FINDING OF NO SIGNIFICANT IMPACT

SAN CLEMENTE SHORELINE PROTECTION PROJECT

Orange County, California

The U.S. Army Corps of Engineers, Los Angeles District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Final Supplemental Environmental Assessment (SEA) dated April 2023, for the San Clemente Shoreline Protection Project evaluates minor modifications and environmental compliance updates for the proposed project that had previously been addressed in the June 2011 Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

The 2011 EIR/EIS and Feasibility Study, incorporated herein by reference, evaluated various alternatives that would stabilize and nourish locally starved beaches in San Clemente to remediate beach erosion damage to and protect existing structures including the Los Angeles to San Diego (LOSSAN) Rail Line. The recommended plan identified in that document, which has since been authorized by Congress consists of recurring placement of sand onto San Clemente Beach, centered about the San Clemente municipal pier, to protect the railroad and beach structures from damage by ocean waves. The railroad on either side of the fill area is protected by a riprap revetment constructed and maintained by the Southern California Railroad Association (SCRRA). The design beach fill consists of a 50 foot wide beach, approximately 3,600 feet long and a design foreshore slope of 8H:1V. The material to construct the beach will be dredged from a borrow site located 18 miles to the south offshore of Oceanside Harbor. Approximately 250,000 cubic yards of material will be placed during each episode. An estimated nine dredging and beach fill episodes are planned to occur over a 50-year period, beginning in 2023.

The 2023 SEA provides an updated environmental analysis including additional environmental commitments and documents updated compliance with applicable environmental laws and regulations. It also includes minor modifications to the project description. The No Action Alternative described in the 2023 SEA, for comparison purposes, would be to implement the authorized project as described in the 2011 EIR/EIS, without the proposed modifications, updated environmental commitments or updated compliance. The Proposed Action Alternative is to implement minor modifications to the authorized plan, including additional environmental commitments to implement conservation measures and permit requirements that were included in updated compliance documentation including a 2023 biological opinion from the National Marine Fisheries Service (NMFS) and a Section 401 Water Quality Certification from the California Regional Water Quality Control Board.

For both alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the Proposed Action are listed in Table 1:

Table 1: Summary of Potential Effects of the Proposed Action

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	☐	☐	☒
Air quality	☒	☐	☐
Aquatic resources/wetlands	☒	☐	☐
Invasive species	☒	☐	☐
Fish and wildlife habitat	☒	☐	☐
Threatened/Endangered species/critical habitat	☐	☒	☐
Transportation	☒	☐	☐
Cultural resources	☐	☐	☒
Floodplains	☐	☐	☒
Hazardous, toxic & radioactive waste	☐	☐	☒
Hydrology	☒	☐	☐
Land use	☒	☐	☐
Navigation	☒	☐	☐
Noise levels	☒	☐	☐
Public infrastructure	☒	☐	☐
Socioeconomics	☒	☐	☐
Environmental justice	☒	☐	☐
Soils	☐	☐	☒
Tribal trust resources	☐	☐	☒
Water quality	☒	☐	☐
Climate change	☒	☐	☐
Recreation Uses	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the Proposed Action. Environmental commitments as detailed in the Final SEA will be implemented, as appropriate, to minimize impacts. The contractor shall implement a Water Quality Monitoring Plan at the dredge and beach placement sites. Beach placement will be limited to a diked, single-point placement site or similar methodology to minimize nearshore turbidity. Construction activity on the beach shall be conducted 12 hours per day, 7 days a week. This restriction does not apply to dredging activities or pumping of sand onto the beach.

A public notice of this Supplemental EA was published in September 2022.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the USACE determined that the Proposed Action may affect and is likely to adversely affect the following federally listed species: Green sea turtle. The USACE initiated formal consultation with NMFS

on December 9, 2022. NMFS issued a Biological Opinion with conservation measures, terms and conditions, and recommendations to avoid, minimize or offset potential impacts to green sea turtles (GST) on May 8, 2023, and the USACE has incorporated those measures and recommendations into the Environmental Commitments outlined in Section 5.0 of this SEA.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE determined that the recommended plan has no adverse effect on historic properties.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with the section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in the 2011 EIR/EIS attached as Appendix B. The proposed modifications do not result in new or different effects to Waters of the United States so an updated 404(b)(1) evaluation is not required.

A water quality certification pursuant to section 401 of the Clean Water Act was obtained from the San Diego Regional Water Quality Control Board on November 3, 2022. All conditions of the water quality certification will be implemented to minimize adverse impacts to water quality. The 401water quality permit is attached as Appendix C.

A consistency determination (CD) with the California Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 was obtained from the California Coastal Commission for the original proposed action on November 2, 2011. All conditions of the negative determination shall be implemented in order to minimize adverse impacts to the coastal zone. The CD is attached as Appendix D.

All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives and coordination with appropriate agencies and officials has been completed. Based on this Final SEA, the reviews by other Federal, State, and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required for the proposed modifications (Proposed Action).

9 May 2023

Date

Julie A. Balten
Colonel, Corps of Engineers
Commanding

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

SAN CLEMENTE SHORELINE PROTECTION PROJECT
Orange County, California

Department of the Army
Los Angeles District Corps of Engineers

May 2023

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 INTRODUCTION

This document supplements the U.S. Army Corps of Engineers' (USACE) 2011 Final Environmental Impact Statement/Environmental Impact Report (2011 EIS/EIR) for the San Clemente Shoreline Protection Project.

This project is a coastal storm risk management project designed to protect existing structures and the Los Angeles to San Diego (LOSSAN) Rail Line. The authorized project as described in the 2011 EIS/EIR consists of recurring placement of sand onto San Clemente Beach, centered about the San Clemente municipal pier, to protect the railroad and beach structures from damage by ocean waves. The railroad on either side of the fill area is protected by a riprap revetment constructed and maintained by the Southern California Railroad Association (SCRRA). The designed beach fill consists of a 50 foot wide beach, approximately 3,600 feet long and a design foreshore slope of 8H:1V. The material to construct the beach during each even will be dredged from a borrow site located 18 miles to the south offshore of Oceanside Harbor.

The 2011 EIS/EIR analyzed multiple alternatives including revetments, groins and offshore breakwaters before concluding beach nourishment was the alternative to carry forward. In addition to the no action alternative, two beach width alternatives: 50 ft (15 m) and 115 ft (35 m). Evaluations of the 50ft and 115 ft beach widths impacts were analyzed in the 2011 EIR/EIS. The 50ft beach width was selected as the final plan.

The locations of the borrow site and beach fill remain the same. The total dredge volume and beach fill quantity remain the same. All other Proposed Action elements remain the same and are not addressed in this Supplemental Environmental Assessment (SEA).

The purpose of this SEA is to update the impact analysis to address minor changes to the project description as well as changed environmental conditions such as potential presence of GST, a Federally listed endangered species; identify additional environmental commitments to avoid, minimize or offset potential environmental impacts; and to provide an update of environmental compliance actions that have occurred subsequent to completion of the 2011 EIS/EIR. As such, the scope of this SEA is limited to resources that may be impacted or benefitted as a result of those changes. Resources addressed include Oceanography and Water Quality, Marine Resources (including Biological Resources), Geology and Topography, Cultural Resources and Noise. Other resources such as Ground and Vessel Transportation, Recreation, Aesthetics, Air Quality, and Public Health and Safety that were addressed in the 2011 Final EIS/EIR would not be affected differently from the proposed changes or changed conditions, and therefore are not discussed further in this document.

1.1 Project Location, Description and Proposed Modifications

1.1.1 Location. The City of San Clemente is located along the coast of southern California about 60 miles (100 kilometers) south of Los Angeles at the southern end of Orange County near the border of San Diego County. The study area is encompassed within the City of San Clemente and extends approximately 3,412 ft (1,040 m) from Linda Lane to T-Street and is located within

the San Clemente 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle in Section 4 of Township 9 South and Range 7 West.

1.1.2 Description of Authorized Project and Proposed Modifications

The Authorized Project will be constructed with hopper dredging equipment with pump ashore capability and conventional earthmoving equipment. Typical Los Angeles District beach fill projects require large capacity open-ocean capable dredges. A medium-sized hopper dredge would likely be used. The hopper dredge effective capacity is estimated at 3,500 cy. The hopper dredge would pump out the dredge material via a 24-inch pipe line at 1,800 cy/hr (1,376 m3/hr). The hopper dredge will be filled at the designated borrow site approximately one mile offshore of Oceanside and hauled approximately 21 miles (35 km) to San Clemente. At the receiver beach, the dredge will be attached to a moored floating section of pipeline extending 1,500 ft (457 m) to the shoreline. The material would be resuspended and discharged through the on-board pumping system to the receiver site.

The hopper dredge requires a mono buoy to discharge its sand onto the beach. A mono buoy is a floating pipeline connection platform that is moored to the seafloor, and is used to interconnect with a steel sinker pipeline that carries the slurry along the seafloor to the beach. For this Project, the mono buoy would be anchored in at least 25 ft (7.6 m) of water, between 2,500 and 5,000 ft (762 to 1,524 m) from shore and in the appropriate location in relation to sensitive resources and engineering considerations. From one mono buoy location, sand can be pumped directly onshore and up to approximately 2,000 ft (610 m) alongshore in either direction. Dredging would be performed 24 hours a day, 7 days a week. Shore equipment would work 12 hours a day, 7 days a week. The proposed Project duration is estimated at 46 working days. The resultant beach is 50 feet (15 m). Beach fill would be 3,412 ft (1,040 m) long with a +17 ft (+5.2 m) crest elevation. The dredge volume is estimated to be approximately 251,000 cubic yards (192,000 m^3)**,** with 8 subsequent nourishment events projected every 5-6 years.

Onshore Placement Method
Sand would be combined with seawater until it reaches the consistency of slurry. It then would be conveyed to the beach either via pipeline or a combination of hopper dredge and pipeline, as described above. Existing sand at the receiver site would be used to build a small, “L”-shaped berm to anchor the sand placement operations. The short side of the “L” would be transverse (crosswise) to the shoreline and would be approximately 50 ft (15 m) long. The long side would be shore parallel at the seaward edge and would be approximately 200 ft (61 m) long. Berm construction may be adjusted from the design requirements during fill placement depending on actual field conditions. The crosswise side of the berm would be constructed to allow alongshore landward beach access for emergency access at all times.

The slurry would be pumped onto the beach between this berm and toe. The berm reduces ocean water turbidity by allowing all the sand to settle inside the bermed area while the seawater is channeled along the berm until it reaches the open end where it drains into the ocean. Temporary dikes within the berm will allow sand to settle in designated areas. Once a 200 ft (61 m) section of berm is filled in with sand, another 200 ft (61 m) of berm will be created, the pipeline will be moved or extended on the dry beach only into the new berm area, and the

process would begin again; the pipeline along the seafloor would not be moved. As the material is deposited behind the berm, the sand would be spread using two bulldozers and one front-end loader to direct the flow of the sand slurry and form a gradual slope to the existing beach elevation. The berm would be subject to the forces of the waves and weather once constructed and will eventually settle down to a natural grade for the beach.

Environmental commitments that were recommended at the time the 2011 EIS/EIR were completed. The status of environmental compliance, were included in Section 7.0 of that document.

Proposed Modifications:

Updated Schedule. Construction of the San Clemente Shoreline Protection project is expected to start in fall/winter 2023. The offshore equipment typically operates on a 24-hour basis; heavy equipment such as bulldozers working on the beach are restricted to 12 hours per day, 7 days a week. The 7 days per week work schedule is an update from the 2011 EIS/EIR, and is consistent with other compliance documents. Dredging is expected to take approximately 46 working days. Dredging and beach placement activities would take place concurrently.

Staging Area. Staging areas have slightly expanded from the 2011 EIR/EIS. The updated staging area is illustrated in Figure 4.

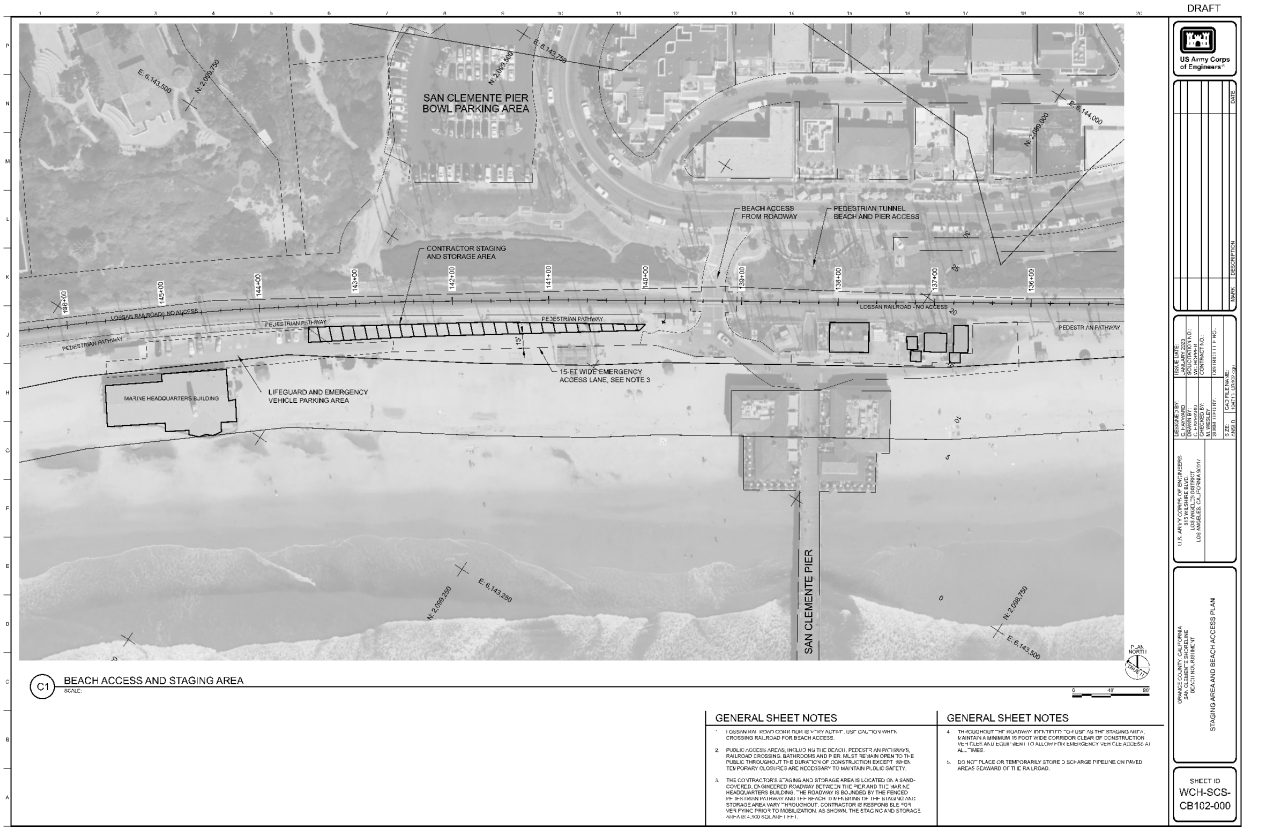

Figure 1. Updated construction staging area on San Clemente Beach.

Modified or Additional Environmental Commitments, including Permit Conditions. See Section 5.2.

1.2 Supplemental Environmental Assessment Process

This document has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C.§4321-4347); the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 C.F.R. Parts1500-1508); and the USACE's NEPA Regulations (33 C.F.R. Part 230). A Public Notice was issued in September 2022 on the Corps' Los Angeles District website announcing the preparation of the Supplemental EA and soliciting public comments through October 15, 2022. No comments were received.

1.3 Relationship to Environmental Protection Statutes, Plans, and Other Requirements

The USACE is required to comply with all pertinent federal laws and regulations; compliance is summarized in Section 5.1.

2 PROJECT AUTHORITY, PURPOSE AND NEED

2.1 Project Authority

The Project Authority remains the same as that described in the 2011 EIR/EIS. The San Clemente Shoreline Reconnaissance Study, a Section 905(b) Analysis of the Water Resources Development Act of 1986 (WRDA 86), was prepared as an initial response to the Energy and Water Appropriations Act of 2000, Public Law (P.L.)106-60, September 29, 1999 which
reads as follows:

> "The Committee recommendation includes funds for the Corps of Engineers to conduct a reconnaissance study investigating shoreline protection alternatives for San Clemente, California."

In addition, Section 208 of the Flood Control Act of 1965, P.L. 89-298, October 27, 1965 states:

> "The Secretary of the Army is hereby authorized and directed to cause surveys for flood control and allied purposes, including channel and major drainage improvements, and floods aggravated by or due to wind or tidal effects, to be made under the direction of the Chief of Engineers, in drainage areas of the United States and its territorial possessions, which include the localities specifically named in this section…Coasts of Washington, Oregon, and California to determine advisability of protection work against storm and tidal waves."

2.2 Project Purpose and Need

The Project Purpose and Need remains the same as that described in the 2011 EIR/EIS. The purpose of this Project is to provide shore protection through nourishment of the beach at and around the City of San Clemente Pier. Developing and maintaining the beach is needed to prevent the severe beach erosion that results from winter storms and to prevent damage to adjacent beachfront structures, including the heavily used rail line that runs along the beach through the city. In addition to the above, the loss of sand at the beach would have a negative impact on recreation, which supports the local economy, and would reduce the ecological functioning of the sand beach/littoral zone

3.0 PROJECT ALTERNATIVES

3.1 No Action Alternative

The No Action Alternative would be to implement the authorized project as described in the 2011 EIR/EIS, without the proposed modifications, updated environmental commitments or updated compliance.

3.2 Proposed Action

The Proposed Action Alternative is to implement the authorized project with minor modifications as described in Section 1.1.2, including additional environmental commitments listed in Section 5.2. Additionally implementing conservation measures and permit requirements that were included in updated compliance documentation including a 2023 biological opinion from the NMFS (Appendix D) and a Section 401 Water Quality Certification (WQC) from the California Regional Water Quality Control Board (CRWQCB) (Appendix B).

4.0 ENVIRONMENTAL INVENTORY AND CONSEQUENCES

The Affected Environment at the project site is generally as described in the 2011 EIR/EIS (USACE, 2011) and summarized below. Significance criteria specified in the 2011 EIR/EIS (USACE, 2011) remain the same.

4.1 Oceanography and Water Quality

4.1.1 Affected Environment

Water and sediment quality in the dredge and placement areas are as described in the 2011 EIR/EIS and 2012 Feasibility Report.

