for biological contaminants. If the sediments contain any invasive species, a plan should be developed and followed to ensure that the beneficial reuse or disposal of those sediments does not spread invasive species. Further, we recommend that biological contaminants be discussed in the section of the draft EIS/EIR on known contaminants in the watershed (p. 199).

- **Monitoring throughout the project to assess and detect impacts to water quality, biological health, and physical habitat and ultimately to quantify impacts of the dam removal on watershed health:** Monitoring will be a critical element to a successful project, both to detect impacts during construction as well as assess project success and long-term impacts. The draft EIS/EIR states that water quality will be monitored during construction (p. 302); however, water quality will need to be monitored during the wet season too when construction is not occurring. Monitoring after the first storm of the season in the off-construction period would be particularly important to determine if there are impacts to the creek and whether those impacts need to be mitigated. Further, we recommend that monitoring occur prior to the project in order to set a baseline against which future values could be compared, both during and after construction. Biological surveys of fish, amphibians, benthic macroinvertebrates, and invasive species before, during, and after the project would also be needed to assess impacts, and successes of the project. The monitoring and adaptive management plan (MAMP) (p. 507-509) is a good start but only focuses on vegetation and physical habitat. We recommend that this plan include additional water quality and biological monitoring and also start prior to construction.

We also submit the following comments on specific aspects of the draft EIS/EIR:

- The draft EIS/EIR should be updated with the most current regulatory information. For instance, there is a newer TMDL to address nutrients in the Malibu Creek Watershed than the 2003 nutrient TMDL referenced in the draft EIS/EIR (p. 88, 91), namely the 2013

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1500
fax 310 496 1902

info@healthebay.org
www.healthebay.org

EPA Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to address Benthic Community Impairments.[7]

- The figure on page 88 is labeled as 3.3-7 but the reference to it on page 87 is for Figure 3.3-6.

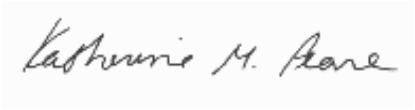
- We appreciate the inclusion of data from Heal the Bay's Stream Team (p. 87 on); however, we recommend that the most current data be included given that the most recent in the draft EIS/EIR is from 2004. We would be glad to share more recent water quality data; additionally the data are available online at: www.streamteam.healthebay.org

- *Enterococcus* levels are discussed as TMDL levels (p. 93, lines 21-25); however, the EPA levels for recreational water quality are not equivalent to TMDL levels and the bacteria TMDL for Malibu Creek does not have any limits for *Enterococcus* for fresh water.[8] Please clarify whether the mean levels of *Enterococcus*, *E. coli*, and total coliform (p. 93, 94) are geometric means or standard means. Geometric means should be used for bacteria and are how limits are given in TMDLs. Finally, the EPA's standards for recreational water quality were updated in 2012[9] and should be updated in the draft EIS/EIR. Finally the total coliform limits are only applicable to marine waters and not fresh water; this should be clarified in the draft EIS/EIR (p. 94).

As expressed above, we urge the Army Corps to support the Locally Preferred Plan, Alternative 2b2, with additional considerations on sediment reuse and placement and invasive species.

We thank you for your consideration of these comments. Please feel free to contact us at (310) 451-1500 with any questions.

Sincerely,



Katherine Pease, Ph.D.
Watershed Scientist

Rita Kampalath, Ph.D., P.E.
Science and Policy Director

[7] https://www3.epa.gov/region9/water/tmdl/malibu/2013-07-02-malibu-creek-lagoon-tmdl-signed.pdf
[8] http://63.199.216.6/bpa/docs/R12-009_RB_BPA.pdf
[9] https://www.epa.gov/wqc/2012-recreational-water-quality-criteria

California Coastal Commission
45 Fremont Street
Suite 2000
San Francisco, CA 94105

Email: EORFC@coastal.ca.gov

March 1, 2018

Submitted electrically via email to: EORFC@coastal.ca.gov

RE: Surfrider Foundation Public Comment on March 2018 Agenda Item Friday 11a - CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.)

Dear Honorable Commissioners,

Please accept this letter on behalf of the Surfrider Foundation Headquarters, and the Los Angeles Chapter of the Surfrider Foundation ("Surfrider"). We welcome this opportunity to provide public comment on the Consistency Determination by U.S. Army Corps of Engineers for Malibu Creek Ecosystem Restoration Project ("Project").

The Surfrider Foundation is a 501(c)(3) non-profit organization that is dedicated to the protection and enjoyment of the world's oceans, waves and beaches through a powerful activist network. Our members consist of recreationalists, conservationists, fishermen, coastal property owners, and business owners who support our mission.

In coastal areas around the country, beach erosion has become a serious problem threatening public and private properties, recreational values and the economies of coastal communities. In many of these areas, beach sand supplies have been critically reduced by dams which impede natural processes that transport sediment from coastal watersheds to the shoreline.

At the same time, many dams have been rendered obsolete by heavy siltation, structural defects, and development of alternative water supplies. Dams are directly responsible for endangering the ecosystems of coastal watersheds, drastically reducing fish populations and causing the near extinction of the southern California populations of the federally endangered steelhead trout.

For nearly a decade, Surfrider has participated in the Technical Advisory Committee (TAC) for the Malibu Creek Ecosystem Restoration Project and we have enthusiastically supported full removal of Rindge Dam in order to restore the hydrologic regime of the Malibu Creek system and reestablish hydraulic connectivity from the Santa Monica Mountains to the Pacific Ocean—to build more resilient coastlines.

Surfrider is pleased both the U.S. Army Corps of Engineers (USACE) and the California Department of Parks and Recreation (CDPR) have spent a significant amount of time analyzing this important project and engaging the local community and interested stakeholders.

While Surfrider agrees with the alternatives analysis conducted by USACE and CDPR for dam removal, we believe the Project must *greatly increase evaluation of managing and utilizing impounded sediment in both onshore and offshore deposition locations.* We are concerned that the Project is lacking long term, creative thinking to manage the impounded sediment. The Project is unfortunately limited because only one nearshore deposition location is selected and no additional onshore areas for sediment deposition were identified. Below we offer suggestions for strategically depositing impounded sediment in areas that suffer from chronic erosion.

SPECIFIC RECOMMENDATIONS TO IMPROVE FEDERAL CONSISTENCY

It is fundamental to Surfrider that the impounded sediment be viewed as a **beneficial and not as burdensome.** If this view is taken, we believe the sediment can, and should be, used strategically to replenish starving beaches. **Therefore, we are concerned that only 1/3 of the impounded sediment will be reused and 2/3 of it will be deposited into the Calabasas landfill.** We understand the USACE has not conducted sediment testing and will be unable to do so for quite some time, yet we are certain that more than 1/3 of the impounded sediment can eventually be used over the years.

While we support this Consistency Determination we are pleased to see language in the Staff report that will allow for a 're-opener' to examine additional components of this Project in the future as conditions will certainly change. *As the dam is dismantled and sediment is chemically tested, there will be future possibilities to modify the Project to allow for additional areas of sediment deposition.*

Before we suggest specific locations for beneficial reuse of impounded sediment, we strongly urge the CCC to require the USACE to examine areas where sediment can be stockpiled for future use. Stockpile areas could be located in surrounding littoral cells (e.g. Santa Barbara, Santa Monica, San Pedro and Laguna littoral cells). Storing sediment will ensure beneficial reuse. We understand that cost is always a

consideration and so we suggest that the USACE work with local municipalities and resource agencies in each littoral cell to share the cost of storing and using sediment.

The Coastal Act requires that any trapped or dredged sediment be considered for beneficial reuse.

As stated in the Coastal Act Section 30233:

(b) Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

(d) [flood control facilities] can impede the movement of sediment that would otherwise be carried into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects.

Given the fact that many beaches within Los Angeles county have been deemed chronically eroded we think more thought should be given to utilizing the sediment at different beaches throughout the region. In 2010, the Coastal Sediment Management Working Group conducted a Beach Erosion Assessment Survey[1] and identified Beach Erosion Concern Areas (BECA), where current or historical erosion is of concern. The BECAs identified in the Santa Monica Mountains area include Leo Carrillo State Beach; Dan Blocker County Beach; Nicholas Canyon County Beach; Surfrider Beach; and Topanga State Beach.

Unfortunately, the Project overlooks how impounded sediment can be used for BECAs—in fact, only one out of five beaches will realize the benefits of the Project. As proposed, impounded sediment would be barged from Ventura Harbor and placed within nearshore environment east of Malibu Pier. **Surfrider suggests a combination of barging and shoreline placement of impounded sediment.** Surfrider is concerned that depositing sediment east of Malibu Pier will not help solve long term erosion problems. In fact, we think an entirely new analysis of barged sediment should be conducted.

Additional Barging Analysis

Surfrider strongly encourages the Project to analyze depositing sediment further west of the Malibu pier. Again, it is important to stress further analysis must be conducted to better understand **alternative deposition sites east of Malibu Pier**.

[1]Coastal Sediment Management Working Group Assessment of Beach Erosion Concern Areas http://dbw.ca.gov/csmw/pdf/CBEAS_Final_10252010a.pdf

We also want to stress that any analysis of alternative barge locations must consider protection of sensitive habits (i.e. Areas of Special Biological Significance and Marine Protected Areas), surfing areas, and other environmental resources.

Perhaps sediment is barged offshore to a location west of Pepperdine University and east of Corral Canyon Park. Surfrider thinks that sediment deposited further offshore (as opposed to nearshore, but not *too* far offshore that sediment is lost) might be beneficial and help with sediment transportation to chronically eroding beaches. Perhaps several additional offshore barge locations should be examined. Of course, it is extremely important to Surfrider that all sediment deposition is closely studied to ensure protection of sensitive marine habitats.

As mentioned in the USACE's Integrated Feasibility Report, the sediment budget for the nearshore study area is not well understood due primarily to the lack of coastal process data west of Topanga Canyon and the history of frequent shoreline modifications that have occurred in Santa Monica Bay since the early 1900s. [2] Therefore, it is imperative to further study how offshore sediment deposition might provide real benefits to chronically eroding beaches. ***In sum, multiple barge locations should be further analyzed to better understand how ocean currents can distribute sediment to BECA beaches.***

Alternative Onshore Sediment Deposition

Surfrider is aware that the impounded sediment will not be ready for immediate beneficial reuse, however, as mentioned, there are several BECA beaches that will need sediment for decades to come. In addition, we are aware of a few other specific beaches that have plans for beach nourishment—and these beaches, just like BECA beaches, will undoubtedly need sediment on a long-term basis. Obviously having stockpile locations of sediment that can be utilized over several years is a critical part of the equation.