Water temperatures, salinity, dissolved oxygen concentrations and light transmittance are largely typical for Southern California nearshore waters. As summarized in the 2012 Feasibility Report, water temperatures range from approximately 14°C (winter minimum) to 22°C (summer maximum). During the summer, surface water temperatures are up to 10°C warmer than those in deeper waters. Near shore salinity is generally uniform, from approximately 33 to 34 ppt. Seasonally, the near-surface salinity can decrease near the Prima Deshecha & Segunda Deshecha Watershed following storm-related discharges of freshwater and/ or (historically) intermittent discharges of sewage into the river. Dissolved oxygen concentrations typically lie between approximately 6.5 and 10 milligrams per liter (mg/L), but may drop below approximately 5 mg/L at depths of 60 meters. Light transmittance (indicating water clarity) has been measured at approximately 4 to 4.5 meters (13 to 15 feet). Some reduction was associated with storm activity, particularly in shallower, near shore waters. Both light and nutrients are needed to support photosynthesis by attached and planktonic plants.

Nutrient concentrations are also expected to be similar to that elsewhere in the Southern California Bight: Nitrates at approximately 5 to 200 nanomoles per liter; phosphates at approximately 100 to 500 nanomoles per liter; and ammonium at approximately 300 nanomoles per liter.

Sediment Quality. A Sampling and Analysis Program was conducted in 2003, the material in the borrow area has been determined to be clean, beach-compatible sand. This determination was presented to the Southern California Dredged Material Management Team (SC-DMMT) on December 9, 2020 which concurred with the suitability determination.

4.1.2 Significance Criteria

Impacts to marine water quality are considered significant if any of the following apply:

- The water quality objectives in the California Ocean Plan (SWRCB 2005) are violated; and/or
- Project operations or discharges that change background levels of chemical and physical constituents or elevate turbidity would produce long-term changes in the receiving environment of the site, area, or region that would impair the beneficial uses of the receiving water.

Impacts are considered less than significant if the project would result in elevation of contaminants, but the levels remain below water quality criteria or if elevation of contaminant concentrations above criteria occurs only within a couple of hundred feet or less of the point of discharge for a few hours or less.

An impact to oceanographic conditions or coastal processes would be considered significant if any of the following apply:

- Nearshore wave characteristics are substantially and adversely altered;
- Nearshore sediment transport is substantially and adversely altered; and/or
- Shoreline erosion is substantially increased.

The following mitigation measures have been formulated to ameliorate any potential water quality impacts:

MM-WR-50-1.1: A Storm Water Pollution Prevention Plan (SWPPP) and an California Department of Fish and Wildlife Office of Spill Prevention and Response Permit (OSPRP) shall be prepared for all construction activities. These plans shall specify specific measures that shall be taken during dredging and beach
construction to avoid introducing contaminants to the ocean via leaks and spills. All measures shall be adhered to during Project construction.

MM-WR-50-1.2: Turbidity shall be monitored during dredging. If a visible turbidity plume is observed beyond the immediate dredging area, dredging activities shall be modified (e.g., decrease the rate of dredging, move to a new dredge location) until the turbidity plume disperses. Turbidity also shall be monitored during beach fill operations. If significant turbidity (i.e., a visible turbidity plume beyond the surf zone or rip current area) is observed, beach fill operations

shall be modified (e.g., by slowing the rate of fill) until the turbidity plume disperses.

4.1.3 Environmental Consequences

4.1.3.1 Proposed Action

Impacts to oceanography and water quality are as described in the 2011 EIR/EIS . The primary potential for degradation of water quality from the proposed action is through the generation of turbidity during the dredging and sediment discharge to the beach. Dredging activities at the borrow site will result in a localized surface plume, which the San Diego Association of Governments (SANDAG) estimated to extend under worst-case conditions to 1,000 feet based on overall mean grain size diameter and average current speed (SANDAG 2000). The estimated average down current distance of the turbidity plume was estimated to be 272 to 329 feet.

Turbidity plumes generated during discharge to receiver sites would be expected to be confined primarily to the naturally turbid surf zone and associated rip currents. The turbidity plumes remained in the surf zone unless rip currents carried them offshore (SANDAG 2000). The proposed Project method of discharging the sediments behind an L-shaped berm allows fine particles to settle prior to introduction to the ocean and reduces the potential for nearshore turbidity.

The proposed modifications to the authorized project, including changes to schedule, staging areas and updated environmental commitments, would have no additional effect to any listed significance criteria. The proposed changes would not violate water quality objectives, or change background levels of chemical and physical constituents or elevate turbidity to an extent that it would produce long-term changes in the receiving environment of the site, area, or region that would impair the beneficial uses of the
receiving water.

4.1.3.2 No Action Alternative

Impacts are the same as described in the 2011 EIR/EIS for the Proposed Action. The No Action Alternative would not violate water quality objectives, or change background levels of chemical and physical constituents or elevate turbidity to an extent that it would produce long-term changes in the receiving environment of the site, area, or region that would impair the beneficial uses of the receiving water.

4.2 Marine Resources

4.2.1 Affected Environment

Marine resources in the dredge and placement areas are essentially as described in the 2011 EIR/EIS (USACE, 2011). The Project area includes multiple habitat types including terrestrial shoreline, sandy shoreline, sandy intertidal, rocky intertidal, and softbottom and hardbottom subtidal. The biological constituents are typical of these Southern California habitat types, and discussed in depth in the 2011 EIR/EIS.

Additionally, the offshore borrow site contains sand bottom along with experimental artificial reef structures constructed by CDFW in 1987 (Bedford, 1993). Several of the Oceanside Reef 2 structures lie within the Project's borrow site at about the 40-42' depth. The structures are single mound rock quarry piles rising approximately 5 to 9 feet above the bottom, with circumferences approximately 50 feet. The presence of the artificial reef was unknown and not discussed in the 2011 EIS/EIR (USACE, 2011). During multi-beam survey efforts by the USACE, the artificial reef was discovered and investigated. Additional CDFW documents detailing their exact location, construction method, position relative to other CDFW artificial reefs and experimental objectives were found (CDFW Oceanside Artificial Reef 2 report, date unknown). Upon discovery of this information, the USACE notified NMFS of this update to the borrow site information under the auspices of ongoing consultation (Appendix D)

The USACE has amended the borrow site to exclude the artificial reef structures along with a 300 foot buffer zone surrounding them. Given that the individual reef mounds are located in a linear fashion along the 40-42 foot bathymetric contour, the individual structures were linked in a contiguous manner to create a cohered buffer zone. The updated borrow site figure (Figure 5) with 300 foot dredging offset was forwarded to the NMFS for inclusion to the consultation.

Figure 2. Updated Borrow Site schematic with 300 foot dredging offset depicted for CDFW Artificial Reef 2 avoidance.

4.2.1.1 Threatened and Endangered Species

The threatened and endangered species that may occur in the vicinity of the project area and as described in the 2011 EIR/EIS include White abalone (*Haliotis sorenseni*), Southern steelhead (*Oncorhynchus mykiss*), Western snowy plover (*Charadrius alexandrines nivosus*) and California least tern (*Sterna antillarum browni*). Consultation with the NMFS and USFWS was not undertaken as these species were considered unlikely to occur directly within the Project area and would not be directly or indirectly affected by the project. However, this SEA addresses the potential presence of green sea turtles that are now known to transit through the general vicinity and may occur at times in the reef habitat that is located immediately offshore adjacent to the placement site and, or within the borrow site.

Green sea turtle

The project area contains significant forage resources for GST (GST) forage species including surfgrass (*Phyllospadix torreyi* and *P. Scouleri*), red algaes, invertebrates, etc. Although GST presence data is minimal, stranding data (NMFS, 2020) indicates that GST are present and likely utilize offshore resources in transiting between Anaheim Bay estuarine complex/Seal Beach National Wildlife Refuge to the north and to San Diego Bay in the south.

The offshore borrow site overlaps with several individual artificial mounded reef structures built by the California Department of Fish and Game (now CDFW) in the 1987. These artificial reefs may offer forage and/or resting opportunities for GST.

4.2.2. Significance Criteria

An impact to biological resources will be considered significant if a project alternative results in:

- A direct adverse effect on the population of a threatened or endangered species or the loss or disturbance of important habitat for a listed species;
- A long-term net loss in the habitat value of a sensitive biological habitat. For the purposes of this analysis, kelp beds, and well developed rocky intertidal and surfgrass beds are considered sensitive biological habitats;
- Substantial impedance to the breeding, movement or migration of fish or wildlife;
- Substantial loss to the population of any native fish, wildlife or vegetation. For the purpose of this analysis, substantial is defined as a change in a population that is detectable over natural variability for a period of five years or more; and/or
- Substantial adverse impact on Essential Fish Habitat.

MM-BR-50-2.1: An underwater survey for kelp and surfgrass shall be conducted by marine biologists prior to the initiation of beach fill activities. Based on the survey, a mooring location and a pipeline route shall be selected that minimizes contact with surfgrass and kelp habitat. If kelp and surfgrass cannot be avoided completely, immediately following beach fill activities, another survey of the mooring and pipeline areas shall be conducted to determine whether kelp and surfgrass were damaged. If substantial damage to surfgrass or kelp occurs, an additional survey shall be conducted six months after the beach fill to determine if kelp and surfgrass have recovered. If substantial damage to kelp and eelgrass is still observed, restoration of habitat shall

be implemented in consultation with the resource agencies.

MM-BR-50-2.2: Shallow subtidal surfgrass beds in the vicinity of San Clemente Beach shall be monitored to determine whether the proposed action adversely affects shallow subtidal reefs and surfgrass. Underwater transects shall be established offshore and downcoast from the proposed receiver beach. Control transects also shall be established upcoast of the project area. The transects shall be monitored by qualified biologists before and after the proposed action to determine whether the beach fill results in a long-term loss of surfgrass and/or reef habitat. The mitigation and monitoring plan is included as Appendix B. If adverse significant impacts to surfgrass and/or reef habitat compared to controls and baseline conditions are observed from the monitoring, subsequent nourishment activities will be modified to avoid or minimize these impacts as part of adaptive management. If adverse significant impacts still are observed after all reasonable attempts to avoid or minimize impacts have been exhausted, additional renourishment would not occur until impacted surfgrass has recovered or compensatory mitigation is completed. Compensatory mitigation will consist of the creation of shallow rocky habitat in the Project area at a site to be determined in consultation with NOAA Fisheries and CDFW. Rocky reef habitat will be created in the Project area at a ratio of 1 acre of rocky reef habitat created for 1 acre of rocky reef habitat buried. If the monitoring determines that surfgrass has been affected by the Project, an experimental surfgrass restoration will be implemented. A successful method to transplant surfgrass has not been demonstrated, but recent studies by researchers at the University of California, Santa Barbara, have demonstrated some success restoring surfgrass using sprigs (Bull et al 2004).

4.2.3 Environmental Consequences

4.2.3.1 Proposed Action

In addition to the impacts to marine resources described in the 2011 EIR/EIS, potential impacts to GST may occur in the form of direct contact with the hopper dredge and support vessels. Impacts to surfgrass in the sediment discharge site may also occur, which could indirectly affect GST by disrupting potential foraging habitat. This is addressed more fully below.

Essential Fish Habitat

The USACE has determined that the proposed modifications to the authorized project will not result in any new substantial, adverse impacts to any species managed under the Coastal Pelagic Species Management Plan, Pacific Coast Groundfish Fishery Management Plan, or their habitat. Impacts, such as turbidity associated with dredging and placement of dredged materials would be temporary and insignificant.

With or without the proposed modifications, some cross shore movement of sand due to wave action is expected to occur, which may have impacts to surfgrass and, or unvegetated reef that occur offshore of the placement area. While the Coastal Engineering modeling that was conducted cannot predict where or for how long the material will settle, the depth of deposition is not expected to be substantial or persistent in most areas as it would continue to be subject to currents, wave action and other coastal processes. However, post-construction monitoring will

occur as outlined in the 2011 EIS/EIR to ensure that this presumption is correct and to determine if adaptive management or offsets for loss of surfgrass are required.

If adverse significant impacts to surfgrass are observed from the monitoring, subsequent nourishment activities will be modified to avoid or minimize these impacts as part of adaptive management. If adverse impacts still are observed after all reasonable attempts to avoid or minimize impacts have been exhausted, compensatory mitigation would be completed. Potential mitigation, if necessary is described in the Mitigation Monitoring and Reporting Plan. (2011 EIS/EIR)

Threatened and Endangered Species

Impacts to threatened and endangered species, other than GST, are as described in the 2011 EIR/EIS . As with the authorized project, the proposed modifications (Proposed Action) would not affect White abalone, Southern steelhead, Western snowy plover, or California least tern, as these species are still considered absent from the project area.

Since the 2011 EIR/EIS publication , additional data concerning GST has become available establishing local populations within San Diego Bay and Los Alamitos/Seal Beach NWS. Some information was obtained through the collaborative U.S. Navy and the NMFS satellite tagging efforts, and NMFS stranding data supplemented. This data, combined with the 12 year lapse between the 2011 EIR/EIS, lead the USACE to initiate informal consultation under the Endangered Species Act (ESA) (16 U.S.C. § 1531 et. seq.) Section 7 on August 16, 2022. The USACE provided additional analysis concerning surfgrass and rocky reef habitat acreages within the Project area. Through further coordination with the NMFS, due to uncertainty on the number of GST that may be present in the Project area and potential effects on GST's significant forage resource surfgrass, NMFS requested transition to formal consultation which was initiated December 9, 2022. Consultation was completed with issuance by NMFS of a final Biological Opinion (BO) on May 8, 2023 (Appendix D).

The USACE has included the following monitoring and avoidance measures that would minimize effects to GST as a result of the proposed action:

1. During dredging, transit to and from the Oceanside Borrow Site, and placement of dredged material at the Placement Area, a qualified biologist or qualified monitor with experience monitoring GST will be onboard the hopper dredge to monitor for the presence of GST. The GST monitor will identify and communicate if there is a need to cease or alter operations to avoid impacts to GST.

2. During dredging, the biological monitor will periodically check in the hopper for the presence of GST.

3. Adequate lighting will be provided during nighttime operations (i.e., dredging, dredge material transport and placement) to allow the monitor to observe the surrounding area effectively.

4. The biologist or monitor will clear the dredging area and confirm no GSTs are present 30 minutes prior to the startup of dredging operations.

5. If a GST is observed within the vicinity of the project site during project operations, all appropriate precautions shall be implemented to avoid or minimize unintended impacts. These precautions include, but are not limited to:

- Cessation of operations within 100 feet of an observed GST;
- Operations may not resume until the GST has departed the monitoring zone by its own accord or has not been observed for a 15-minute period of time; and
- Maneuver the hopper dredge to avoid any free-swimming GSTs observed during transit.

6. Biological monitors will maintain a written log of all GST observations during project operations. This observation log will be provided to the USACE and NMFS as an attachment to the post-construction report for the project. Each observation log will contain the following information:

- Observer name and title;
- Type of construction activity (maintenance dredging, etc.);
- Date and time animal first observed (for each observation);
- Date and time observation ended (for each observation). A GST observation will terminate if (1) an animal is observed exiting the monitoring zone or (2) after a 15-minute period of no observation (assumption is that animal has exited, but was not observed to do so);
- Location of monitor (latitude/longitude), direction of GST in relation to the monitor, and estimated distance (in meters) of GST to the monitor; and
- Nature and duration of equipment shutdown.

7. Any observations involving the potential "take" of GSTs will be reported to the USACE within 10 minutes of the incident and to the NMFS stranding coordinator immediately thereafter.

8. The Contractor will implement an Environmental Protection Plan that will include a GST Monitoring and Avoidance Plan and an employee training program on GST observation protocols, avoidance, and minimization measures. The program will be conducted by the Biological Monitor and a record kept of dates of training, names and positions of attending employees, and an outline of the training presentation.

The Proposed Action would not have a significant adverse impact on biological resources as it would not result in any of the following:

- A direct adverse effect on the population of a threatened or endangered species or the loss or disturbance of important habitat for a listed species;
- A long-term net loss in the habitat value of a sensitive biological habitat;
- Substantial impedance to the breeding, movement or migration of fish or wildlife;
- Substantial loss to the population of any native fish, wildlife or vegetation; or
- Substantial adverse impact on Essential Fish Habitat.

4.2.2.2 No Action Alternative

With the exception of minor changes in staging areas, schedules and environmental commitments, the No Action alternative is physically similar to the Proposed Action. As with the Proposed Action, construction of the Authorized Project as defined in the 2011 EIS/EIR would result in recurring dredging and discharge of sediment at San Clemente. Therefore, effects of the No Action alternative on biological resources would be similar to those described above. Without implementation of the minimization and avoidance measures for GST, however, effects to that species may be more substantial. As no resident population of GST occurs within the action area and it is unknown how many if any GST would be present in the area of potential effects during dredging and disposal activities. Effects may not be considered significant under NEPA, but the No Action alternative would not be in compliance with the Endangered Species Act as it lacks avoidance and mitigation measures.

4.4 Noise

4.4.1 Affected Environment

Noise in the dredge and placement areas are as described in the 2011 EIR/EIS .The Project beach site is currently beach property, adjacent to residential and commercial property as well as LOSSAN rail tracks. The Project's borrow pit site is approximately
2,624 ft (800 m) offshore of the coast of Oceanside Harbor. The nearest residential properties are located approximately 4,265 ft (1,300 m) east of the borrow pit location.

4.4.2 Environmental Consequences

4.4.2.1 Significance Criteria

Impacts would be considered significant if the alternative results in:

- Permanently elevated noise levels within the project area.

4.4.2.2 Proposed Action

Impacts to noise are as described in the 2011 EIR/EIS (USACE, 2011) with the exception that impacts for beach operations would extend to 12 hours per day, 7 days a week. The primary noise generators are the hopper dredge and beachside heavy equipment. While this work schedule is a change from the 10-11 hour workday described in the 2011 EIS/EIR, the effect would only occur while construction equipment is operating and would cease after and in-between nourishment episodes. Therefore, the Proposed Action would not result in permanently elevated noise levels within the project area and significant noise impacts would not occur.

4.4.2.3 No Action Alternative

As with the Proposed Action, construction would cause short-term but less than significant adverse noise impacts during dredging and placement activities.

4.5 Cultural Resources

4.5.1 Affected Environment

In accordance with Section 106 of the NHPA USACE initiated consultation with California Office of Historic Preservation (SHPO) and Native American Tribes on November 22, 2022. USACE was provided a list of contacts for Native American Tribes affiliated with the San Clemente area by the California Native American Heritage Commission; these included:

- Juaneno Band of Mission Indians
- Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- Juaneno Band of Mission Indians Acjachemen Nation 84A
- La Jolla Band of Luiseno Indians, Pala Band of Mission Indians
- Pauma Band of Luiseno Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians

In the consultation letters to SHPO and the above Tribes, USACE defined the APEs (onshore and offshore), presented the results of identification and evaluation efforts set forth in the 2011 EIR/EIS and the results of 2020 remote sensing survey, and made a determination of no historic properties affected. No responses were received from Tribes. All consultation correspondence is attached as Appendix E.

One locally significant historic resource is located within the onshore part of the APE: the San Clemente Municipal Pier. The City's original pier was designed by engineer William Ayer and constructed by the City of San Clemente in 1928. After this pier was demolished by storms in 1939, Ayer designed a new pier that was built in 1940. The pier was severely damaged by storms again in 1983 and was substantially reconstructed. Therefore, the extant pier structure does not retain integrity of design, materials, and workmanship of either the original 1928 pier or the 1939 reconstructed pier. In 2006, the City of San Clemente commissioned a historic resources survey update in order to update its Historic Structures list. This survey formally recorded and evaluated the San Clemente Municipal Pier and assigned it a California Historic Register Status Code designation of 5B as being a locally significant property that is not eligible for listing on either the California Register or National Register. The pier is listed on the City's Historic Structures List. USACE concurs with this assessment that while the Pier may be locally significant it is not National Register eligible. However, for the purposes of this undertaking, USACE is proposing to assume the San Clemente Municipal Pier is eligible for inclusion in the National Register of Historic Places (NRHP) under criteria A and C. Based on the nature of the undertaking, the Proposed Action will not cause harm to the structure and will have no adverse effect on the pier's historical integrity.

The 2020 remote sensing survey identified the artificial reef structures described in Section 4.2.1, but no other anomalies that could be shipwrecks or other submerged historic resources on the seafloor.

In accordance with 36 C.F.R. Part 800.4(b)(1), USACE has determined that the 2011 EIR/EIS and the 2020 remote sensing survey constitutes a reasonable and good faith effort to identify historic properties and that none were identified. USACE has determined that no historic properties will be affected by the Proposed Action.

Concurrence on USACE's determination of no adverse effect on historic properties was received from SHPO on May, 4 2023. No responses were received from any of the Tribal entities contacted.

4.5.2 Environmental Consequences

4.5.2.1 Significance Criteria

Adverse effects to sites and properties listed on, or eligible for, the NRHP are evaluated based on the Criteria of Adverse Effect as outlined in 36 C.F.R. Part 800.5 of the regulations implementing Section 106 of the NHPA. The criteria for adverse effect includes:

- An adverse effect is found when an undertaking may alter, directly or indirectly, the characteristics of an historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of an historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register.

- Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Adverse effects on historic properties include, but are not limited to: (i) Physical destruction of or damage to all or part of the property; (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 C.F.R. part 68) and applicable guidelines; (iii) Removal of the property from its historic location; (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance; (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and, (vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.**4.5.2.2 Proposed Action**

Impacts to cultural resources are as described in the 2011 EIR/EIS.

Significant adverse impacts to cultural resources are not expected.

4.5.2.3 No Action alternative.

Impacts are the same as described in the 2011 EIR/EIS for the Proposed Action.

Significant adverse impacts to cultural resources are not expected.

5.0 ENVIRONMENTAL COMPLIANCE AND COMMITMENTS

5.1 Compliance

5.1.1 National Environmental Compliance Act of 1969 (Public Law (PL) 91-190); National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §4321 et seq.); Council on Environmental Quality Regulations for Implementing NEPA, 40 C.F.R. Parts 1500 to 1508; USACE Regulations for Implementing NEPA, 33 C.F.R. Part 230.

The National Environmental Compliance Act includes the improvement and coordination of Federal plans to attain the widest range of beneficial uses of the environment and to achieve a balance between population and resource use permitting high standards of living and a wide sharing of life's amenities.

The NEPA was established to ensure that environmental consequences of federal actions are incorporated into Agency decision-making processes. It establishes a process whereby parties most affected by impacts of a proposed action are identified and opinions solicited. The proposed action and several alternatives are evaluated in relation to their environmental impacts, and a tentative selection of the most appropriate alternative is made. If it is determined that a Federal action will have a significant impact upon the quality of the human environment, an EIS must be prepared. If no significant impact would occur, then a Finding of No Significant Impact is prepared.

This SEA has been prepared to address impacts and develop mitigation (if warranted) associated with modifications included in the Proposed Action. A public notice was published in September 2022 on the USACE website, soliciting public comments on the Proposed Action through October 15, 2022. No comments were received.

5.1.2 Clean Water Act of 1972 (33 U.S.C. §1251 et seq.)

The Clean Water Act (CWA) was passed to restore and maintain chemical, physical, and biological integrity of the Nation’s waters. Specific sections of the CWA control the discharge of pollutants and wastes into aquatic and marine environments. The major sections of the CWA that apply to the proposed project is Section 401, which requires certification that the discharges comply with the State Water Quality Standards for actions within state waters, and Section 404(b)(1), which establishes guidelines for discharge of dredged or fill materials into an aquatic ecosystem. Although Sections 401 and 404(b)(1) of the CWA apply, by their own terms, only to applications for Federal permits, the USACE has, by regulation, made them applicable to their own projects. This policy is set out in USACE regulations at 33 C.F.R. Part 336. Section 336.1(a) of that regulation states, "Although the USACE does not process and issue permits for its own activities, the USACE authorizes its own discharges of dredge or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the Section 404(b)(1) guidelines."

The USACE has received a Section 401 Water Quality Certification (WQC) and has prepared a Section 404(b)(1) Analysis for the proposed project, as modified. The USACE applied for a WQC) with the Santa Ana Regional Water Quality Board (SARWWB) on September 22, 2022. The Section 401 WQC was received from the San Diego Regional Water Quality Board (SDRWQB) on November 3, 2022 (Appendix F). The WQC was issued through San Diego Regional Water Quality Review Board (SDRWQCB) because the Project borrow site lies within San Diego County waters. The USACE will comply with stated permit conditions. The 404(b)(1) Evaluation is was completed as part of the 2011 EIR/EIS (USACE, 2011) and is appended to that document. No modifications were required to the 404(b)(1) as a result of the proposed modifications. The Proposed Action is in compliance with the Clean Water Act.

5.1.3 Endangered Species Act of 1973 (16 U.S.C. §1531 et seq.)

Under ESA Section 7(a)(2), each federal agency must ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of the species' designated critical habitat (16 U.S.C. § 1536(a)(2)). If an agency determines that its actions "may affect" a listed species or its critical habitat, the agency must conduct informal or formal consultation, as appropriate, with either the United States Fish and Wildlife Service (USFWS) or the NMFS, depending on the species at issue (50 C.F.R. §§402.01, 402.14(a)– (b)). If, however, the action agency independently determines that the action would have "no effect" on listed species or critical habitat, the agency has no further obligations under the ESA.

The USACE initiated informal consultation with a not likely to adversely affect (NLAA) determination for GST on August 16, 2022. Upon further coordination with the NMFS the USACE initiated formal consultation for GST on December 9, 2022. Upon issuance by NMFS of a Biological Opinion on May 8, 2023 (Appendix D), the project is in compliance with the ESA.

5.1.4 Coastal Zone Management Act of 1976 (16 U.S.C. §1456 et seq.)

Under the Coastal Zone Management Act (CZMA), any federal agency conducting or supporting activities directly affecting the coastal zone must demonstrate the activity is, and proceed in a manner, consistent with approved State's Coastal Zone Management Program, to the maximum extent practicable.

The USACE prepared and received concurrence from the California Coastal Commission (CCC) on a consistency determination (CD-029-11, June 17, 2011) for the authorized project. Concurrence was received after completion of the 2011 Final EIS/EIR; therefore, the document is included as an appendix to this SEA (Appendix C). No changes to the original consistency determination are required as a result of the proposed modifications. Conditions associated with the Consistency Determination will be implemented as part of the Project. The Proposed Action is in compliance with this the Coastal Zone Management Act.

5.1.5 Clean Air Act of 1969, as amended (42 U.S.C. §7401 et. seq.)

Air quality regulations were first promulgated with the Clean Air Act (CAA). The CAA is intended to protect the Nation's air quality by regulating emissions of air pollutants. Section 118 of the CAA requires that all Federal agencies engaged in activities that may result in the discharge of air pollutants comply with state and local air pollution control requirements. Section 176 of the CAA prohibits federal agencies from engaging in any activity that does not conform to an approved State Implementation Plan.

The CAA established the National Ambient Air Quality Standards (NAAQS) and delegated enforcement of air pollution control to the states. In California, the Air Resources Board (ARB) has been designated as the state agency responsible for regulating air pollution sources at the state level. The ARB, in turn, has delegated the responsibility of regulating stationary emission sources to local air pollution control or management districts that, for the proposed project, is the South Coast Air Quality Management District (SCAQMD).

The CAA states that all applicable federal and state ambient air quality standards must be maintained during the operation of any emission source. The CAA also delegates to each state the authority to establish their own air quality rules and regulations. State adopted rules and regulations must be at least as stringent as the mandated federal requirements. In states where the NAAQS are exceeded, the CAA requires preparation of a State Implementation Plan (SIP) that identifies how the state will meet standards within timeframes mandated by the CAA.

The 1990 CAA established new nonattainment classifications, new emission control requirements, and new compliance dates for areas presently in nonattainment of the NAAQS, based on the design day value. The design day value is the fourth highest pollutant concentration recorded in a 3-year period. The requirements and compliance dates for reaching attainment are based on the nonattainment classification.

One of the requirements established by the 1990 CAA was an emission reduction amount, which is used to judge how progress toward attainment of the ozone standards is measured. The 1990 CAA requires areas in nonattainment of the NAAQS for ozone to reduce basin wide VOC emissions by 15 percent for the first 6 years and by an average 3 percent per year thereafter until attainment is reached. Control measures must be identified in the SIP, which facilitates reduction in emissions and show progress toward attainment of ozone standards.

The 1990 CAA states that a federal agency cannot support an activity in any way unless it determines the activity will conform to the most recent EPA-approved SIP. This means that Federally supported or funded activities will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any standard; or (3) delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area. In accordance with Section 176 of the 1990 CAA, the EPA promulgated the final conformity rule for general Federal actions in the November 30, 1993 and revised the regulations effective July 6, 2010.

As described in the 2011 EIS/EIR, project emissions are not expected to equal or exceed the general conformity applicability rates. The proposed modifications would not result in substantively different emissions as the Proposed Action retains the same dredge and disposal

footprints and would use the same equipment. Conformity standards also remain the same. Therefore, the Proposed Action remains in compliance with the Clean Air Act (2011 EIR/EIS, Section 9.0).

5.1.6 National Historic Preservation Act of 1966, as amended (54 U.S.C. §3000100 et seq.)

The purpose of the National Historic Preservation Act (NHPA) is to preserve and protect historic and prehistoric resources that may be damaged, destroyed, or made less available by a project. Under this Act, federal agencies are required to identify cultural or historical resources that may be affected by a project and to consult with the State Historic Preservation Officer (SHPO) when a federal action may affect cultural resources.

The USACE has determined that the San Clemente Shoreline Protection project would not have an adverse effect to National Register eligible or listed properties. The USACE received concurrence from the SHPO on May 4, 2023. The current project is in compliance with Section 106 of the National Historic Preservation Act pursuant to 36 C.F.R. Part 800.

If previously unknown cultural resources are identified during project implementation, all activity will cease until requirements of 36 C.F.R. Part 800.13, *Discovery of Properties During Implementation of an Undertaking*, are met.

5.1.7 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. §§ 661-666c) requires the USACE to consult with the (USFWS) whenever the waters of any stream or other body of water are proposed to be impounded, diverted, or otherwise modified. A Fish and Wildlife Coordination Act Report (CAR) was completed July 26, 2011, and is attached to the 2011 EIR/EIS as Appendix G. The Proposed Action does not alter the project in any way that would require reconsultation under FWCA.

5.1.8 Magnuson-Stevens Fishery Conservation and Management Act, as amended

The 2011 EIR/EIS (USACE, 2011) contains an Essential Fish Habitat (EFH)Assessment as required by the Magnuson-Stevens Act (MSA) 16 U.S.C. § 1801 et seq. While proposed Project modifications will occur within Essential Fish Habitat, the USACE has determined that the project modifications would not result in a substantial change to the impacts addressed in that document. In compliance with the coordination and supplemental consultation requirements of the MSA, the USACE continues coordination with NMFS, and has agreed to additional pre-project surveys to better delineate the boundaries of reef habitat as a result of that coordination.

5.1.9 Executive Order 12898. Environmental Justice

Executive Order 12898 (E.O.) focuses Federal attention on the environment and human health conditions of minority and low-income communities and calls on agencies to achieve environmental justice as part of its mission. The E.O. requires United States Environmental Protection Agency (USEPA) and all other Federal agencies (as well as state agencies receiving Federal funds) to develop strategies to address this issue as part of the NEPA process. The

agencies are required to identify and address, as appropriate, any disproportionately high and adverse human health or environmental impacts of their programs, policies and activities on minority and low-income populations. The EO makes clear that its provisions apply fully to programs involving Native Americans. The CEQ has oversight responsibility for the Federal government's compliance with the EO and NEPA. The CEQ, in consultation with the USEPA and other agencies, has developed guidance to assist Federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. According to the CEQ's Environmental Justice Guidance Under the National Environmental Policy Act, agencies should consider the composition of the affected area to determine whether minority populations or low-income populations are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental impacts (CEQ 1997).USEPA's EJScreen tool was used to obtain the study area demographics. Table 4 provides a summary of the study area demographics, complete EJScreen Reports can be found in Appendix F.

Table 1. Study Area Demographics

Demographic Affected	Affected Area	State	City of San Clemente
People of Color	22%	63%	27%
Low-income Population	7%	29%	14%

The affected area does not contain a high concentration of a minority or low-income population. The percentage in the affected area for either population does not exceed 50% and is well below state of California populations and is not meaningfully greater than the community of comparison. The Proposed Action, as modified, is in compliance. There would be no impacts resulting from the Proposed Action, as modified, that would result in disproportionately high and adverse impacts to minority and low-income communities.

5.2 Environmental Commitments

Environmental commitments are as described in the 2011 EIR/EIS with the addition of the measures defined in Section 4.2.3.1 above to ensure project activities minimize affects to GST.:

1. During dredging, transit to and from the Oceanside Borrow Site, and placement of dredged material at the Placement Area, a qualified biologist or qualified monitor with experience monitoring GSTs will be onboard the hopper dredge to monitor for the presence of GSTs. The GST monitor will identify and communicate if there is a need to cease or alter operations to avoid impacts to GSTs.

2. During dredging, the biological monitor will periodically check in the hopper for the presence of GSTs.

3. Adequate lighting will be provided during nighttime operations (i.e., dredging, dredge material transport and placement) to allow the monitor to observe the surrounding area effectively.
4. The biologist or monitor will clear the dredging area and confirm no GSTs are present 30 minutes prior to the startup of dredging operations.

5. If a GST is observed within the vicinity of the project site during project operations, all appropriate precautions shall be implemented to avoid or minimize unintended impacts. These precautions include, but are not limited to:
• Cessation of operations within 100 feet of an observed GST;
• Operations may not resume until the GST has departed the monitoring zone by its own accord or has not been observed for a 15-minute period of time; and
• Maneuver the hopper dredge to avoid any free-swimming GSTs observed during transit.

6. Biological monitors will maintain a written log of all GST observations during project operations. This observation log will be provided to the USACE and NMFS as an attachment to the post-construction report for the project. Each observation log will contain the following information:
• Observer name and title;
• Type of construction activity (maintenance dredging, etc.);
• Date and time animal first observed (for each observation);
• Date and time observation ended (for each observation). A GST observation will terminate if (1) an animal is observed exiting the monitoring zone or (2) after a 15-minute period of no observation (assumption is that animal has exited, but was not observed to do so);
• Location of monitor (latitude/longitude), direction of GST in relation to the monitor, and estimated distance (in meters) of GST to the monitor; and
• Nature and duration of equipment shutdown.

7. Any observations involving the potential "take" of GSTs will be reported to the USACE within 10 minutes of the incident and to the NMFS stranding coordinator immediately thereafter.
8. The Contractor will implement an Environmental Protection Plan that will include a GST Monitoring and Avoidance Plan and an employee training program on GST observation protocols, avoidance, and minimization measures. The program will be conducted by the Biological Monitor and a record kept of dates of training, names and positions of attending employees, and an outline of the training presentation.

Additional conditions of the California Coastal Commission's Consistency Determination include:

1. **Unanticipated delays resulting in disposal during grunion season.** If unanticipated delays result in a time extension of disposal into the grunion season (which is March through August), prior to any such disposal, the USACE will inform the CCC staff, and agree to implement and adhere to the same grunion monitoring measures, mitigation triggers, and mitigation requirements as those adopted by the Commission on June 15, 2011, in its review of the San Diego Association of Governments' (SANDAG's) coastal development permit 6-11-018, Condition No. 8 (Grunions). These measures are attached as Exhibit 13 in Appendix C.

2. **Final Monitoring Plans.** Prior to commencement of construction, the USACE will provide to the CCC Executive Director, for review and concurrence, a copy of the final Preconstruction Engineering and Design (PED) phase surveys and the

subsequent monitoring plans, including:

(a) the final biological (reef/surfgrass) Mitigation and Monitoring Plan (MMRP), including all surveys conducted in preparation of that plan;
(b) the surfing monitoring plan;
(c) the turbidity monitoring plan;
(d) the Stormwater Pollution Prevention Plan (SWPPP); and
(e) the Oil Spill Prevention and Response Plan (OSPRP).