For nearly 15 years, the Surfrider Foundation has been monitoring and commenting on the chronic erosion at Broad Beach. Recently the Coastal Commission approved a 300,000-cubic yard sand replenishment project at Broad Beach. Surfrider believes that sediment from Rindge Dam can be used to replenish the area on a long-term basis. **Of course, any sediment utilized must be beach-compatible grains.**

Another creative approach to using impounded sediment is to work with the Los Angeles County of Beaches and Harbors. Currently the agency is looking to conduct nourishment projects at Nicholas Canyon Beach, plus a dune project at the east end of Point Dume. As mentioned before, another creative approach to ensuring beneficial

[2] **Malibu Creek Ecosystem Restoration Feasibility Study** pg. 85
http://www.spl.usace.army.mil/Missions/Civil-Works/Projects-Studies/Malibu-Creek-Study/

reuse would be to form a cooperative agreement between USACE and the local agencies to cost share on sediment storage and placement.

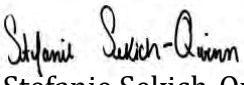
In addition to examining the above projects, we strongly recommend that USACE study directly depositing sediment at the 5 BECAs identified for chronic erosion.

Finally, Surfrider understands that the "fines" or small grain sand is often the most challenging to reuse. Surfrider suggests that once the fines have been separated, the USACE locate agriculture areas that would benefit from fines (i.e. farmlands that have deteriorated and are dominated by course sediment would benefit from the fines). Considering that Oxnard is a nearby agriculture community, local farmers could possibly utilize fine sediment.

Conclusion

The removal of Rindge dam presents a great occasion to **opportunistically utilize impounded sediment**. Surfrider urges USACE to conduct further analysis to creatively use impounded sediment strategically offshore and onshore. Considering beaches along the west coast are increasingly eroding and sea levels are rising due to climate change, we strongly believe impounded sediment ought to be used wisely and not wasted. And because the Project will take many years to permit, remove, and beneficially reuse impounded sediment, we believe there is ample time to study a multitude of ways to ensure impounded sediment is viewed as beneficial reuse and not as burdensome. Once again, thank you for the opportunity to comment on this very exciting restoration project.

Respectfully,



Stefanie Sekich-Quinn
Surfrider Foundation, HQ
Coastal Preservation Manager

Graham Hamilton

Graham Hamilton
Surfrider Foundation, Los Angeles Chapter
Chapter Coordinator

City of Malibu

23825 Stuart Ranch Road • Malibu, California • 90265-4861
Phone (310) 456-2489 • Fax (310) 456-3356 • www.malibucity.org

March 1, 2018 *Sent via Email to EORFC@coastal.ca.gov*

California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

RE: March 9, 2018 Agenda Item 11a – CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.) – City of Malibu

Dear Members of the California Coastal Commission:

The City of Malibu submits the following comments regarding the removal of Rindge Dam and the potentially negative impacts on the environment in Malibu and Santa Monica Bay that the project presents, as well as potential disastrous consequences to the Malibu Civic Center area and nearby residents, particularly those in the Serra Retreat area:

1. Increased flooding risk downstream of the dam

- Although the backside of the dam is impounded with sediment, the dam has always served as an energy dissipater for the downstream reaches of Malibu Creek by reducing the velocity of the creek water during high rainstorm events. Without the dam's regulating effect, flooding in the Malibu Civic Center area, which includes commercial, residential, City and County properties, could result in severe property damages and lawsuits totaling millions of dollars.
- Downstream flooding could result in destruction of one of only two accesses for the Serra Retreat residential community. The existing low-lying bridge on Cross Creek Road is sensitive to creek fluctuations and might fail as a result of high water velocities. High stream water with floating debris could impact the bridge structure. As a result, residents of the Serra Retreat community would have only one point of ingress and egress. This could severely impact public safety as police, fire, and rescue operations would be restricted to just the one point of access to reach residents in need of their services.
- Without the dam, the velocity of stormwater in Malibu Creek could increase, which would then cause erosion.
- FEMA regulations state that the development (removal of the dam) cannot modify the depth of the flood zone by more than one foot. If the flood zone is modified, then the developer is required to mitigate any impacts. The Coastal Commission reports that the project will increase the flood zone by more than a foot, but no mitigation measures have yet been proposed.

2. Damage to City, County and State roadways

- Hauling 780,000 cubic yards of impounded sediment offsite translates to 39,000 to 52,000 truck trips on City, County and State roadways. By hauling offsite at a rate of 30 trucks per day, it will take more than five years of continuous truck traffic (eight hours per day, five days per week) to perform this work. Since the existing roadways are not designed to take this kind of truck traffic, millions of dollars in roadway damages could result. Mitigation measures have not yet been proposed to offset this damage.
- In addition, the aforementioned impounded sediment haul-off does not include the debris from dismantling the dam. The dam itself has thousands of cubic yards of concrete debris that will also require haul-off. This negative impact to the environment has not been addressed.