3. **MMRP Details.** The final MMRP shall assure: (a) that biological monitoring of all offshore potential impact areas shall be for a minimum of 2 years pre-construction and 2 years post construction; (b) that monitoring and analytical methods are adequate to identify and accurately measure all short- and long-term impacts from the beach nourishment effort; (c) that appropriate mitigation sites are available to address potential impacts; and (d) that the success criteria and analytical methods used are adequate to demonstrate a difference between impact/mitigation site and control sites and shall include the following:

(i) clear and specific identification of the potential impact areas that will be monitored before and after the beach nourishment efforts, including the intertidal reef at Mariposa Point; and change criteria that will be used to establish thresholds of impacts for mitigation;
(ii) schedule and frequency of monitoring efforts and monitoring reports;
(iii) discussion of the monitoring and analytical methods that will be used to evaluation the sites based on the change criteria for both short- and long-term impacts;
(iv) delineation and characterization of the potential mitigation sites that will be used if short- or long-term impacts are identified that meet the threshold for mitigation
(v) clear and specific criteria for identifying impacts and for evaluating the success of any necessary mitigation. If statistical tests are proposed, then the plan must specify biologically meaningful effect sizes (i.e., a difference between the control and the impact site, or between the control and the mitigation site) and specify alpha and beta, with alpha equal to beta. The field sampling plan must include sufficient replication to provide a statistical test with at least 80% statistical power (beta=0.2) to detect an effect of the stated size with alpha = 0.2. The proposed replication must be based on preliminary sampling data and a statistical power analysis. Smaller alpha and beta may be used.
(vi) Identification of the control or reference sites that will be used and the results of a preliminary field sample at both control and potential impact sites demonstrating that the control sites are appropriate.

Construction shall not commence until the USACE has received written concurrence from
the CCC Executive Director that the MMRP satisfies all these criteria.

4. **Surfing Monitoring Details.** The USACE will revise its Surfing Monitoring Plan (Exhibit 15 in Appendix C) to include and implement the following features:

(a) adequate baseline data collection, including, if feasible, a full year of preconstruction monitoring to determine the baseline condition. If this is infeasible, then another local surf site should be monitored as a control (e.g. Lower Trestles, which is already monitored daily and shown on the website: www.surfline.com).
(b) identification of locations to be monitored, the length of the pre-project monitoring, and interest groups to be involved in establishing the monitoring effort to identify surfing or surf quality changes that might be attributable to the nourishment project, including identifying criteria for a determination of what constitutes a significant alteration or impact.
(c) supplementing the "wave observation" component of the surf monitoring with observations about the surfing activities, including a usage scale of surfers in the water, both morning and mid-day, and describing the average and maximum ride lengths.
(d) given that video recordings are included, if observer counts are too difficult for one observer, video may be used to augment observer counts.
(e) when collecting user data, the analysis should be disaggregated into weekday and weekend data.
(f) for mid-day observations on days when surfers are kept out of the water by lifeguards, these should be recorded as restricted use days (not zero use days).
(g) establishing mechanisms for informing the local community about the project, and encouraging public comments on surfing quality (or other recreational concerns), including but not limited to: (i) a web site, (ii) pre-construction notifications to the public; and (iii) signs.

Construction shall not commence until the USACE has received written concurrence from
the CCC Executive Director that the monitoring plan satisfies all of these criteria.

5. **Staging Plan Details.** The staging plans will assure: (a) that staging will not be permitted on public beaches, within public beach parking lots, or in any other location that would otherwise restrict public access to the beach; and (b) that the minimum number of public parking spaces (on and off-street) that are required for the staging of equipment, machinery and employee parking and that are otherwise necessary to implement the project will be used.

6. **Water Quality Plan Details.** The SWPPP will assure that: (a) the contractor will not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion; (b) no machinery will be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to implement the project; I construction equipment will not be washed on the beach; (d) where practicable, the contractor will use biodegradable (e.g., vegetable oil-based) lubricants and hydraulic fluids, and/or electric or natural gas-powered equipment; aI(e) immediately upon completion of construction and/or when the staging site is no longer needed, the site shall be returned to its preconstruction state.

7. **On-going Monitoring Reports.** The USACE will provide to the CCC Executive Director all monitoring reports, including biological monitoring (including biological

mitigation monitoring), surfing monitoring, turbidity, and spill prevention and response monitoring, long-term shoreline monitoring, and cultural resource surveys.

8. **In-Kind Mitigation**. For any mitigation shown necessary by the monitoring, the USACE will not proceed to implement out-of-kind mitigations (e.g., using kelp habitat to mitigate surfgrass impacts, or providing mid-water habitat to mitigate for shallow water habitat impacts) without showing to the satisfaction of the CCC Executive Director that in-kind mitigation is infeasible. In addition, if out-of-kind mitigation is agreed to and implemented, the mitigation ratio shall be 4:1 (i.e., 4 acres of mitigation for one acre of impact), and the area measured as the impact area shall be the entire seafloor area (and not, e.g., the acreage of scattered boulders alone).

9. **Renourishment.** The USACE will notify the Executive Director prior to any reinitation (after the first phase) of nourishment, and the USACEshall not implement any such renourishment until the CCC Executive Director has received all of the monitoring reports required by that time, reviewed them, and agreed that the biological impacts have been mitigated and affected habitat restored to pre-project conditions.

Section 401 Water Quality Certification permit conditions are as follows:

A. Authorization of Project Impacts to Receiving Waters

Impacts to Pacific Ocean shoreline must not exceed quantities shown in Table 2 of the San Diego Water Board (SDRWQCB) Order, attached as Appendix B.

B. Project Conformance with Water Quality Control Plans or Policies

1. The USACE must take all necessary measures to protect the beneficial uses of the receiving waters identified in Finding I.F of the Order potentially impacted by the Project in accordance with water quality standards in the Basin Plan (available at https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/).

2. Notwithstanding any specific conditions in the Order, the Project shall be constructed in a manner consistent with the Basin Plan and any other applicable water quality control plans or policies adopted or approved pursuant to the Porter-Cologne Water Quality Act(California Water Code §13000 et seq.) or section 303 of the Clean Water Act (33 U.S.C. § 1313).

3. If at any time an unauthorized discharge to waters of the State occurs or monitoring indicates that the Project is violating, or threatens to violate, water quality objectives, the associated Project activities shall cease immediately, and the SDRWQCB shall be notified in accordance with reporting requirements in Condition II.I of the Order. Associated Project activities may not resume without approval from the SDRWQCB.

C. Compensatory Mitigation

1. Compensatory Mitigation: Beach sand replenishment is considered self-mitigating and no compensatory mitigation is required for sand placement activities except as stated below for eelgrass.
Mitigation for Impacts to Eelgrass. If any impacts to eelgrass occur, as described in Condition D of the Order, compensatory mitigation that offsets losses to eelgrass must be implemented in accordance with an eelgrass mitigation plan approved by the SDRWQCB. The plan must meet the standards in the California Eelgrass Mitigation Policy (CEMP).

D. Monitoring and Reporting Requirements

1. Stormwater Management Plan. At least 30 days prior to the start of project construction, the USACE must submit a stormwater management plan for review by the SDRQQCB The stormwater management plan must include measures for avoiding and minimizing indirect impacts to aquatic resources from Project activities.

2. 2. Monitoring for Eelgrass Beds in Project Vicinity. If applicable, a pre-construction eelgrass survey must be completed in accordance with the requirements of the CEMP no more than 90 days before the start of in-water Project activities. If, during the pre-construction survey, eelgrass is identified within 30 feet of Project activities, the USACE must implement best management practices for the protection of eelgrass beds, as described in Attachment 3 of the Order; and complete a post-construction eelgrass survey, performed by a qualified biologist, within 30 days following the completion of in-water Project activities. The post-construction survey shall be used to quantify and determine mitigation for any losses to eelgrass in conformance with the CEMP. See National Oceanic and Atmospheric Administration, National Marine Fisheries Service, West Coast Region. California Eelgrass Mitigation Policy and Implementing Guidelines, October 2014. An electronic copy can be found at the following web page: https://media.fisheries.noaa.gov/dam-migration/cemp_oct_2014_final.pdf

3. Monitoring for Caulerpa in Project Vicinity. If applicable, the USACE must conduct a surveillance-level survey for Caulerpa taxifolia and Caulerpa prolifera, in accordance with the requirements in the National Marine Fisheries Service's Caulerpa Control Protocol, not more than 90 days before the start of in-water Project activities to determine presence/absence of this species within the immediate vicinity of the project. If any Caulerpa are identified during a survey, or at any other time before, during, or within120 days following completion of authorized activities, both National Marine Fisheries Service and California Department of Fish and Wildlife must be contacted within 24 hours of first noting the occurrence. If any Caulerpa are detected, all disturbing activity must cease until such time as the infestation has been isolated and treated, or the risk of spread from the disturbing activity is eliminated in accordance with the Caulerpa Control Protocol.

4. Receiving Water Visual Monitoring. The USACE must conduct visual monitoring of Project activities in the Pacific Ocean prior to, during, and after each period of project construction (e.g., pile extraction and driving) as described below. The receiving water visual monitoring documentation must be included in the Annual Progress Reports as described in Attachment 2 of the Order. The following parameters shall be visually monitored immediately outside of the construction area: floating particulates, suspended materials, surface visible

turbidity plume; and Grease, oil, sheen, odor, color, or any other significant discoloration of the water surface.

1 5. Field Documentation. All visual observations shall be recorded throughout Project construction activities. In addition to the records of monitoring listed below, field documentation of receiving waters visual monitoring shall include, at a minimum, observations of the parameters listed above, observations of sensitive biological resources, and weather conditions, such as wind speed/direction and cloud cover. If photo documentation is used in support of visual observations of water quality conditions, it should be conducted in accordance with the SDRWQCB posted guidelines.

1

6. Response Actions. If applicable, the condition of the silt curtain is observed to be damaged, has become dislocated, or has gaps where a visible turbidity plume is forming outside of the silt curtain at the Project Site, a response action shall be taken immediately to correct the situation. Response actions may include, but are not limited to, work stoppage until silt curtain repair is completed, implementation of operational modifications, work stoppage due to the presence of sensitive species until area is vacated, and/or implementation of additional BMPs (e.g., a second silt curtain). Response actions, if needed, shall be documented in the monitoring field log.

7. Annual Progress Reports. The USACE must submit Annual Progress Reports to the SDRWQCB prior to March 1 of each year following the issuance of the Order and continue to provide the reports until the SDRWQCB accepts the Project Completion Notification submitted by the USACE. Annual Progress Reports must be submitted even if Project activities are not conducted during the reporting period.

Annual reports must contain the status and anticipated schedule for both the Project and Compensatory Mitigation site(s). Additional requirements for the contents of Annual Progress Reports are detailed in Attachment 2 of the Order.

Annual Progress Reports must include, at a minimum, the following:

- The status and anticipated schedule for completion of Project construction activities, including the installation and operational status of construction best management practices for water quality protection;
- A description of any Project construction delays encountered or anticipated that may affect the schedule;
- Photo documentation of all areas of impacts before and after construction. Photo documentation must be conducted in accordance with SDRWQCB posted guidelines.

8. Geographic Information System Data. Within 30 days of the start of project construction, the USACE must submit Geographic Information System (GIS) shapefiles and metadata that show the Project site(s) and impact areas associated with the Project. As part of the final Annual Progress Report, the USACE must submit GIS shape files and metadata that show mitigation site(s), including extent and distribution of aquatic resources.

2011 EIR/EIS Environmental Commitments

Design Features	Purpose	Timing	Implementation Responsibility
Air quality			
Use of BACTs and Contingency Measures for construction activities	To reduce air emissions	During all construction activities	Construction contractor
Construction equipment will be properly maintained and tuned	To reduce air emissions	During all construction activities	Construction contractor
Maintain at least a 12 percent saturation level of the sand	To reduce air emissions	During beach fill activities	Construction contractor
Prohibit truck idling in excess of five minutes	To reduce air emissions	During all construction activities	Construction contractor
Where feasible, use aqueous or emulsified diesel fuel for construction equipment.	To reduce air emissions	During all construction activities	Construction contractor
Where feasible, use diesel oxidation catalytic converter	To reduce air emissions	During all construction activities	Construction contractor
Where feasible, require the use of newer, lower-emitting trucks to transport construction workers as well as equipment and material to and from construction sites	To reduce air emissions	During all construction activities	Construction contractor
Water Quality, Sediments, Oceanography			
Construct "L"-shaped berms	Anchor sand placement operations and reduce nearshore turbidity	During beach fill	Construction contractor

Design Features	Purpose	Timing	Implementation Responsibility
Monitor turbidity	To reduce impacts related to turbidity	During dredging and beach fill activities	Construction contractor
Prepare SWPPP and OSPRP	Ensure minimal contamination from fuel leaks, if any	During all construction activities	Construction contractor
Biological Resources			

An underwater survey for kelp and surfgrass shall be conducted by marine biologists prior to the initiation of beach fill activities. Based on the survey, a mooring location and a pipeline route shall be selected that minimizes contact with surfgrass and kelp habitat. If kelp and surfgrass cannot be avoided completely, immediately following beach fill activities, another survey of the mooring and pipeline areas shall be conducted to determine whether kelp and surfgrass were damaged. If substantial damage to surfgrass or kelp occurs, an additional survey shall be conducted six months after the beach fill to determine if kelp and surfgrass have recovered. If substantial damage to kelp and eelgrass is still observed, restoration of habitat shall be implemented in consultation with the resource agencies.	Mooring Location and pipe placement to ensure avoidance and minimization to marine resources	During dredging and beach fill activities	USACE qualified marine ecologist or his/her designated marine ecologist.

Cultural Resources

Prior to construction, offshore borrow areas 1 and 2 will be subjected to an underwater remote sensing survey in order to determine if submerged cultural resources are present within these areas.	Avoid potentially undisturbed, submerged cultural resources.	Prior to dredging activities	USACE qualified archaeologist or his/her designated archaeologist
Noise			
On-shore construction activities must be limited to less than 9 hours per day.	Minimize noise emissions	During beach nourishment/notch fill	Construction contractor
Recreation			
The contract specifications shall require the contractor to fence/secure off areas of construction from public access, including construction staging areas and active construction areas, including the beach and nearshore zone.	Avoid safety hazards to recreation-goers	During beach nourishment	Construction contractor

Design Features	Purpose	Timing	Implementation Responsibility
Public safety			

The dredge would be equipped with markings and lightings in accordance with the U.S. Coast Guard regulations. The location and schedule of the dredge would be published in the U.S. Coast Guard Local Notice to Mariners. The dredge would travel at very low speeds (approximately 1.5 knots) during dredging operations. The travel speed during transport would be approximately 5 knots. During dredging and nourishment activities, proper advanced notice to mariners would be obtained, and navigational traffic would not be allowed within the offshore borrow site area or mooring/discharge area offshore of Oceanside.	Warn boaters/ fishermen of dredging activities to ensure avoidance	Before and during dredging activities and beach nourishment	USACE resident engineer
Socioeconomics			
The local commercial fishermen's association shall be provided with written notification of the intended start date of on shore construction, offshore construction, maps of project-related vessel transportation routes, and its duration. Noticing shall include a point of contact throughout the entire construction phase to respond to concerns regarding interference and/or other issues associated with local commercial fishing operations.	Avoid gear conflicts and provide for compensation if loss occurs	Thirty days prior to the start of construction	Coast Guard (via construction contractor) and USACE
Monitoring Commitments			
Monitor turbidity levels	To avoid turbidity impacts to fish and aquatic species	During dredging operations and beach fill activities	Construction Contractor

Design Features	Purpose	Timing	Implementation Responsibility
Any earthmoving associated with this Project that will involve previously undisturbed soil will be monitored by a qualified archeologist who meets the Secretary of Interior's Standards for an Archeologist (see 36 CFR Part 61). If a previously unidentified cultural resource (i.e., property) that may be eligible for the NRHP is discovered, all earthmoving activities in the vicinity of the discovery shall be diverted until the USACE complies with 36 CFR § 800.13(a)(2).	Avoid any potentially undisturbed cultural resources.	During beach fill activities	USACE qualified archaeologist or his/her designated archaeologist

6.0 CUMULATIVE IMPACT ANALYSIS

NEPA requires that cumulative impacts of the proposed action be analyzed and disclosed. Cumulative impacts are impacts on the environment that would result from the incremental effect of the proposed action when combined with other past, present, and reasonably foreseeable planned and proposed actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. The geographic scope of this analysis is the proposed borrow area and the beach placement area.

Cumulative impacts remain unchanged from the 2011 EIR/EIS . The 2011 EIR/EIS discussed maintenance dredging of Dana Point Harbor, San Onofre Nuclear Generating Station Kelp Reef Project and Railroad Operations. The analysis of these projects' cumulative effects concluded there it was unlikely to adversely affect Geology, Water Quality and Marine Resources in the Project's geographic scope.

7.0 REFERENCES

Bredvik, Jessica J.; Graham, Suzanne E.; Saunders, Brendan P. 2019. Green Sea Turtle Satellite Tagging in Support of Naval Weapons Station Ammunition Pier and Turning Basin. Prepared for Naval Facilities Engineering Command (NAVFAC) Southwest. Submitted to National Marine Fisheries Service, California, September 2019.

Hanna, M.E., J. Bredvik, S.E. Graham, B. Saunders, J.A. Seminoff, T. Eguchi and C. Turner Tomaszewicz. 2020. Movements and habitat use of green sea turtles at the Seal Beach National Wildlife Refuge, CA. Prepared for Naval Weapons Station Seal Beach, California, September 2020.

8.0 ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
ARB	Air Resources Board
CAA	Clean Air Act
CCC	California Coastal Commission
CEQ	Council on Environmental
CoE	Chief of Engineers
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
cy	cubic yard
dB	decibel
dBA	decibel (A weighted scale)
DO	dissolved oxygen
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
Final EA	Final Environmental Assessment
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
USACE	U.S. Army Corps of Engineers, Los Angeles District
MLLW	mean lower low water
mcy	million cubic yards
NEPA	National Environmental Policy Agency
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
SBNWS	Seal Beach Naval Weapons Station
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SDRWQCB	San Diego Regional Water Quality Control Board (a.k.a. San Diego Water Board)
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
USFWS	U.S. Fish and Wildlife Service

9.0 PREPARERS/REVIEWERS

9.1 Preparers

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Michael O'Hara	USACE, Archeologist, Environmental Policy Group

9.2 Reviewers

Tiffany Bostwick	USACE, Chief Environmental Resources Branch
Hayley Lovan	USACE, Chief, Ecosystem Planning Section

Figures

Figure 3. Project location Map illustrating sediment placement location in San Clemente and borrow site offshore of Oceanside.

Figure 4. Project Beach Nourishment Area. Red polygon illustrates sediment placement footprint.

APPENDIX A

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Cassidy Tuefel
California Coastal Commission
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APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX E

APPENDIX F

APPENDIX G

San Diego Regional Water Quality Control Board

Order No. R9-2022-0171
for
Clean Water Act Section 401 Water Quality Certification
and Waste Discharge Requirements Order No. 2003-0017-DWQ

Effective Date	November 3, 2022
Project	San Clemente Shoreline Coastal Storm Damage Reduction Project
Program	401 Certification
Project Type	Beach Modification
Discharger	U.S. Army Corps of Engineers, Los Angeles District 915 Wilshire Boulevard Los Angeles, CA 90017
Regulatory Measure ID	449414
Place ID	883578
Party ID	564167
Person ID	631608
WDID	9000003833
San Diego Water Board Contact	Darren Bradford Environmental Scientist (619) 521-3356 darren.bradford@waterboards.ca.gov

Table of Contents

I. Findings

A. Order

This order for Clean Water Act section 401 water quality certification and Waste Discharge Requirements (Order) is issued at the request of United States Army Corps of Engineers, Los Angeles District, hereinafter Discharger, for the San Clemente Shoreline Coastal Storm Damage Reduction Project (Project). The Order provides water quality certification for the Project as described in the application and supplemental material submitted by the Discharger. The application was received on September 22, 2022, and, following receipt of additional information necessary to supplement the initial application, was deemed complete on October 13, 2022.

B. Public Notice

On October 5, 2022, the San Diego Water Board provided public notice of the Project application pursuant to California Code of Regulations, title 23, section 3858 by posting information describing the Project on the San Diego Water Board's web site and providing a period of twenty-one days for public review and comment. No comments were received.

C. Project Location

The Project is located within the City of San Clemente, Orange County, California. Beach quality sand sources will come from the Pacific Ocean offshore from the City of Oceanside. Beach placement site adjacent to the San Clemente Pier is located on San Clemente Beach from Linda Lane to T-Street. The Project's center readings are latitude 33.418717, longitude -117.6206. A map showing the Project location is found in Attachment 6 of the Order.

D. Project Description

The purpose of the Project is to reduce potential storm damages along the coast of San Clemente through nourishment of the beach at the City of San Clemente Pier.

Developing and maintaining the beach is needed to prevent the severe beach erosion that results from winter storms and to prevent damage to adjacent beachfront structures, including the heavily used rail line that runs along the beach through the city. In addition, the loss of sand at the beach would have a negative impact on recreation, which supports the local economy, and would reduce the ecological functioning of the sand beach/littoral zone. The objective of the San Clemente Shoreline Protection Project is:

1. To reduce the potential for storm damages to facilities located along the coast of the City of San Clemente, including recreation beach facilities and the Los Angeles to San Diego (LOSSAN) Rail Corridor, and

2. To restore and maintain recreation use along the Pacific Coast of the City of San Clemente.

The Discharger proposes to dredge material from offshore Oceanside. The sand will be transported at sea, on a hopper dredge, down to San Clemente and pumped onto the beach. The Project will have a 50-foot resultant beach width. Beach fill will be 3,412 feet long (4 acres) with an approximate 17-foot crest elevation. The dredge volume is estimated to be approximately 251,130 cubic yards.

Project activities will not result in permanent impacts to aquatic resources under the jurisdiction of the San Diego Water Board.

E. California Environmental Quality Act Compliance

1. A Joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) has been prepared for this Project. The United States Army Corps of Engineers is the Federal lead agency responsible for compliance with the National Environmental Policy Act of 1964 (42 U.S.C. § 4331). The City of San Clemente is the Lead Agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, §§ 21000 et seq.). EIS/EIR

2. The San Diego Water Board is a Responsible Agency under CEQA. The San Diego Water Board has considered the Lead Agency's EIS/EIR and independently finds that the Project as proposed with mitigation measures will not have a significant effect on resources within the San Diego Water Board's purview.

3. As a Responsible Agency under CEQA, the San Diego Water Board will file a Notice of Determination in accordance with CEQA Guidelines section 15096(i).

F. Receiving Waters Impacted by Project

Receiving waters and groundwater potentially impacted by the Project are protected in accordance with the Water Quality Control Plan for the San Diego Basin (9) (Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives. The San Diego Water Board adopted the Basin Plan on September 8, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Resources Control Board (State Water Board). The Basin Plan is available at: https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/.

The Order authorizes unavoidable permanent impacts to the Pacific Ocean, within the City of San Clemente. The Pacific Ocean Shoreline have the designated beneficial uses listed below in Table 1. Additionally, The Pacific Ocean at the San Clemente Beach Pier is identified as impaired, under the Clean Water Act Section 303(d) List, where water quality standards are not attained for pollutants listed below in Table 1.

Table 1: Beneficial Uses and Impairments of Receiving Waters

Receiving Waters	Beneficial Uses	303(d) Impairing Pollutants
Pacific Ocean Shoreline	Existing beneficial uses: Industrial Service Supply (IND), Navigation (NAV), Contact Water Recreation (REC-1), Non-Contact Water Recreation (REC-2), Commercial and Sport Fishing (Comm), Preservation of Biological Habitats of Special Significance (BIOL), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species (RARE), Marine Habitat (MAR), Aquaculture (AQUA), Migration of Aquatic Organism (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), and Shellfish Harvesting (SHELL).	Bacteria

G. **Description of Impacts to Receiving Waters of the United States and/or State**

Project activities will not contribute to additional loading of pollutants identified in Table 1 above because the Project activity is sand replenishment. The expected water quality impacts are limited to localized turbidity within and outside the active surf zone. The Discharger will implement a construction work plan that includes best management practices for avoiding and minimizing impacts to water quality such as erosion control, sediment control, education on work areas, sand placement methods, and good site management "housekeeping." The Discharger will also be responsible for monitoring and removing any trash or debris found in the sand source and at the sand placement sites

Total direct impacts to the Pacific Ocean attributable to the Project are summarized in Table 2 below. Maps of the impact location(s) are found in Attachment 6 of the Order.

Table 2: Project Fill/Excavation Quantity

	Acres	Cubic Yards	Linear Feet
Temporary Impact[1]	NA	NA	NA
Permanent Impact[2]	4	Approximately 251,000 cy of beach compatible sand for the initial fill with proposed renourishment events every six years on average.	3,412

Project activities will not result in a physical loss of area because the Project will use sand for beach sand replacement on the beach adjacent to San Clemente Beach Municipal Pier. Impacts to water quality are expected to dissipate after a full tidal cycle has moved the placed sand into the surf zone. Project activities will not create any indirect impacts to waters of the United States and/or State of California (State).

H. **Avoidance and Minimization**

The Discharger has demonstrated that the Project was designed to first avoid, then minimize, to the maximum extent practicable, impacts to waters of the United States and/or State. Avoidance and minimization measures are also required by the Project Environmental Impact Report as described in Finding I.E of the Order. The Discharger reports that the Project purpose cannot be practically accomplished in a manner which would avoid or result in less adverse impact to aquatic resources considering all potential practicable alternatives.

The Project qualifies as a Tier 2 project under the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. The Discharger completed an Alternatives Analysis, and the Project is the least environmentally damaging practicable alternative.

[1] An impact is considered temporary if it is restored to pre-project conditions through natural ecological processes or active restoration. Temporary impacts are therefore not considered a physical loss of area or degradation of ecological condition requiring compensatory mitigation.
[2] Permanent impacts permanently change an aquatic resource to a non-aquatic resource or change the bottom elevation of an aquatic resource. Permanent impacts can cause physical loss of area and/or ecological degradation.

Project avoidance and minimization measures implemented or planned by the Discharger include the use of L-shaped berms to reduce turbidity impacts at the receiving beach. The berm reduces ocean water turbidity by allowing all the sand to settle out inside the bermed area while the seawater is channeled along the berm until it reaches the open end where it drains into the ocean.

I. Compensatory Mitigation

Compensatory mitigation is not required for the Project because the Project will not result in adverse impacts to water quality and will instead result in a net gain in aquatic resource function by restoring the sand portion of the shoreline. The Project impacts to aquatic resources will be offset by the benefits of replenishing sand along San Clemente beaches providing shoreline protection from storm damage, sea level rise resilience, ecosystem protection, and maintain recreational uses.

J. No Net Loss of Aquatic Resources

The Discharger has demonstrated that the Project will not contribute to a net loss of the overall abundance, diversity, and condition of aquatic resources in the Pacific Ocean Shoreline. Based on these considerations, the Discharger's compliance with the terms and conditions of the Order will ensure that the Project meets applicable water quality standards for all waters of the United States and/or State in the City of San Clemente.

II. Conditions

The San Diego Water Board has independently reviewed the record of the Project to analyze the extent and nature of proposed Project impacts to the water quality and beneficial uses of waters of the United States and/or State and any required compensatory mitigation to offset impacts attributed to the Project. **The Discharger is authorized to proceed with the Project in accordance with the following conditions:**

A. Authorization of Project Impacts to Receiving Waters

Impacts to Pacific Ocean shoreline must not exceed quantities shown in Table 2 of the Order.

B. Project Conformance with Water Quality Control Plans or Policies

1. The Discharger must take all necessary measures to protect the beneficial uses of the receiving waters identified in Finding I.F of the Order potentially impacted by the Project in accordance with water quality standards in the Basin Plan.

2. Notwithstanding any specific conditions in the Order, the Project shall be constructed in a manner consistent with the Basin Plan and any other applicable water quality control plans or policies adopted or approved pursuant to the Porter-Cologne Water Quality Act (commencing with California Water Code Section 13000) or section 303 of the Clean Water Act (33 U.S.C section 1313).

3. If at any time an unauthorized discharge to waters of the State occurs or monitoring indicates that the Project is violating, or threatens to violate, water quality objectives, the associated Project activities shall cease immediately, and the San Diego Water Board shall be notified in accordance with reporting requirements in Condition II.I of the Order. Associated Project activities may not resume without approval from the San Diego Water Board.

C. **Compensatory Mitigation**

1. **Compensatory Mitigation**: Beach sand replenishment is considered self-mitigating and no compensatory mitigation is required for sand placement activities except as stated below for eelgrass.

2. **Mitigation for Impacts to Eelgrass**. If any impacts to eelgrass occur, as described below in Condition D of the Order, compensatory mitigation that offsets losses to eelgrass must be implemented in accordance with an eelgrass mitigation plan approved by the San Diego Water Board. The plan must meet the standards in the California Eelgrass Mitigation Policy (CEMP).[3]

D. **Monitoring and Reporting Requirements**

1. **Stormwater Management Plan. At least 30 days prior to the start of project construction**, the Discharger must submit a stormwater management plan for review by the San Diego Water Board. The stormwater management plan must include measures for avoiding and minimizing indirect impacts to aquatic resources from Project activities.

2. **Monitoring for Eelgrass Beds in Project Vicinity**. If applicable, a pre-construction eelgrass survey must be completed in accordance with the requirements of the CEMP **no more than 90 days before the start of in-water Project activities**. If, during the pre-construction survey, eelgrass is identified within 30 feet of Project activities, the Discharger must:

   a) Implement best management practices for the protection of eelgrass beds, as described in Attachment 3 of the Order; and

   b) Complete a post-construction eelgrass survey, performed by a qualified biologist, **within 30 days following the completion of in-water Project activities**. The post-construction survey shall be used to quantify and determine mitigation for any losses to eelgrass in conformance with the CEMP.

[3] National Oceanic and Atmospheric Administration, National Marine Fisheries Service, West Coast Region. California Eelgrass Mitigation Policy and Implementing Guidelines, October 2014. An electronic copy can be found at the following web page: https://media.fisheries.noaa.gov/dam-migration/cemp_oct_2014_final.pdf

3. **Monitoring for *Caulerpa* in Project Vicinity**. If applicable, the Discharger must conduct a surveillance-level survey for *Caulerpa taxifolia* and *Caulerpa prolifera*, in accordance with the requirements in the National Marine Fisheries Service's Caulerpa Control Protocol,[4] **not more than 90 days before the start of in-water Project activities** to determine presence/absence of this species within the immediate vicinity of the project. If any *Caulerpa* spp. are identified during a survey, or at any other time before, during, or within 120 days following completion of authorized activities, both National Marine Fisheries Service and California Department of Fish and Wildlife must be contacted within 24 hours of first noting the occurrence. If any *Caulerpa* spp. are detected, all disturbing activity must cease until such time as the infestation has been isolated and treated, or the risk of spread from the disturbing activity is eliminated in accordance with the Caulerpa Control Protocol.

4. **Receiving Water Visual Monitoring.** The Applicant must conduct visual monitoring of Project activities in the Pacific Ocean prior to, during, and after each period of project construction (e.g., pile extraction and driving) as described below. The receiving water visual monitoring documentation must be included in the Annual Progress Reports as described in Attachment 2 of the Order.

    a) **Parameters.** The following parameters shall be visually monitored immediately outside of the construction area:

        i. Floating particulates, suspended materials, surface visible turbidity plume; and

        ii. Grease, oil, sheen, odor, color, or any other significant discoloration of the water surface.

    b) **Field Documentation.** All visual observations shall be recorded throughout Project construction activities. In addition to the records of monitoring listed below in Condition II.D.6, field documentation of receiving waters visual monitoring shall include, at a minimum, observations of the parameters listed above, observations of sensitive biological resources, and weather conditions, such as wind speed/direction and cloud cover. If photo documentation is used in support of visual observations of water quality conditions, it should be conducted in accordance with guidelines posted at http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation should include Global Positioning System (GPS) coordinates for each of the photo points referenced; and

[4] NMFS Caulerpa Control Protocol, version 4, 2008, is available at https://www.fisheries.noaa.gov/west-coast/habitatconservation/aquatic-invasive-species-west-coast-caulerpa-taxifolia

c) **Response Actions**. If applicable, the condition of the silt curtain is observed to be damaged, has become dislocated, or has gaps where a visible turbidity plume is forming outside of the silt curtain at the Project Site, a response action shall be taken immediately to correct the situation. Response actions may include, but are not limited to, work stoppage until silt curtain repair is completed, implementation of operational modifications, work stoppage due to the presence of sensitive species until area is vacated, and/or implementation of additional BMPs (e.g., a second silt curtain). Response actions, if needed, shall be documented in the monitoring field log.

5. **Annual Progress Reports.** The Discharger must submit Annual Progress Reports to the San Diego Water Board prior to **March 1** of each year following the issuance of the Order and continue to provide the reports until the San Diego Water Board accepts the Project Completion Notification submitted by the Discharger. Annual Progress Reports must be submitted even if Project activities are not conducted during the reporting period.

   Annual reports must contain the status and anticipated schedule for both the Project and Compensatory Mitigation site(s). Additional requirements for the contents of Annual Progress Reports are detailed in Attachment 2 of the Order.

   Annual Progress Reports must include, at a minimum, the following:

   a) The status and anticipated schedule for completion of Project construction activities, including the installation and operational status of construction best management practices for water quality protection;

   b) A description of any Project construction delays encountered or anticipated that may affect the schedule;

   c) Photo documentation of all areas of impacts before and after construction. Photo documentation must be conducted in accordance with guidelines posted at https://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include GPS coordinates for each photo location.

6. **Geographic Information System Data. Within 30 days of the start of project construction,** the Discharger must submit Geographic Information System (GIS) shape files and metadata that show the Project site(s) and impact areas associated with the Project. **As part of the final Annual Progress Report,** the Discharger must submit GIS shape files and metadata that show mitigation site(s), including extent and distribution of aquatic resources. For instructions on submitting GIS files, please contact the San Diego Water Board.

E. **Project Status Notifications**

1. **Discharge Commencement Notification.** The Discharger must notify the San Diego Water Board in writing **at least 5 days prior to** the start of each Project construction.

2. **Discharge Completion Notification.** The Discharger must notify the San Diego Water Board in writing **within 30 days of completion of each active Project construction activities**, including construction of any required restoration or compensatory mitigation. Submittal of the Notification does not obviate the Discharger's duty to comply with the requirements of the Order, pay any outstanding invoices of permit fees, or submit any outstanding required reports. The Notification shall include:

   a) Dates of construction initiation and completion;

   b) Volume of material discharged onto the beach for each event;

   c) BMP status, including photo documentation of implemented post-construction BMPs and all areas of permanent and temporary impacts, prior to and after project construction. Photo documentation must be conducted in accordance with guidelines posted at https://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include Global Positioning System (GPS) coordinates for each of the photo locations referenced;

   d) A statement that the authorized activity and implementation of any required compensatory mitigation were conducted and completed in accordance with the Order, including any activity-specific or compensatory mitigation conditions; and

   e) The signature of the Discharger certifying the completion of the activity and mitigation in accordance with condition II.F of the Order.

3. **Project Completion Notification.** The Discharger shall submit a Project Completion Letter when construction activities, post-construction monitoring, and mitigation monitoring (if required) are complete[5] for each event. This written notification shall be submitted to the San Diego Water Board **within 30 days following completion of each Project activity**.

[5] Completion of post-construction and mitigation monitoring shall be contingent upon achievement of performance standards as determined by the San Diego Water Board.

F. **Construction and Post-Construction Best Management Practices**

The Discharger shall implement best management practices (BMPs), as described in this section and Attachment 3 of the Order, before and after construction to prevent discharges from the Project causing or contributing to on-site or off-site erosion or damage to properties or waters of the United States and/or State.

a) Placement of Sediment,

i. Construction Monitoring. During sand excavation activities, Project personnel must be onsite to visually inspect the material being loaded onto the hopper dredge for beach sand nourishment. If any trash and/or construction debris is observed in the excavated material, additional BMPs must be implemented to ensure no trash and/or debris is discharged onto the receiver beach and the Pacific Ocean

ii. Receiver Site Monitoring. During sand placement activities, Project personnel must always be in place on the receiving beach to ensure the material placed on the beach is free of debris and trash. If trash and/or construction debris are observed during the beach sand placement, all sand placement activities must stop and all debris removed from the beach before continuing with the Project. Project personnel must keep a daily log during sand placement activities noting, at a minimum; the date/time of observations, number of truck loads, presence or absence of construction debris or trash, and corrective actions implemented.

iii. Sand Placement Prohibition. Construction equipment (bulldozers, trucks, backhoes, etc) may not come into direct contact with the ocean. Equipment may be driven onto the wetted portion of the beach, however, the equipment may not come into contact with the surf zone wash.

iv. Post Construction Monitoring. Immediately following the completion of the beach sand placement activities, the receiving beach shoreline must be monitored for trash and debris by onsite personnel for a minimum of two days to ensure no trash or debris are left from the sand placement activities. Any trash or debris found within the sand placement boundaries will be immediately picked up and disposed following local, state and federal regulations. A minimum of two monitoring events per day must take place with one event occurring during a high tide and one during low tide.

v. Construction and Post-Construction Monitoring. The Discharger must have a qualified biologist monitoring the construction site and active receiving beach at all times during beach sand placement activities.