3. Increased traffic congestion

- Malibu Canyon Road/Las Virgenes Road, a State of California Designated Scenic Highway, is one of the only major traffic arteries through the Santa Monica Mountains that connects the valley and coastal routes. Malibu Canyon is an important and significant thoroughfare connecting two major highways in Southern California – Pacific Coast Highway (PCH/SR-1) and the Ventura Freeway (SR-101). Malibu Canyon/Las Virgenes Road will no longer serve as a viable thoroughfare for motorists going to or through Malibu. Because the Malibu region has limited access, congestion on Malibu Canyon/Las Virgenes Road could cause severe traffic congestion on other roadways in the region, including PCH and alternate canyon routes, including Kanan Dume Road and Topanga Canyon Road.
- The Coastal Commission report indicates that the project will use Malibu Canyon Road to transport the material from the site towards Calabasas and SR-101. However, the report does not indicate the route that empty trucks will take to get to the project site. This potential impact needs further clarification.
- The report also does not state where the applicant intends to stage all the trucks entering the project site. With almost 30 trucks each day, it is likely that the trucks will be backed up somewhere waiting to enter the site. Unless another location is identified, it can only be assumed that the storage of the trucks will likely be on Malibu Canyon Road or PCH. This potential impact needs further clarification.
- Traffic congestion and safety on PCH is an ongoing, serious problem for the City, with residents, regional commuters, and millions of visitors utilizing the 21 miles of highway to access local beaches, parks, canyons and trails, as well as those seeking an alternative to regular congestion on SR-101. This project's truck traffic could exacerbate the existing bottlenecks along this already heavily traveled thoroughfare, which also functions as the main and often only route for residents to get from their homes to necessary services within the City.

4. Negative impact on air quality

    - With as many as 52,000 truck trips hauling impounded sediment offsite, the air quality in the area could be severely impacted. This potential impact needs further study.

5. Negatively impacted slope stability

    - By removing the dam and the impounded sediment behind the dam, the stability of the existing slopes could decrease causing a geologic instability of the slopes. This might increase the danger of landslides in the area and the potential of severely damaging or completely destroying Malibu Canyon/Las Virgenes Road, a major arterial route for this region. The potential impact on the slope stability needs further study.
    - The report states that additional geotechnical reports on the stability of the existing slopes would be performed in the pre-construction engineering or design phase. This determination of slope stability should be prepared prior to making a decision about whether or not this project is feasible.

6. Increased sediment transport

    - The removal of the dam could result in an increase in sediment deposition downstream of the dam at the mouth of Malibu Creek, which could cause increased flooding and result in maintenance, including but not limited to dredging Malibu Lagoon, in order to prevent and/or minimize flooding potential in the Malibu Civic Center area. This potential impact needs further study.
    - The increase in sediment downstream of the dam could have a substantial effect on the water level downstream. This potential increase is required to be evaluated in accordance with FEMA regulations.
    - The increased amount of sediment may negatively affect water quality in the lower portion of Malibu Creek and Malibu Lagoon. This potential impact needs further study.

7. Removal of Material

    - The report states that the entire 780,000 cubic yards of material will be removed from the project site. Of this amount, approximately 280,000 cubic yards of clean, sandy sediments will be transported to Ventura Harbor. The report does not mention where the applicant intends to stockpile the excavated material. Typically, the material would need to be sifted to get the clean, sandy sediments. The location where the material will be stored and sifted needs to be identified.
    - The report does not speak to the quality of the material behind the dam. The dam and associated material have been in place for nearly 100 years. The built-up material could have a substantial amount of bacteria, nitrogen, rubber and other contaminates. This material could be hazardous. Soils investigations are needed to determine if this project is feasible.

- The report states that the 278,000 cubic yards of material will be transferred to Ventura Harbor, where it will be placed on a barge and disposed of near the Malibu Pier. However, it is unclear where this operation will take place in Ventura Harbor. Further information on the capacity of the location needs to be identified.
- Approximately 500,000 cubic yards of material was identified to be deposited in the Calabasas Landfill. This is a substantial amount that could have serious impacts to the region. With the likelihood that the Calabasas Landfill may be determined as an unacceptable location for discarding this amount of material, an alternate location should be identified prior to approval of the project.

8. Other Agency Approvals and Consultations

- The report fails to identify the following stakeholders: FEMA, Caltrans, County of Ventura, County of Los Angeles, City of Calabasas, City of Malibu, City of Ventura and the Ventura Harbor District. All of these entities could be seriously impacted by the magnitude of this project and should, therefore, be included in the decisions made about this project.

- Over the past ten years, the City of Malibu has invested over $150 million in water quality improvement projects to clean and preserve Malibu Creek, Malibu Lagoon, Surfrider Beach and the ocean. The progress made by projects, such as three stormwater treatment facilities, Malibu Legacy Park (which has been recognized with nine water quality, sustainability and engineering awards), and the Civic Center Wastewater Treatment Facility (scheduled to be fully operational in 2018), could be negated by the inflow of sediment and material carried downstream as a result of flooding.

In summary, the serious environmental consequences that could result from the removal of the nearly 100-year old Rindge Dam are extremely concerning for the Malibu community, which prides itself on its protection of the environment, particularly with regard to water quality. In addition, the potential direct impacts on the Malibu Civic Center area and the Serra Retreat residential community must be given strong consideration, along with the profound impacts on traffic through Malibu Canyon and along Pacific Coast Highway, one of the most heavily traveled stretches of road in Los Angeles County.

The City of Malibu hereby requests that above mentioned additional studies and information be provided prior to final approval of the removal of Rindge Dam.