G. **Standard Provisions**

The Discharger shall implement standard provisions described in Attachment 4.

H. **Document Submittal**

1. **Document Certification Requirements**. All applications, reports, or information submitted to the San Diego Water Board must be certified as follows:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

2. **Document Signatory Requirements**. All applications, reports, or information submitted to the San Diego Water Board must be signed by the Discharger (or duly authorized representative, as described below) as follows:

   a) For a corporation, by a responsible corporate officer of at least the level of vice president.

   b) For a partnership or sole proprietorship, by a general partner or proprietor, respectively.

   c) For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.

   d) A duly authorized representative may sign applications, reports, or information if:

      i. The authorization is made in writing by a person described above.

      ii. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.

      iii. The written authorization is submitted to the San Diego Water Board Executive Officer.

   If such authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the Project, a new authorization satisfying the above requirements must be submitted to the San Diego Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative.

3. **Electronic Document Submittal**. The Discharger must submit all reports and information required under the Order via e-mail to SanDiego@waterboards.ca.gov with the following information in the subject line: **"401 Certification No. R9-2022-0171 PIN 883578:dbradford**." Electronic documents must be submitted as text searchable PDF files. Documents over 50 megabytes will not be accepted via e-mail and must be placed on a flash drive and delivered to:

   San Diego Regional Water Quality Control Board
   Attn: 401 Certification No. R9-2022-0171, PIN 883578:dbradford
   2375 Northside Drive, Suite 100
   San Diego, California 92108

III. Water Quality Certification

I hereby certify that the proposed discharge from the **San Clemente Shoreline Coastal Storm Damage Reduction Project** (Order No. R9-2022-0171) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act.

This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "*Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)*," which requires compliance with all conditions of the Order. Please note that enrollment under Order No. 2003-0017-DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the San Diego Water Board may issue individual waste discharge requirements at that time.

Except insofar as may be modified by any preceding conditions, all Order actions are contingent on (a) the discharge being limited to, and all proposed mitigation being completed in strict compliance with, the Discharger's Project description and/or the description in the Order, and (b) compliance with all applicable requirements of the Basin Plan.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Order No. R9-2022-0171 issued on November 3, 2022.

DAVID W. GIBSON
Executive Officer
San Diego Water Board

ATTACHMENT 1 – Definitions

Activity - when used in reference to a permit means any action, undertaking, or project including, but not limited to, construction, operation, maintenance, repair, modification, and restoration which may result in any discharge to waters of the State.

Application - means a written request, including a report of waste discharge or request for water quality certification, for authorization of any activity that may result in the discharge of dredged or fill material and is subject to the Order.

Buffer - means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

California Rapid Assessment Method (CRAM) - is a wetland assessment method intended to provide a rapid, scientifically-defensible and repeatable assessment methodology to monitor status and trends in the conditions of wetlands for applications throughout the state. It can also be used to assess the performance of compensatory mitigation projects and restoration projects. CRAM provides an assessment of overall ecological condition in terms of four attributes: landscape context and buffer, hydrology, physical structure and biotic structure. CRAM also includes an assessment of key stressors that may be affecting wetland condition and a "field to PC" data management tool (eCRAM) to ensure consistency and quality of data produced with the method**.**

Compensatory mitigation – means the restoration (re-establishment or rehabilitation), establishment, enhancement, and/or preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Compensatory mitigation project - means compensatory mitigation implemented by the Discharger as a requirement of the Order (i.e., permittee-responsible mitigation), or by a mitigation bank or an in-lieu fee program.

Condition - means the relative ability of an aquatic resource to support and maintain a community of organisms having a species composition, diversity, and functional organization comparable to reference aquatic resources in the region.

Discharge of dredged or fill material – has the same meanings as they are used in the federal Clean Water Act and 40 CFR section 232.2, but (1) shall include discharges to waters of the State that are not waters of the U.S. and (2) any demonstrations described in 40 CFR section 232.2(3)(i) shall be made to the permitting authority instead of the Corps or U.S. EPA. Placement of dredged or fill material in a manner that could not affect the quality of waters of the State is not considered a discharge of dredged or fill material.

Dredged material – means material that is excavated or dredged from waters of the United States and/or State.

Ecological success performance standards – means observable or measurable physical (including hydrological), chemical, and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

Enhancement – means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment – means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist. Creation results in a gain in aquatic resource area.

Fill material – means any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a water body.

Functions - means the physical, chemical, and biological processes that occur in ecosystems.

Isolated wetland – means a wetland with no surface water connection to other aquatic resources.

LEDPA – means the least environmentally damaging practicable alternative. The determination of practicable alternatives shall be consistent with the State Supplemental Dredge or Fill Guidelines, section 230.10(a).

Mitigation bank – means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing mitigation for impacts authorized by the Order.

Order – means water quality certification, waste discharge requirements, or waivers of waste discharge requirements.

Project – means the whole of an action that includes a discharge of dredged or fill material to waters of the U.S. and/or State.

Preservation - means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/ historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area.

Restoration - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Start of project construction - For the purpose of the Order, "start of Project construction" means to engage in a program of on-site construction, including site clearing, grading, dredging, landfilling, changing equipment, substituting equipment, or even moving the location of equipment specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source within waters of the United States and/or State.

Temporal loss - means the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss. **Uplands** - means non-wetland areas that lack any field-based indicators of wetlands or other aquatic conditions. Uplands are generally well-drained and occur above (i.e., up-slope) from aquatic areas. In a watershed, uplands comprise the landscape in which aquatic areas form. They are the primary sources of sediment, surface runoff, and associated chemicals that are deposited in aquatic areas or transported through them.

Water quality objectives and other appropriate requirements of state law – means the water quality objectives and beneficial uses as specified in the appropriate water quality control plan(s); the applicable provisions of sections 301, 302, 303, 306, and 307 of the Clean Water Act; and any other appropriate requirement of state law.

Waters of the State – means any surface water or groundwater, including saline waters, within the boundaries of the state.

ATTACHMENT 2 – Annual Progress Report Requirements

The reporting period for each Annual Progress Report shall be January 1st through December 31st of each year. Annual Progress Reports must be submitted even if Project construction has not begun or if Project construction is complete and compensatory mitigation site construction or monitoring is ongoing. Annual Progress Reports must include, at a minimum, the following:

1. **Project Status and Compliance.**

   a. The status and anticipated schedule for completion of Project construction activities, including the installation and operational status of construction best management practices for water quality protection;

   b. A description of any Project construction delays encountered or anticipated that may affect the schedule;

   c. Receiving water visual monitoring documentation;

   d. All records, field logs, and/or field notes created by the on-site qualified biologist or other environmental professional; and

   e. A description of: each incident of noncompliance during the annual monitoring period and its cause; the period of the noncompliance including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance;

   f. Photo documentation of all areas of impact before, during, and after construction. Photo documentation must be conducted in accordance with guidelines posted at https://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include GPS coordinates for each photo location; and

   g. In addition, the final annual report must include as-built drawings of the Project Site(s), no bigger than 11”X17”.

2. **Records of Monitoring**.

   a. The date, exact place, and time of monitoring;

   b. The names, qualifications, and affiliations of individuals who performed the monitoring, sampling, analyses, and otherwise contributed to the report;

   c. The analytical techniques or methods used;

3. **Results of Construction Monitoring.**

   a. Pre-construction (if applicable) survey reports for *Caulerpa taxifolia* and *C. prolifera*;

b. Eelgrass survey reports (if applicable). Pre-construction eelgrass survey report must be included in the first annual progress report, and, if eelgrass is identified within 30 feet of Project activities, post-construction eelgrass survey report must be included in the final progress report; and

c. Receiving water visual monitoring. The Discharger shall submit monitoring reports that contain the results of visual monitoring activities for each week of monitoring. The receiving water visual monitoring reports must include, at a minimum:

i. The names, qualifications, and affiliations of the persons contributing to the report;

ii. Copies of records, field notes/logs, and/or photo documentation of the visual observations required under Condition II.D.4 of the Order;

iii. A summary, evaluation, and interpretation of the visual observations recorded and any response actions taken as required under Condition II.D.4 of the Order, including interpretations and conclusions as to whether applicable receiving water limitations were attained at the site.

4. **Compensatory Mitigation Status and Compliance.** Mitigation monitoring, if applicable, information must be submitted as part of the Annual Progress Report for a period of **at least five years**. The San Diego Water Board may reduce or waive compensatory mitigation monitoring requirements upon a determination that performance standards have been achieved. Conversely, the San Diego Water Board may extend the monitoring period beyond five years upon a determination that the performance standards have not been met or the compensatory mitigation project is not on track to meet them.

a. The status and anticipated schedule for completion of mitigation activities;

b. A tabulation and interpretation of all data specified in the Mitigation Plan, including:

i. Qualitative and quantitative comparisons of current conditions with pre-construction conditions and previous mitigation monitoring results;

ii. Conclusions as to how the Mitigation Site(s) is/are progressing towards meeting performance standards contained in the Mitigation Plan; and

iii. Photo documentation of Mitigation Site progress. Photo documentation must be conducted in accordance with guidelines posted at https://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include GPS coordinates for each photo point.

c. The final Annual Progress Report must include the following additional information:

i. A description of the following Mitigation Site(s) characteristics:

ii. As-built drawings of the Mitigation Site(s), no bigger than 11”X17”; and

iii. A survey report documenting boundaries of the Mitigation Site(s).

ATTACHMENT 3 – Construction and Post-Construction Best Management Practices

Construction Best Management Practices

A. **Approvals to Commence Construction**. The Discharger shall not commence Project construction until all necessary federal, State, and local approvals are obtained.

B. **Personnel Education.** Prior to the start of the Project, and annually thereafter, the Discharger must educate all personnel on the requirements in the Order, pollution prevention measures, spill response measures, and BMP implementation and maintenance measures.

C. **Spill Containment Materials.** The Discharger must, at all times, maintain appropriate types and sufficient quantities of materials on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the United States and/or State.

D. **General Construction Storm Water Permit.** Prior to start of Project construction, the Discharger must, as applicable, obtain coverage under and comply with the requirements of State Water Resources Control Board Water Quality Order No. 2009-0009-DWQ, the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity*, (General Construction Storm Water Permit) and any reissuance. If Project construction activities do not require coverage under the General Construction Storm Water Permit, the Discharger must develop and implement a runoff management plan (or equivalent construction BMP plan) to prevent the discharge of sediment and other pollutants during construction activities.

E. **Groundwater Dewatering.** If groundwater dewatering is required for the Project, the Applicant shall enroll in and comply with the requirements of San Diego Water Board Order No. R9-2015-0013 NPDES No. CAG919003, *General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters within the San Diego Region* or its successor permit.

F. **Waste Management.** Except for discharges permitted under the Order, the Discharger must properly manage, store, treat, and dispose of waste, trash, organic or earthen material, and other construction debris from Project activities in accordance with applicable federal, state, and local laws and regulations. The storage, handling, treatment, or disposal of waste shall not create conditions of pollution, contamination, or nuisance as defined in Water Code section 13050. Waste management shall be implemented to avoid or minimize exposure of wastes to precipitation or storm water runoff. Direct discharge of waste into waters of the United States and/or State, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited. Upon Project completion, all Project-generated waste and debris shall be removed from the Project site(s) for disposal at an authorized disposal site in compliance with federal, state, and local laws and regulations.

G. **Upstream and Downstream Erosion.** Discharges of concentrated flow during construction or after Project completion must not cause or contribute to upstream or downstream erosion or damage to properties or stream habitat.

H. **Construction Equipment**. All equipment must be washed prior to transport to the Project site and must be free of sediment, debris, and foreign matter. All equipment components used in direct contact with surface water shall be steam cleaned prior to use. All equipment using gas, oil, hydraulic fluid, or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (e.g., motors, pumps, generator, etc.) shall be positioned over drip pans or other types of containment.

I. **Process Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the United States and/or State or placed in locations that may be subjected to storm water runoff flows. Pollutants discharged to areas within a stream diversion must be removed at the end of each workday or sooner if rain is predicted.

J. **Surface Water Diversion.** All surface waters, including ponded waters, must be diverted away from areas of active grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of the receiving water quality objectives. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation. Normal flows must be restored to the affected stream immediately upon completion of work at that location.

K. **Cofferdams or Water Barriers.** Cofferdams and water barrier construction shall be adequate to prevent seepage into or from the work area. Cofferdams or water barriers shall not be made of earth or other substances subject to erosion or that contain pollutants. When dewatering is necessary to create a temporary dry construction area, the water shall be pumped through a sediment-settling device before it is returned to the water body. The enclosure and the supportive material shall be removed when the work is completed, and removal shall proceed from downstream to upstream.

L. **Sediment Dredging and Placement of Material.** The Discharger shall conduct dredging and placement of dredged material in accordance with, but not limited to, the following best management practices:

1. Dredging must be conducted to remove dredge material and not stockpile material on the floor of the waterbody or level the bottom surface with the clamshell bucket;

2. The swing radius of unloading equipment must be controlled to prevent spillage of dredged sediments back into the waterbody;

3. The drop height from a clamshell bucket onto the scow must be controlled to prevent splashing or sloshing of dredged material back into the waterbody;

4. Excess or decanted water from dredged sediments must not be discharged back into the waterbody;

5. Dredged sediments must be loaded into material barges with watertight compartments and water collection systems to prevent return water from re-entering the waterbody;

6. Dredged material barges and scows must not be filled to a point that overflow or spillage could occur. Each material scow must be marked in such a way to allow the operator to visually identify the maximum load point;

7. Load-controlled boat movement, line attachment, and/or horsepower requirements of tugs and support boats at the Project site must be specified to avoid resuspension of sediment. Such measures may include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels;

8. Final dredge side slopes shall be designed to be stable in order to minimize sloughing; and

9. Silt screens or other appropriate methods shall be used to confine suspended particulate/turbidity to a small area where settling or removal can occur.
Make use of ocean currents and circulation to mix, disperse and dilute the discharge of dredged material.

M. **Protection of Eelgrass Beds**. If eelgrass is found during the pre-construction survey, the Discharger shall comply with the following requirements:

1. Prior to construction, the boundaries of adjacent eelgrass beds must be staked with ridged PVC markers or self-centering buoys visible at all tide heights. The markers or buoys must be protected, replaced, and maintained as needed to ensure they remain in place for the duration of Project construction activities;

2. During Project construction activities and regardless of the timing, the eelgrass beds must be protected with silt curtains deployed in a manner that will protect the beds from excessive turbidity or sediment deposition from Project activities; and

3. Any silt curtains must be kept at least 30 feet away from staked eelgrass beds in order to prevent damage to eelgrass beds from curtain drag or movement.

N. **Re-vegetation and Stabilization.** All areas that have 14 or more days of inactivity must be stabilized within 14 days of the last activity. The Discharger shall implement and maintain BMPs to prevent erosion of the rough graded areas. After completion of grading, all areas must be re-vegetated with native species appropriate for the area. The re-vegetation palette must not contain any plants listed on the California Invasive Plant Council Invasive Plant Inventory, which can be accessed at http://www.cal-ipc.org/ip/inventory/.

O. **Hazardous Materials.** Except as authorized by the Order, substances hazardous to aquatic life including, but not limited to, petroleum products, unused cement/concrete, asphalt, and coating materials, must be prevented from contaminating the soil and/or entering waters of the United States and/or State. BMPs must be implemented to prevent such discharges during each Project activity involving hazardous materials.

P. **Vegetation Removal.** Removal of vegetation must occur by hand, mechanically, or through application of United States Environmental Protection Agency (USEPA) approved herbicides deployed using applicable BMPs to minimize adverse effects to beneficial uses of waters of the United States and/or State. Discharges related to the application of aquatic pesticides within waters of the United States must be done in compliance with State Water Resources Control Board Water Quality Order No. 2013-0002--DWQ, the *Statewide General National Pollution Discharge Elimination System (NPDES Permit for Residual Aquatic Discharges to Waters of the United States from Algae and Aquatic Weed Control Applicators as amended,* and any subsequent reissuance as applicable.

Q. **Limits of Disturbance.** The Discharger shall clearly define the limits of Project disturbance to waters of the United States and/or State using highly visible markers such as flag markers, construction fencing, or silt barriers prior to commencement of Project construction activities within those areas.

R. **On-site Qualified Biologist or Environmental Professional.** The Discharger shall designate an on-site qualified biologist or other qualified environmental professional to monitor Project construction activities within or adjacent to waters of the United States and/or State to ensure compliance with the Order requirements, including Receiving Water Visual Monitoring as detailed in Condition II.D and Attachment 2. The biologist or other qualified environmental professional shall be given the authority to stop all work on-site if a violation of the Order occurs or has the potential to occur. All records, field logs, and/or field notes created by the on-site biologist/environmental professional for the purpose of documenting observations during Project activities shall be submitted with the Annual Progress Report(s).

Post-Construction Best Management Practices

A. **Post-Construction Discharges.** The Discharger shall not allow post-construction discharges from the Project site to cause or contribute to on-site or off-site erosion or damage to properties or stream habitats.

B. **Post-Construction BMP Design.** The Project must be designed to comply with the requirements for priority development projects in section E.3. of the Regional MS4 Permit Order No. R9-2013-0001, *National Pollutant Discharge Elimination Systems Permit and Waste Discharge Requirements for Discharges of Urban Runoff from the MS4s Draining the Watersheds within the San Diego Region* (Regional MS4 Permit), as amended by Order Nos. R9-2015-0001 and R9-2015-0100, as well as the most current BMP Design Manual for the City of San Clemente. Where conflict exists between the referenced documents the most stringent requirements shall apply.