Sincerely,

Reva Feldman
City Manager

cc: Mayor Mullen and Honorable Members of the Malibu City Council
Craig George, Environmental Sustainability Director
Bob Brager, Public Works Director

Kenneth A. Ehrlich
D: 310.746.4412
F: 310.746.4462
KEhrlich@elkinskalt.com
Ref: 11614-0003

ELKINS
KALT
WEINTRAUB
REUBEN
GARTSIDE LLP

March 2, 2018

VIA E-MAIL AND OVERNIGHT MAIL

Dayna Bochco, Chair
Larry Simon, Senior Federal Consistency Analyst
California Coastal Commission
45 Fremont Street, Suite #2000
San Francisco, CA 94105
E-Mail: Dayna.Bochco@coastal.ca.gov
Larry.Simon@coastal.ca.gov

F 11a

Re: CD-0006-17 (U.S. Army Corps of Engineers, Los Angeles Co.); Malibu Creek Ecosystem Restoration Project ("Project")

Hearing Date: March 9, 2018
Agenda Item Nos. F 11a

Dear Chair Bochco, Mr. Simon, and Commission Members:

We represent the Serra Canyon Property Owners Association ("**SCPOA**"), an association of 105+ homeowners in the Serra Canyon area of the City of Malibu (the "**City**"). SCPOA remains committed to protecting and enhancing environmental quality in and around Sweetwater Mesa and the Malibu Creek Watershed. Located only 2.5 miles downstream of the proposed to-be-dismantled Rindge Dam, SCPOA has significant concerns that, in its present form, the Malibu Creek Ecosystem Restoration Project ("**Project**") presents the potential for catastrophic flooding and property damage to the Serra Canyon community. Therefore, we respectfully request that the Coastal Commission intervene and **find the Project INCONSISTENT with the geologic hazard policies of Coastal Act § 30253.**[1] The Project will pose substantial, unmitigated risks to public safety and will have significant, unmitigated adverse impacts on the environment.

[1] Coastal Act § 30253 states:

"New development shall do all of the following:

(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(footnote continued)

Primary Concern: Unmitigated Downstream Flood Risk

SCPOA's primary concerns arise from the simple fact that the downstream flood risks posed by the Project remain unknown. This is especially scary for a 105+ home community. The Project's federal lead agency, the Army Corps of Engineers ("Army Corps"), has selected a Project version, alternative 2b2, where Rindge Dam will be dismantled, and built-up sediment will be removed, over an 8-year period. This demolition process will cause the Malibu Creek streambed elevation to increase significantly. Neither the Army Corps, the Coastal Commission, nor any other agency actually knows the ultimate streambed elevation increase associated with the Project. The CCC staff opines that up to 12' of streambed deposition could occur in lower reaches of Malibu Creek, such as the areas bordering Serra Canyon, over the next 50 years. CCC Staff Report, p. 41. See also attached February 28, 2018 geotechnical letter from Geotechnologies, Inc. ("Geotechnologies Letter"), p.2.

The favored Project alternative also includes the construction of access ramps to the dam and the removal of vegetation within the impounded sediments. With the loss of the impounded vegetation, erosion and mobilization of the exposed and loosened sediments will clearly occur. The Project's joint NEPA and CEQA document, the January 2017 *Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report With Environmental Impact Statement/Environmental Impact Report* ("DIFR/EIS/EIR"), fails to consider or analyze the volume of sediments generated over the Project's 8-year duration or subsequent, later flows. See, Geotechnologies Letter, p. 2. This lack of analysis alone calls the entire DIFR/EIS/EIR into question and should prevent the CCC from making the required consistency findings for geologic hazards. See, Coastal Act § 30253.

This lack of study or understanding of Project consequences imposes significant risk and danger on Serra Canyon residents. Community flooding presents a huge threat during any significant rain event. As recently as February 2017, a flood overtopped the neighborhood's Cross Creek Bridge and nearly flooded many of the homes along Cross Creek Lane. It would be irresponsible to subject Serra Canyon to additional and increased flood risks, which will surely occur without the benefit of Rindge Dam, without any remedial mitigation measures. The Project contains no mitigation measures whatsoever to protect against the increased flood risk posed by the Project.

Increased Landslide Risk Further Endangers Serra Canyon

The CCC Staff Report also admits that the Project would exacerbate slope instability throughout the 8-year Project process, and after Project completion. See, Staff Report, pp. 38-39. In response to this impact, the Staff Report admits, "[N]o related slope stability exploration

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(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. . . . "

or study has been funded or undertaken." Staff Report, p. 38 (quoting from DIFR/EIS/EIR). **For this reason alone, the CCC should REJECT the Army Corps' consistency determination CD-0006-17**.

The Staff Report and the DIFR/EIS/EIR admittedly fail the requirements of Coastal Act § 30253. As quoted above, the statute requires that the Project "minimize risks to life and property in areas of high geologic, flood, and fire hazard" and assure slope stability and structural integrity. Coastal Act § 30253. As proposed, the Project does the exact opposite: it increases or maximizes risks to life and property by removing controls of downstream storm runoff and erosion flows, and, through the phased sediment removal and incremental removal of the dam itself, increases the risks posed by slope instability resulting from the rise of groundwater in the canyon walls (due to the presence of the dam) and the subsequent fall of groundwater that will occur during and after the dam removal. It is illogical, nonsensical, and irresponsible for the CCC to consent to a Project with such likely and serious adverse impacts.

Moreover, neither the CCC nor the Army Corps recognize the documented large, existing landslide on the western bank of the creek adjacent to and downstream of the dam. Geotechnologies Letter, p. 2. The toe of the landslide terminates the bottom of Malibu Creek and extends at least 500 feet up the slope; Malibu Canyon Road was constructed across this slide. Excavation of the sediments may remove lateral support of the landslide and dewatering of the slopes may increase the driving force of the landslide. As a result, the Project will increase the landslide's risk of reactivation.

In other words, implementing the Project will almost certainly exacerbate the existing landslide at the Rindge Dam site. In rain events, the increased landslide risk translates to severe downstream flooding of Serra Canyon and its environs. The Staff Report and the DIFR/EIS/EIR attempt to explain away these significant landslide concerns by asserting that slope stability studies and evaluations will be completed during the future "Pre-Construction Engineering and Design" phase of the Project. Staff Report, p. 39. The promise of these studies provides no solace to Serra Canyon. Before making its consistency determination, the CCC should insist on the completion of these studies so the CCC, the City of Malibu, Serra Canyon residents, and other stakeholders can evaluate necessary Project design. safety, stabilization, and mitigation measures needed to ensure the safety of downstream residents and property. **These evaluations must occur BEFORE a consistency determination is made so the CCC can objectively evaluate the Project's true risks and benefits**—as opposed to risking Serra Canyon safety on the outcome of future analyses.

The CCC staff tacitly adopts the SCPOA's position outlined above by admitting that future slope stability exploration and geotechnical evaluation cannot constitute a substitute for the documentation required for a consistency determination. Staff Report, p. 40. As a proposed remedy for this analytical shortfall, CCC staff recommends a process for future CCC staff and Commission review of the necessary geotechnical information upon its completion. Unfortunately, this future process leaves much to the future discretion of staff and the Commission, and may leave the SCPOA without a remedy if it disagrees with the CCC position.

The Commission should insist on the completion and evaluation of the necessary geotechnical reports NOW, before it considers Project consistency.

The Project Fails to Provide for Long Term Downstream Monitoring or Risk Reduction

The Staff Report admits that the Project will leave approximately 10,000 cubic yards of impounded sediment at the former dam site, and such material will be ultimately flushed through Malibu Creek to the ocean. Staff Report, p.7. As noted in the Geotechnologies Letter, the Project will not monitor the impacts of this residual sediment on Malibu Creek or its surrounding communities, including Serra Canyon. Geotechnologies Letter, p.3. The CCC should insist on such monitoring.

Further, the Project has no provision for future downstream monitoring or mitigation. For example, the Project could very well lead to devastating flooding of Serra Canyon in future rain events. The Project wholly ignores this possibility and provides no means for flood risk reduction or control. **Prior to considering the Project's consistency with the CZMA, the CCC should insist on a long term flood risk reduction plan for the "restored" Malibu Creek watershed**.

Conclusion

SCPOA appreciates the Commission's consideration of the information above and the opportunity to further present these issues to the Commission at the March 9, 2018 hearing on the Project. Based on current data and information, the SCPOA requests the CCC to **REJECT the Army Corps' consistency determination CD-0006-17 since the Project violates and cannot satisfy Coastal Act § 30253**. Without modifying the Project, the Project cannot "minimize risks to life and property in areas of high geologic, flood, and fire hazard" and assure slope stability and structural integrity.

Please contact us if you have any questions or wish to discuss these matters further.

Very truly yours,

KENNETH A. EHRLICH,
a Professional Corporation of
Elkins Kalt Weintraub Reuben Gartside LLP

cc: Mr. Jack Ainsworth (via email)
CCC Commissioners (via email)
Supervisor Sheila Kuehl (via email)
Mr. Richard J. Bruckner, Los Angeles County Director of Regional Planning (via email)
Ms. Nicole Englund (via email)
Ms. Christi Hogin, Esq. (via email)
Ms. Reva Feldman (via email)

Geotechnologies, Inc.
Consulting Geotechnical Engineers

439 Western Avenue
Glendale, California 91201-2837
818.240.9600 • Fax 818.240.9675

February 28, 2018
File Number 20647

Serra Canyon Property Owners Association

Attention: Jeff Follert

Subject: Response to California Coastal Commission Staff Report and
USACE Malibu Creek Ecosystem Restoration Study
Removal of Rindge Dam Arch and Spillway on Malibu Creek
Malibu, California

References: *California Coastal Commission Staff Report:*
Consistency Determination No. CD-0006-17, dated October 17, 2017.

US Army Corps of Engineers:
Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report with Environmental Impact Statement/Environmental Impact Report (EIS/EIR) Los Angeles and Ventura Counties, California, Volume 1, dated January 2017.

Dear Mr. Follert:

This firm has reviewed the above-referenced reports and has the following comments with regard to the proposed project and its impact upon downstream residents of Serra Canyon Property Owners Association (SCPOA). Several concerns regarding the project are cited below.

Background

The Serra Canyon Property Owners Association is a community of more than 100 homeowners that are located around the base of the Serra Retreat knoll, and along the Malibu Creek. The area is accessed by two roads: Serra Road and Cross Creek Road. Access to the community from Cross Creek Road relies upon the use of Cross Creek Bridge.

The community is located approximately 2.5 miles downstream of the Rindge Dam and approximately 0.5 miles upstream of the Pacific Coast Highway Bridge. Flooding of the community has been a threat during any large rain event. As recently as January 2017, a flood overtopped the Cross Creek Bridge and nearly flooded many of the homes along Cross Creek Lane. The community is concerned that the bridge will be damaged and the surrounding homes will be flooded with the discharge of additional sediment from the proposed project and the increase in streambed elevation of the creek. The threat of flooding is discussed by the U.S. Army Corps of Engineers (USACE) and the California Coastal Commission (CCC). Several sources of increased sediment production as a result of the project are cited below. The page citations refer to the California Coastal Commission Staff Report.