ATTACHMENT 4 – Standard Provisions

1. Compliance

a. Duty to Comply. The Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330 and California Code of Regulations, title 23, sections 3867 et seq.

b. Duty to Comply. The Discharger must comply with all conditions and requirements of the Order. Any Order noncompliance constitutes a violation of the Water Code and is grounds for enforcement action or Order termination, revocation and reissuance, or modification.

c. Property Rights. The Order does not convey any property rights of any sort, or any exclusive privilege.

d. Property or Private Rights. The issuance of the Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

e. Project Modification. The Discharger must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of the Order, to the San Diego Water Board for prior review and written approval. If the San Diego Water Board is not notified of a significant change to the Project, it will be considered a violation of the Order.

f. Project Conformance with Application. All water quality protection measures and BMPs described in the application and supplemental information for water quality certification are incorporated by reference into the Order as if fully stated herein. Notwithstanding any more specific conditions in the Order, the Discharger shall construct, implement and comply with all water quality protection measures and BMPs described in the application and supplemental information. The conditions within the Order shall supersede conflicting provisions within the application and supplemental information submitted as part of this action.

g. Inspection and Entry. The Discharger must allow the San Diego Water Board or the State Water Resources Control Board, and/or their authorized representative(s) (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents as may be required under law, to:

i. Enter upon the Project or Compensatory Mitigation premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the Order;

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the Order;

iii. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the Order; and

iv. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance, or as otherwise authorized by the Clean Water Act or Water Code, any substances or parameters at any location.

2. Permit Administration

a. Term of Order. The Order shall expire (a) upon the expiration or retraction of the Clean Water Act section 404 (33 U.S.C. section 1344) permit issued by the U.S. Army Corps of Engineers for this Project; or (b) five (5) years from the date of issuance of the Order if Project construction has not started, whichever occurs first.

b. Payment of Fees. The Order is conditioned upon total payment of any fee required under California Code of Regulations, title 23, sections 3830 et seq. and owed by the Discharger.

3. Permit Actions

a. Transfers. The Order is not transferable in its entirety or in part to any person or organization except after notice to the San Diego Water Board is provided in accordance with the following terms:

i. Transfer of Property Ownership. The Discharger must notify the San Diego Water Board of any change in Project area ownership. Notification of change in ownership must include, but not be limited to, a statement that the Discharger has provided the purchaser with a copy of the Order and that the purchaser understands and accepts the Order requirements and the obligation to implement them or be subject to liability for failure to do so. The seller and purchaser must sign and date the notification and provide such notification to the San Diego Water Board **within 10 days of the transfer of ownership.**

ii. Transfer of Mitigation Responsibility. Any notification of transfer of responsibilities to satisfy the mitigation requirements set forth in the Order must include a signed statement from an authorized representative of the new party (transferee) demonstrating acceptance and understanding of the responsibility to comply with and fully satisfy the mitigation conditions, and an agreement that failure to comply with the mitigation conditions and associated requirements may subject the transferee to enforcement by the San Diego Water Board under California Water Code (Water Code) section 13385(a). Notification of transfer of responsibilities meeting the above conditions must be provided to the San Diego Water Board **within 10 days of the transfer date.**

iii. Transfer of Post-Construction BMP Maintenance Responsibility. The Discharger assumes responsibility for the inspection and maintenance of all post-construction structural BMPs until such responsibility is legally transferred to another entity. At the time maintenance responsibility for post-construction BMPs is legally transferred, the Discharger must submit to the San Diego Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications. The Discharger must provide such notification to the San Diego Water Board **within 10 days of the transfer of BMP maintenance responsibility.**

Upon properly noticed transfers of responsibility, the transferee assumes responsibility for compliance with the Order and references in the Order to the Discharger will be interpreted to refer to the transferee as appropriate. Transfer of responsibility does not necessarily relieve the Discharger of the Order in the event that a transferee fails to comply.

b. Order Reopener Actions. The Order may be modified, revoked and reissued, or terminated for cause including but not limited to the following:

i. Violation of any term or condition of the Order;

ii. Monitoring results indicating that continued Project activities could violate water quality objectives or impair the beneficial uses of the Pacific Ocean;

iii. Obtaining the Order by misrepresentation or failure to disclose fully all relevant facts;

iv. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

v. Incorporation of any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition.

4. Monitoring

a. Representative Monitoring. Samples and measurements taken for the purpose of monitoring under the Order shall be representative of the monitored activity.

b. Monitoring Instruments. All monitoring instruments and devices, which are used by the Discharger to fulfill the prescribed monitoring program, must be properly maintained and calibrated as necessary to ensure their continued precision and accuracy.

c. Certified Laboratory. All laboratory analyses must be performed in a laboratory certified to perform such analyses under the State Water Resources Control Board's Environmental Laboratory Accreditation Program or a laboratory approved by the San Diego Water Board.

d. USEPA Test Procedures. Monitoring must be conducted according to USEPA test procedures approved under Title 40, Code of Federal Regulations (CFR), Part 136, Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act as amended, unless other test procedures have been specified in the Order.

e. Records of Monitoring Information. Records of monitoring information shall include:

i. The date, exact place, and time of sampling or measurements;

ii. The individual(s) who performed the sampling, measurements, and analyses;

iii. The analytical techniques or methods used; and

iv. The results of such analyses.

f. **Records Retention.** The Discharger must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the Order, and records of all data used to complete the application for the Order. Records must be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this Project or when requested by the San Diego Water Board.

g. **Modifications to Monitoring and Reporting.** The San Diego Water Board may modify the monitoring program at any time during the term of the Order and may reduce or increase the number of parameters to be monitored, the locations monitored, the frequency of monitoring, or the number and size of samples collected.

5. Reporting

a. **Duty to Report.** The submittal of information required under the Order, or in response to a suspected violation of any condition of the Order, is required pursuant to Water Code section 13383. Monitoring and reporting costs are reasonable and necessary to evaluate compliance with the Order and water quality and other impacts. Civil liability may be administratively imposed by the San Diego Water Board for failure to submit information pursuant to Water Code section 13385.

b. **Duty to Provide Information.** The Discharger shall furnish to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the Order or to determine compliance with the Order.

c. **Anticipated Noncompliance.** The Discharger shall give advance notice to the San Diego Water Board of any planned changes in the Project or the Compensatory Mitigation project which may result in noncompliance with the Order.

d. **Twenty-Four Hour Non-Compliance Reporting.** The Discharger shall report any noncompliance which may endanger human health or the environment. Any such information shall be provided orally to the San Diego Water Board **within 24 hours** of the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The San Diego Water Board,

or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. Notifications to Discharger

a. General Waste Discharge Requirements. The requirements of the Order are enforceable through Water Quality Order No. 2003-0017-DWQ, *Statewide General Waste Discharge Requirements for Discharges of Dredged or Fill Material that have Received State Water Quality Certification* (Water Quality Order No. 2003-0017-DWQ). This provision shall apply irrespective of whether: (a) the federal permit for which the Order was obtained is subsequently retracted or is expired; or (b) the Order is expired. Water Quality Order No. 2003-0017-DWQ is available at:

https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/go_wdr401regulated_projects.pdf.

b. Hydroelectric Facility Exclusion. The Order is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Order application was filed pursuant to California Code of Regulations, title 23, section 3855(b), and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

c. Enforcement Notification. In the event of any violation or threatened violation of the conditions of the Order, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under State law. For purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into the Order.

d. Petitions. Any person aggrieved by this action of the San Diego Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with the California Code of Regulations, title 23, sections 3867 et seq. The State Water Board must receive the petition no later than 5:00 p.m. 30 days after the date of the Order. Copies of the law and regulations applicable to filing petitions may be found at: https://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

ATTACHMENT 5 – Compliance with 40 CFR Part 121.7(d)(1)

The federal Clean Water Act section 401 Certification Rule (401 Certification Rule) found at Title 40, Code of Federal Regulations (40 CFR) Part 121.7(d)(1) requires an explanation of why a condition in a water quality certification is necessary to assure that the authorized discharge will comply with water quality requirements, and a citation to federal, state, or tribal law (citations) that authorizes the condition. This attachment (Attachment 5) includes the legal requirements and technical rationale that serve as the basis for the requirements of Order No. R9-2022-0171 (Order) as required by the 401 Certification Rule.

This attachment uses the same organizational structure as the Order. Conditions and statements below correspond with the conditions set forth in Sections II and Attachment 4 of the Order.

This attachment includes citations to some sources of authority that are applicable to all conditions. These sources are specifically identified where they are most relevant but are also generally applicable to the conditions below. These conditions are generally required to comply with the state's Anti-Degradation Policy (State Water Board Resolution No. 68-16), which requires that any "activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained." All Regional Water Board Water Quality Control Plans incorporate the state's Anti-Degradation Policy by reference. The state Anti-Degradation Policy incorporates the federal Anti-Degradation Policy (40 CFR Part 131.12 (a)(1)), which requires "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." According to U.S. EPA, dischargers of dredged or fill material comply with the federal Anti-Degradation Policy by complying with U.S. EPA's section 404(b)(1) Guidelines. The State Water Boards adopted a modified version of U.S. EPA's section 404(b)(1) Guidelines in the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Dredge or Fill Procedures).

The Water Quality Control Plan for the San Diego Basin (9) (Basin Plan), adopted on September 8, 1994 as subsequently amended, establishes the following Waste Discharge Prohibitions pursuant to California Water Code section 13243 applicable to the authorized discharge. The following Waste Discharge Prohibitions provide the basis for conditions in the Order necessary to protect water quality and ensure compliance with water quality standards.

- Prohibition No. 1. The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in California Water Code section 13050, is prohibited.
- Prohibition No. 2. The discharge of waste to land, except as authorized by waste discharge requirements or the terms described in California Water Code section 13264 is prohibited.
- Prohibition No. 3. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by an NPDES permit or a dredged or fill material permit (subject to the exemption described in California Water Code section 13376) is prohibited.

- Prohibition No. 7. The dumping, deposition, or discharge of waste directly into waters of the state, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited unless authorized by the San Diego Water Board.
- Prohibition No. 14. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the state or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.

The above citations and justification for compliance with water quality requirements apply to all the conditions included in the Order. The following statements provides additional water quality justification and citations for conditions in section II of the Order.

II. B. Project Conformance with Water Quality Control Plans

Justification: This condition is necessary for protection beneficial uses and compliance with water quality standards.

Citation: California Code of Regulations, title 23, section 3860(a).

II. C. Compensatory Mitigation Site Long-Term Management

Justification: These conditions are necessary to ensure that impacts to water quality functions and services of waters of the United States and/or State are mitigated. Compensatory mitigation replaces function and services lost during temporary and/or permanent impacts.

Citation: These conditions are necessary to ensure compliance with state and federal anti-degradation policies. Compensatory mitigation requirements are consistent with Dredge or Fill Procedures, section IV.B.1.a (California Code of Regulations title 23, section 3013), which requires that the Water Boards will approve a project only after it has been determined that a sequence of actions has been taken to first avoid, then to minimize, and lastly compensate for adverse impacts that cannot be practicably avoided or minimized. (See also California Code of Regulations, title. 23, section 3856(h) [requiring submittal of proposed mitigation and description of steps taken to avoid, minimize, or compensate].) Compensatory mitigation conditions are consistent with Executive Order W-59-93 commonly referred to as California's "no net loss" policy for wetlands. Compensatory mitigation requirements are also authorized by California Water Code section 13263, which requires the imposition of requirements that implement water quality control plans, takes into consideration the beneficial uses to be protected, and the need to prevent nuisance. These conditions related to mitigation requirements are consistent with the Dredged or Fill Procedures, section IV.B.1.a, which requires that the Water Boards will approve a project only after it has been determined that a sequence of actions has been taken to first avoid, then to minimize, and lastly compensate for adverse impacts that cannot be practicably avoided or minimized. Accordingly, compensatory mitigation is required for projects that would result in permanent impacts.

II. D. Monitoring and Reporting Requirements

Justification: These conditions are necessary to verify that the Project impacts to waters of the United States and/or State do not exceed those authorized under the Order and that any compensatory mitigation and/or restoration is sufficient to protect beneficial uses and water quality objectives. The reports document the progress of the project in replacing the function and services lost during temporary and/or permanent impacts.

Citation: These monitoring and reporting conditions are authorized because the Water Boards have the authority to investigate the quality of any waters of the state within its region under California Water Code sections 13267 and 13383.

II. E. Project Status Notifications

Justification: These conditions are necessary to ensure that the San Diego Water Board knows when impacts to waters of the United States and/or State are occurring. In addition, notifications related to non-compliance are needed to ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges can be taken as soon as possible.

Citation: These notification and reporting conditions are authorized because the San Diego Water Board has the authority to investigate the quality of any waters of the State within its region under California Water Code sections 13267 and 13383.

II. D - H. Standard Provisions

Justification: These are standard conditions that are included as conditions of all water quality certification actions. These standard conditions are necessary for the protection of beneficial uses and compliance with water quality standards.

Citation: California Code of Regulations, title 23, sections 3830, 3855(b), 3860, and 3867; California Water Code section 13330.

Attachment 4. Standard Provisions – Compliance

- **Duty to Comply. Justification:** Noncompliance with Order No. R9-2021-0101 can be enforced under Water Code sections 13331, 13350, 13385, and 13386.
- **Project Modification. Justification:** California Water Code section 13264 prohibits any discharge that is not specifically authorized in the Order. The Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to California Water Code section 13330 and California Code of Regulations, title 23, section 3867.

- **Project Conformance with Application. Justification:** California Water Code section 13264 prohibits any discharge that is not specifically authorized in the Order.
- **Construction and Post-Construction Best Management Practices. Justification:** These conditions are necessary to prevent the discharge of construction related pollutants into waters of the United States and/or State that impact beneficial uses and exceed compliance with water quality standards.

  Citation: Clean Water Act sections 301 and 402, California Water Code sections 13370 and 13260, Basin Plan Prohibition No. 14.
- **Inspection and Entry.** Conditions related to site access requirements are authorized because they support the Water Boards' authority to investigate the quality of any waters of the state within its region under California Water Code section 13267. California Water Code section 13267(c) provides that "the regional board may inspect the facilities of any person to ascertain whether the purposes of this division are being met and waste discharge requirements are being complied with."

  Citation: California Water Code section 13267(c).

Attachment 4. Standard Provisions – Permit Actions

Justification: Conditions regarding transfers are necessary to confirm that a new owner agrees to assume legal responsibility for compliance with the Order. The Order authorizes activities based on the information submitted in the application, including the legally responsible party. If a new owner does not agree to assume legal responsibility, then the original discharger remains responsible for compliance with this Order. Confirmation is also necessary to confirm whether liability for long-term best management practices maintenance is accepted by another entity. If not, the original discharger remains responsible for compliance with this Order.

Citation: California Water Code section 13264 prohibits any discharge that is not specifically authorized in the Order.

Attachment 4. Standard Provisions – Reporting

- **Anticipated Non-compliance and 24-Hour Non-compliance Reporting. Justification:** These conditions are necessary to ensure that the San Diego Water Board knows when impacts to waters of the United States and/or State are occurring. In addition, notifications related to non-compliance are needed to ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges can be taken as soon as possible.

  Citation: These notification and reporting conditions are authorized because the San Diego Water Board has the authority to investigate the quality of any waters of the State within its region under California Water Code sections 13267 and 13383.

- **Document Certification Requirements, Document Signatory Requirements, and Electronic Document Submittal. Justification:** These conditions are necessary to verify that the Project impacts to waters of the United States and/or State do not exceed those authorized under the Order and that any compensatory mitigation and/or restoration is sufficient to protect beneficial uses and water quality objectives. The reports document the progress of the project in replacing the function and services lost during temporary and/or permanent impacts.

Citation: These monitoring and reporting conditions are authorized because the Water Boards have the authority to investigate the quality of any waters of the state within its region under California Water Code sections 13267 and 13383.

ATTACHMENT 6 – Project Maps

Figure 1: Project Area Vicinity Map

Figure 2: Oceanside Borrow Area

Figure 3: San Clemente Beach Placement Area

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W 6b

REVISED STAFF RECOMMENDATION

ON CONSISTENCY DETERMINATION

Consistency Determination No.	**CD-029-11**
Staff:	MPD-SF
File Date:	6/17/11
60th Day:	8/16/11
75th Day:	8/31/11
Extended to:	11/7/11
Commission Meeting:	11/2/11

FEDERAL AGENCY: **U.S. Army Corps of Engineers**

PROJECT LOCATION: San Clemente State Beach and offshore of Del Mar Boat Basin, Orange and San Diego Counties (Exhibits 1-2)

PROJECT DESCRIPTION: San Clemente Shoreline Protection Project: 50-Year Beach nourishment program for San Clemente State Beach, consisting of initial nourishment on the beach in 2012 of approximately 251,000 cu. yds. of sand dredged from offshore the Del Mar Boat Basin, with periodic renourishment at approximately six year intervals (Exhibits 3-4)

SUBSTANTIVE FILE DOCUMENTS: See page 33.

Staff Recommendation: Conditional Concurrence. Motion is on page 6. Conditions are on pages 6-9.

[**Staff Note**: This revised report is similar to the previous version of the report, which staff issued for the Commission's September agenda, with the only changes being as follows. First, an Exhibit has been added (Exhibit 16 – a DEIS comment letter by the National Marine Fisheries Service, which we believe supports the staff-recommended conditions). Second, after discussions with the Corps over the wording of the conditions, a few minor changes have been made to several of the conditions. Third, in discussions with Commission staff, Corps

personnel have also maintained that existing Corps regulations prohibit reliance on mitigation ratios and thus preclude the Corps from achieving full consistency with the CCMP in the manner recommended in Condition 8. The Commission staff has requested a copy of the regulation cited and will respond after receiving it and considering its implications. Finally, discussion is ongoing between the Corps and Commission staff on several other conditions. The results of any such discussions will be explained in a subsequent addendum to this report.]

List of Exhibits

EXECUTIVE SUMMARY

The U.S Army Corps of Engineers (Corps) has submitted a consistency determination for San Clemente Shoreline Protection Project, a 50-Year Beach nourishment program for San Clemente Beach, consisting of initial nourishment on the beach in 2012 of approximately 251,000 cu. yds. of sand dredged from offshore the Del Mar Boat Basin, with periodic renourishment. The beach disposal would be on the dry sandy beach, in a 3,412 ft. long area centered around the San Clemente Pier. Dredging would be by hopper dredge; after dredging the dredge vessel would be towed to a mooring offshore San Clemente and the material pumped onshore. The initial phase would be during the fall and winter season, in part to avoid effects on grunion spawning. When the beach erodes to its design width, the Corps would repeat the process, which it estimates would occur, on average, at six-year intervals.