Concern 1- Increase in Flooding Risk Due to Streambed Elevation Rise

The USACE has selected Alternative 2b2 whereby the sediments will be removed by trucking and the dam arch will be demolished in steps. Each year, additional sediment will be removed and the arch will be lowered. It is anticipated that the process will take eight years to complete.

The subsequent increase in the streambed elevation (and commensurate increase in flood elevation) is clearly recognized by the USACE: "In Reach 2b, just upstream of Malibu Lagoon, 10-year deposition would average 5.1 feet in comparison to 4.1 feet for the with-project condition" (page 41). More concerning is the projection: "Up to 12 ft. of deposition is some locations could be expected in the lower reaches over the next 50 years" (page 41).

The project will commence with construction of access ramps (presumably of soil) and the removal of riparian and wetland vegetation growth on the impounded sediments (page 16). The vegetation forms erosion-resistant root fabric that precludes erosion of the retained sediments. It is anticipated that with the loss of the vegetation, erosion and mobilization of the exposed and loosened sediments will occur. The sediments and ramps will be exposed to erosion during the entire construction process of 8 years. The volume of sediment from this source is not considered in the USACE or the CCC reports. This source of sediment must be considered in the increase in streambed height already anticipated as a result of the project. Some formidable means of sediment stabilization needs to be addressed.

Concern 2- Increase in Flooding Risk Due to Landsliding

The CCC report recognizes the slope instability that will occur both during and after the removal of the impounded sediments. In fact, the report cites the absence of slope stability exploration or study in the USACE report. The CCC report cites that slope instability may occur as a result of the rise of groundwater in the canyon walls caused by the dam and the subsequent fall of groundwater that will occur during the dam removal.

However, neither the CCC nor the USACE recognize the large, existing landslide that is located on the western bank of the creek that is adjacent to and downstream of the dam. The landslide is shown on maps by Dibblee (1993) and Yerkes and Campbell (1980). The toe of the landslide terminates the bottom of Malibu Creek and extends at least 500 feet up the slope. Malibu Canyon Road was constructed across the slide.

Excavation of the sediments may remove lateral support of the landslide and dewatering of the slopes may increase the driving force of the landslide, thereby increasing the landslide's risk of reactivation.

The increase in downstream flooding risk comes from two possible post-landslide mechanisms: In the event of a landslide impounds Malibu Creek, the potential for overtopping and rapid erosion of the landslide-caused earthen dam. Secondly, any sediments added to the creek from landsliding

will be carried downstream and increase the streambed elevation as cited earlier. A comprehensive geotechnical engineering investigation is required not just of the slopes bordering the creek, but also a comprehensive investigation of the referenced landslide is required.

Concern 3- Inadequacy of Downstream Streambed Monitoring

The CCC recognizes (page 7) that "about 10,000 cubic yards of impounded sediment is estimated to remain after construction..." and that "this material is expected to be naturally flushed to downstream reaches…" Considering the time required for the sediment to reach the Serra Canyon Community, it may be several decades until the full impact of increasing flood heights will be felt.

Given that sediment from various sources will be added to Malibu Creek for several decades after the project is complete, a long-term monitoring and flood risk reduction plan for the Malibu Creek is needed. No such plan is currently proposed by either the CCC or the USACE. The plan should include regular topographic surveys of the creek bed; monitoring the movement of the sediment; monitoring of flood elevations; and plans for modification of the creek bottom to expedient sand movement to the ocean or removal of the sediment altogether.

Conclusion

Several potential sediment sources have been identified that will increase the streambed elevation of the Malibu Creek leading to an increase in the flood elevation in the vicinity of the Serra Canyon Community. The report by the USACE recognizes that the streambed elevation will rise, but does not consider all of the potential sediment sources. In addition, a long term streambed monitoring and flood risk reduction plan is needed.

Geotechnologies, Inc. appreciates the opportunity to provide our services on this project. Should you have any questions please contact this office.

Respectfully submitted,
GEOTECHNOLOGIES, INC.

REINARD T. KNUR
G.E. 2755, C.E.G. 1547

RTK:ae

Email to: [rjfollert@gmail.com], Attn: Jeff Follert
[KEhrlich@elkinskalt.com], Attn: Kenneth A. Ehrlich

REFERENCES

Dibblee, T.W. Jr., 1993, Geologic Map of the Malibu Beach Quadrangle, Los Angeles County, California, Dibblee Geological Foundation Map #DF-47, map scale 1:24,000.

Yerkes, R.F., and Campbell, R.H., 1980, Geologic Map of the East-Central Santa Monica Mountains, Los Angeles, County, California, United States Geological Survey Map I-1146, map scale 1:24,000.

California Coastal Commission, File October 17, 2017, Staff Report: Regular Calendar, Consistency Determination No.: CD-0006-17, 47 pages with Appendix.

US Army Corps of Engineers, January 2017, Malibu Creek Ecosystem Restoration Study Draft Integrated Feasibility Report with Environmental Impact Statement/Environmental Impact Report (EIS/EIR) Los Angeles and Ventura Counties, California, Volume 1, 571 pages with Appendices.

Law Office of John J. Waller
19903 Summit Drive
Topanga, CA 90290
(310) 721-7333
John.waller.law13@gmail.com

March 2, 2018

California Coastal Commission
Energy, Ocean Resources and Federal Consistency Division

Re: Consistency Determination re Malibu Creek Ecosystem Restoration Project - USACE's Proposal to Remove Rindge Dam

Honorable Commissioners:

Please be advised that my clients, Rod and Nancy Sanders, the owners of the property located at 3535 Cross Creek Lane, and William Winokur, the owner of the property located at 23255 Mariposa, both in the Serra Retreat neighborhood of Malibu, are very concerned that the proposal by the U.S. Army Corps of Engineers ("USACE") to remove Rindge Dam that is currently being evaluated by the California Coastal Commission ("CCC") is materially incomplete and deficient in a number of important respects, including, but not limited to, that it doesn't specify how downstream property owners, such as the Sanders, Winokur and other residents in the Serra Retreat neighborhood, will be protected from flooding and the related effects of flooding if the dam is removed. Because the proposal does not specify what mitigation measures will be implemented to address downstream flooding, as well as the substantially increased truck traffic attributable to the proposed project that will adversely impact the entire Malibu community, the CCC should vote to deny the proposal that is currently before it.

During the February 2017 rains the Sanders' property, and a number of nearby properties in their neighborhood, experienced significant flooding. During those rains the water levels in the creek rose to a point that most of the Sanders' backyard was inundated with swiftly flowing water. Those waters also covered a portion of the Sanders' patio area. This occurred even with the dam in place. Pictures of the flooding and some of the resulting damage are attached hereto. During those same rains, Winokur's property was nearly inundated by water and flood debris. Had the flood waters been several inches higher, his property would also have experienced substantial damage.

In addition, at times during the February rains, the Cross Creek Bridge, that provides a second vital means of ingress and egress for the entire Serra Retreat neighborhood, was inundated with water and unpassable. A picture of same during the February rains is attached.

This created a substantial safety issue as it left only one means of ingress and egress to the neighborhood. Had a structure fire or medical emergency arisen during a time when that bridge was impassible first responders might have been impeded from timely reaching structures or victims and residents would likely have faced similar issues is promptly evacuating their residences. If a fallen tree or mudslide were to also block the other avenue providing ingress and egress lives might be lost.

The USACE's Consistency Determination predicts that removal of the dam will exacerbate downstream flooding by causing the downstream creek levels to rise by nearly one foot during the initial 5-year period that the proposed removal of Rindge Dam is effectuated. (USACE's Consistency Determination CD-0006-17 (October 17, 2017), p.42.) The USACE's Malibu Creek Ecosystem Restoration Study, Draft Integrated Feasibility Report (IFR), with Environmental Impact Statement/Environmental Impact Report (EIS/EIR), (January 2017), Appendix B - Hydrology, Hydraulics and Sedimentation, p.B-156 (January 2017), concludes that the streambed level in the downstream area where the Sanders, Winokur and other Serra Retreat residents reside is likely to rise 1.9 feet, and the water surface elevation is likely to increase by .6 feet, after the 5-year construction period required to remove the dam and the accumulated silt and other debris behind the dam. Those increases will almost certainly cause the Sanders, Winokur and many other Serra Retreat residents to experience dramatically greater flooding and the damages related thereto. Although the Hydrology, Hydraulics and Sedimentation analysis concludes that "[i]f a similar amount of sediment deposition is predicted in the future sediment transport study, the flood risk due to future sediment deposition should be offset by sediment removal and maintenance plans at key locations along the downstream reaches" (*id*.), it is clear that if the CCC elects to proceed with the removal of Rindge Dam that substantial and adequate mitigation measures will be necessary to protect the downstream residents. Those mitigation measures need to be specifically identified and incorporated into any proposal that may be approved, rather than being left to speculative future determination and possible approval.

The Sanders and Winokur are also concerned about the adverse impact that the proposed project will have upon traffic in the greater Malibu area. The estimated 39,000 to 52,000 load truck trips on area roads over five years to remove the accumulated silt and other debris behind the dam, coupled with numerous additional unloaded truck trips, will dramatically impact the quality of life in Malibu and its adjoining communities. Adding that many trips by loaded and unloaded heavy-duty diesel trucks on already congested mountain roads in the area will create safety issues for motorists in the area and health concerns for nearby residents who will be faced with a substantial increase in hazardous diesel exhaust, including soot and other noxious gases.

Until the USACE's proposal is revised to specifically and appropriately address the foregoing concerns, the Sanders and Winokur strongly urge the Commission to vote to oppose the Rindge Dam removal proposal.

Sincerely,

Law Office of John J. Waller

John J. Waller

Attorney for Rod and Nancy Sanders,
and William Winokur

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

March 12, 2018

Eduardo T. De Mesa
Chief, Planning Division
Los Angeles District
U.S. Army Corps of Engineers
ATTN: Larry Smith
915 Wilshire Blvd., Suite 930
Los Angeles, CA 90017

Subject: Consistency Determination CD-0006-17 (Malibu Creek Ecosystem Restoration Project, Los Angeles County)

Dear Mr. De Mesa:

On March 9, 2018, the California Coastal Commission unanimously concurred with the above-referenced consistency determination. The Commission found that the project was consistent with the California Coastal Management Program. Please contact me at (415) 904-5288 should you have any questions regarding this matter.

Sincerely,

Larry Simon
Federal Consistency Coordinator

cc: CCC – South Central Coast District
Susan Ming, Corps of Engineers
James Hutchison, Corps of Engineers

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