The primary habitat and marine resource concerns raised by the project are potential effects on grunions, least terns, snowy plovers, reef habitats, surfgrass, and giant kelp. The dredging (offshore borrow site) and disposal (beach site) are not themselves environmentally sensitive habitat areas or areas of particularly valuable marine resources. Least terns and snowy plovers do not nest in the project area, and the project has been scheduled to avoid the grunion spawning season. The primary marine resources concerns raised by the project are the *indirect* effects of where and how much material will be transported by waves through

the littoral system, where it has the potential to temporarily or permanently affect offshore sensitive marine habitats, which, in San Clemente, consist of offshore surfgrass, reef, and giant kelp habitats.

Unlike the SANDAG beach nourishment project[1] the Commission reviewed in June of this year, which had been previously implemented and studied, no history of large nourishment activities and how sand has moved downcoast is available for San Clemente's offshore area. The Corps has selected a project size that, based on its modeling, it expects to result in only temporary impacts, and it believes that the offshore habitats (particularly surfgrass, likely the most sensitive species potentially affected in this location) will recover from temporary sand cover as it moves downcoast. The Corps acknowledges uncertainties in its modeling and analysis and assumes some mitigation may be necessary. The Corps has committed to monitoring the offshore areas, and also committed, if impacts are found, to provide one acre of surfgrass mitigation and one acre of reef mitigation. The Corps also acknowledges that because surfgrass mitigation success is not currently a known science, and thus its success cannot be guaranteed, if the monitoring shows the need for surfgrass mitigation, and the mitigation is attempted but not ultimately successful, it will then implement kelp mitigation (which is more predictable) to offset surfgrass effects.

The Corps has met with U.S. Fish and Wildlife Service, National Marine Fisheries Service, the California Dept. of Fish and Game, and the Environmental Protection Agency to discuss the habitat issues, and these agencies have expressed a number of concerns, including the need for: (1) more extensive monitoring and assurances of mitigation success; (2) inter-agency review and agreement before monitoring and mitigation plans are finalized; and (3) identification of backup funding mechanisms and commitments if currently committed funding levels are not sufficient. These agencies have also recommended initial implementation of smaller nourishment project (identified as a 10 meter beach width, as opposed to the proposed 15 meter beach width), until more is learned about the shoreline dynamics in San Clemente. These recommendations are summarized on pages 22-24.

The staff is recommending nine conditions to assure the monitoring and mitigation measures are effective, adequate to protect, and if impacts occur, mitigate, the project's effects on marine resources, and to enable the project to be found consistent with the marine resource policies of the Coastal Act. The recommended conditions would provide for: (1) implementing additional grunion monitoring and protection measures, in the event unforeseen circumstances delayed work into the grunion season; (2) Commission staff review of and concurrence with the final monitoring plans; (3) specification of success criteria to be included in the monitoring plans to assure they will adequately measure impacts; (4) increasing the mitigation ratio if out-of-kind mitigation is implemented (which is triggered if in-kind mitigation is unsuccessful); (5) lengthening the monitoring period from 2 to 5 years; (6) submitting all monitoring reports to the Commission staff; and (7) assuring that subsequent re-nourishments will not be implemented unless and until the Commission

[1] San Diego Association of Governments (SANDAG) coastal development permit 6-11-018.

staff has reviewed the monitoring and mitigation and agrees the habitats have been adequately restored and/or that the permanent loss of habitat has been adequately mitigated. If the Corps were to agree to implement these conditions, the staff believes the proposed project could be found consistent with the marine resource and dredging and filling policies (Sections 30230, 30231, and 30233) of the Coastal Act.

In the long-term, the project will improve public access by increasing available public beach area and lessening the need for shoreline protection works such as seawalls or increasing size of the revetment that protects the rail line located inland of the beach. Public access and recreation impact issues include temporary effects blocking access to disposal areas during construction, and possible alteration of offshore bathymetry, which could temporarily affect surfing conditions until the sand moves downcoast. The project is being scheduled to avoid the peak recreation season, and the staging area would not interfere with public accessibility or parking. The Corps has agreed to monitoring effects on surfing. The staff believes additional details and specifications are needed to assure the effectiveness of the monitoring, and is recommending conditions providing for Commission staff review of the final staging and surfing monitoring plans, including several details needed to reduce effects and improve monitoring validity. If the Corps were to agree to implement these conditions, the staff believes the proposed project could be found consistent with the public access and recreation and surfing policies (Sections 30210-30213, and 30220) of the Coastal Act.

Water quality issues include turbidity and practices addressing construction equipment on the beach. With conditions assuring Commission staff review (prior to project implementation) of turbidity monitoring and best management practices for construction activities, the staff believes the project would be consistent with the water quality policy (Section 30231) of the Coastal Act.

STAFF SUMMARY AND RECOMMENDATION

I. STAFF SUMMARY:

A. Project Description. The Corps is proposing a 50-year program to nourish San Clemente State Beach. The initial nourishment would consist of placing 251,000 cu. yds. of predominantly sandy sediment in a 50 ft. wide by 3,412 ft. long area of dry sandy beach (Exhibits 2 & 4). The material would be dredged by a hopper dredge from an offshore area, approximately one mile offshore of the Del Mar Boat Basin on Camp Pendleton, in northern San Diego County, just north of the City of Oceanside (Exhibit 3). The hopper dredge would be filled at the borrow site and transported 21 mi. north to San Clemente, where it would be attached to a moored floating section of pipeline (monobuoy) extending 1,500 ft. to the shoreline. The monobuoy would be anchored in water depths of at least 25 ft. The material would be re-suspended and discharged through the on-board pumping system to the receiver site, which is centered around the San Clemente Pier, and which extends from Linda Lane to the north, to T Street (Esplanade/T Street) to the south.

The material would be placed behind L-shaped beach berms, designed to allow dewatering. The dredge material would be mixed with seawater to form a slurry, which would be pumped onto the beach between the berm and toe of the berm. The berm reduces ocean water turbidity by allowing all the sand to settle inside the bermed area while the seawater is channeled along the berm until it reaches the open end where it drains into the ocean. Temporary dikes within the berm would allow sand to settle in designated areas. Once a 200 ft. section of berm is filled in with sand, another 200 ft. of berm would be created, the pipeline would be moved or extended on the dry beach only into the new berm area, and the process would begin again; the pipeline along the seafloor would not be moved. As the material is deposited behind the berm, the sand would be spread using two bulldozers and one front-end loader to direct the flow of the sand slurry and form a gradual slope to the existing beach elevation. The berm would be subject to the forces of the waves and weather, and would eventually settle down to a natural grade for the beach. The design berm elevation would be + 17 ft. MLLW (17 ft. above mean lower low water), and the design foreshore slope is 8:1 (8 ft. horizontal to 1 ft. vertical), both designed to match historic beach heights and slopes in the area.

For the equipment staging area, the Corps would use the open area on the inland edge of the beach adjacent to the Marine Safety Headquarters (Exhibit 5), which is north of the San Clemente Pier. Offshore equipment would be moored at Dana Point Harbor (5 mi. north) when not in use.

The construction period is approximately four months in duration and would occur from late August/early September, 2012, through March, 2013. It would be timed to avoid the peak recreation period and the least tern breeding and grunion spawning seasons. Dredging would be performed 24 hours/day, 7 days/week. Shore equipment would work 12 hours/day, 6 days/week.

The Corps proposes to conduct long-term monitoring of the shoreline, to determine when renourishment is needed, for the project duration, which the Corps has defined as a 50 year period. Renourishment efforts would occur when the shoreline reaches the base beach width (i.e., approximately 35 ft.) and would likely involve similar dredging and disposal amounts as the initial proposed nourishment.

B. <u>Federal Agency's Consistency Determination</u>. The Corps has determined the project consistent to the maximum extent practicable with the California Coastal Management Program (CCMP).

II. STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following motion:

MOTION: **I move that the Commission conditionally concur with consistency determination CD-029-11 and determine that, as conditioned, the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).**

STAFF RECOMMENDATION:

Staff recommends a **YES** vote on the motion. Passage of this motion will result in a conditional agreement with the determination 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 TO CONDITIONALLY CONCUR WITH CONSISTENCY DETERMINATION:

The Commission hereby **conditionally concurs** with consistency determination CD-029-11 by the Corps on the grounds that the project would be fully consistent, and thus consistent to the maximum extent practicable, with the enforceable policies of the CCMP, provided the Corps agrees to modify the project consistent with the conditions specified below, as provided for in 15 CFR §930.4.

Conditions:

1. **Unanticipated delays resulting in disposal during grunion season.** If unanticipated delays result in a time extension of disposal into the grunion season (which is March through August), prior to any such disposal, the Corps will inform the Commission staff, and agree to implement and adhere to the same grunion monitoring measures, mitigation triggers, and mitigation requirements as those adopted by the Commission on June 15, 2011, in its review of the San Diego Association of Governments' (SANDAG's) coastal development permit 6-11-018, Condition No. 8 (Grunions). These measures are attached as Exhibit 13.

2. **Final Monitoring Plans.** Prior to commencement of construction, the Corps will provide to the Commission's Executive Director, for his review and concurrence, a copy of the final Preconstruction Engineering and Design (PED) phase surveys and the subsequent monitoring plans, including:

(a) the final biological (reef/surfgrass) Mitigation and Monitoring Plan (MMRP), including all surveys conducted in preparation of that plan;

(b) the surfing monitoring plan;

(c) the turbidity monitoring plan;

(d) the Stormwater Pollution Prevention Plan (SWPPP); and

(e) the Oil Spill Prevention and Response Plan (OSPRP).

3. **MMRP Details.** The final MMRP shall assure: (a) that biological monitoring of all offshore potential impact areas shall be for a minimum of 2 years pre-construction and 2 years post construction; (b) that monitoring and analytical methods are adequate to identify and accurately measure all short- and long-term impacts from the beach nourishment effort; (c) that appropriate mitigation sites are available to address potential impacts; and (d) that the success criteria and analytical methods used are adequate to demonstrate a difference between impact/mitigation site and control sites and shall include the following:

(i) clear and specific identification of the potential impact areas that will be monitored before and after the beach nourishment efforts, including the intertidal reef at Mariposa Point; and change criteria that will be used to establish thresholds of impacts for mitigation;

(ii) schedule and frequency of monitoring efforts and monitoring reports;

(iii) discussion of the monitoring and analytical methods that will be used to evaluation the sites based on the change criteria for both short- and long-term impacts;

(iv) delineation and characterization of the potential mitigation sites that will be used if short- or long-term impacts are identified that meet the threshold for mitigation

(v) clear and specific criteria for identifying impacts and for evaluating the success of any necessary mitigation. If statistical tests are proposed, then the plan must specify biologically meaningful effect sizes (i.e., a difference between the control and the impact site, or between the control and the mitigation site) and specify alpha and beta, with alpha equal to beta. The field sampling plan must include sufficient replication to provide a statistical test with at least 80% statistical power (beta=0.2) to detect an effect of the stated size with alpha = 0.2. The proposed replication must be based on preliminary sampling data and a statistical power analysis. Smaller alpha and beta may be used.

(vi) Identification of the control or reference sites that will be used and the results of a preliminary field sample at both control and potential impact sites demonstrating that the control sites are appropriate.

Construction shall not commence until the Corps has received written concurrence from the Executive Director that the MMRP satisfies all these criteria.

4. **Surfing Monitoring Details.** The Corps will revise its Surfing Monitoring Plan (Exhibit 15) to include and implement the following features:

(a) adequate baseline data collection, including, if feasible, a full year of pre-construction monitoring to determine the baseline condition. If this is infeasible, then another local surf site should be monitored as a control (e.g. Lower Trestles, which is already monitored daily and shown on the website: www.surfline.com). (A control site would also assist in examining and understanding long-term trends.)

(b) identification of locations to be monitored, the length of the pre-project monitoring, and interest groups to be involved in establishing the monitoring effort to identify surfing or surf quality changes that might be attributable to the nourishment project, including identifying criteria for a determination of what constitutes a significant alteration or impact.

(c) supplementing the "wave observation" component of the surf monitoring with observations about the surfing activities, including a usage scale of surfers in the water, both morning and mid-day, and describing the average and maximum ride lengths.

(d) given that video recordings are included, if observer counts are too difficult for one observer, video may be used to augment observer counts.

(e) when collecting user data, the analysis should be disaggregated into weekday and weekend data.

(f) for mid-day observations on days when surfers are kept out of the water by lifeguards, these should be recorded as restricted use days (not zero use days).

(g) establishing mechanisms for informing the local community about the project, and encouraging public comments on surfing quality (or other recreational concerns), including but not limited to: (i) a web site, (ii) pre-construction notifications to the public; and (iii) signs.

Construction shall not commence until the Corps has received written concurrence from the Executive Director that the monitoring plan satisfies all of these criteria.

5. **Staging Plan Details.** The staging plans will assure: (a) that staging will not be permitted on public beaches, within public beach parking lots, or in any other location that would otherwise restrict public access to the beach; and (b) that the minimum number of public parking spaces (on and off-street) that are required for the staging of equipment, machinery and employee parking and that are otherwise necessary to implement the project will be used.

6. **Water Quality Plan Details.** The SWPPP will assure that: (a) the contractor will not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion; (b) no machinery will be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to implement the project; (c) construction equipment will not be washed on the beach; (d) where practicable, the contractor will use biodegradable (e.g., vegetable oil-based) lubricants and hydraulic fluids, and/or electric or natural gas powered equipment; and (e) immediately upon completion of construction and/or when the staging site is no longer needed, the site shall be returned to its preconstruction state.

7. **On-going Monitoring Reports.** The Corps will provide to the Executive Director all monitoring reports, including biological monitoring (including biological mitigation monitoring), surfing monitoring, turbidity, and spill prevention and response monitoring, long-term shoreline monitoring, and cultural resource surveys.

8. **In-Kind Mitigation**. For any mitigation shown necessary by the monitoring, the Corps will not proceed to implement out-of-kind mitigations (e.g., using kelp habitat to mitigate surfgrass impacts, or providing mid-water habitat to mitigate for shallow-water habitat impacts) without showing to the satisfaction of the Executive Director that in-kind mitigation is infeasible. In addition, if out-of-kind mitigation is agreed to and impelemented, the mitigation ratio shall be 4:1 (i.e., 4 acres of mitigation for one acre of impact), and the area measured as the impact area shall be the entire seafloor area (and not, e.g., the acreage of scattered boulders alone).

9. **Renourishment.** The Corps will notify the Executive Director prior to any reinitation (after the first phase) of nourishment, and the Corps shall not implement any such renourishment until the Exective Director has received all of the monitoring reports required by that time, reviewed them, and agreed that the biological impacts have been mitigated and affected habitat restored to pre-project conditions.

III. APPLICABLE LEGAL AUTHORITIES.

A. Standard of Review. The federal Coastal Zone Management Act ("CZMA"), 16 U.S.C. § 1451-1464, requires that federal agency activities affecting coastal resources be "carried out in a manner which is consistent to the maximum extent practicable with the

enforceable policies of approved State management programs." Id. at § 1456(c)(1)(A). The implementing regulations for the CZMA ("federal consistency regulations"), at 15 C.F.R. § 930.32(a)(1), define the phrase "consistent to the maximum extent practicable" to mean:

> *… fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.*

This standard allows a federal activity that is not fully consistent with California's Coastal Management Program ("CCMP") to proceed if full compliance with the CCMP would be "prohibited by existing law." The Corps, in its consistency determination, did not argue that full consistency is prohibited by existing law or provide any documentation to support a maximum extent practicable argument. Therefore, until recently, there was no basis to consider the possibility that existing law applicable to the Federal agency might prohibit full consistency. However, in recent discussions between Commission staff and the Corps, Corps personnel responded to Commission staff's proposed Condition 8 by stating that existing Corps regulations prohibit reliance on mitigation ratios, and thus, if the Commission were to find that compliance with Condition 8, as proposed, were required to achieve full consistency with the CCMP, then full compliance would, in fact, be precluded by Corps regulations. In any event, the Corps personnel indicated that achieving consistency with the CCMP in the manner recommended in Condition 8 is precluded, which may have "maximum extent practicability" implications. However, the status of the alleged regulation is unclear, as it appears not to be a formal regulation codified in the CFR, and as of the production of this staff report, the Corps has neither clarified the status of the "regulation" nor provided us with a copy. The Commission staff has requested a copy it and will respond further after receiving and considering its implications. Since the Corps has not formally raised the issue of practicability, as so defined, the standard before the Commission as of the issuance of this report is full consistency with the enforceable policies of the CCMP, which are the policies of Chapter 3 of the Coastal Act (Cal. Pub. Res. Code §§ 30200-30265.5).

B. Conditional Concurrences. The federal consistency regulations (15 CFR § 930.4) provide for conditional concurrences, as follows:

> *(a) Federal agencies, … should cooperate with State agencies to develop conditions that, if agreed to during the State agency's consistency review period and included in a Federal agency's final decision under Subpart C … would allow the State agency to concur with the federal action. If instead a State agency issues a conditional concurrence:*
>
> *(1) The State agency shall include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies. The State agency's concurrence letter shall also inform the parties that if the requirements of paragraphs (a)(1) through (3) of the section are not met, then all parties shall treat the State agency's conditional concurrence letter as an objection pursuant to the applicable Subpart . . . ; and*

> *(2) The Federal agency (for Subpart C) … shall modify the applicable plan* [or] *project proposal, … pursuant to the State agency's conditions. The Federal agency … shall immediately notify the State agency if the State agency's conditions are not acceptable; and*
>
> *…*
>
> *(b) If the requirements of paragraphs (a)(1) through (3) of this section are not met, then all parties shall treat the State agency's conditional concurrence as an objection pursuant to the applicable Subpart.*

IV. FINDINGS AND DECLARATIONS.

The Commission finds and declares as follows:

A. Marine Resources/Beach Nourishment/Dredging and Filling. 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; this section 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 and requires disposal to occur in a manner protecting sensitive habitat; this section 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.*

Under the above policies, the project needs to be an allowable use for dredging and filling, the project needs to be the least environmentally damaging feasible alternative, marine resources need to be protected, and adverse impacts need to be mitigated.

1. <u>Allowable Use</u>. The Commission has historically found beach nourishment to be an allowable use under Section 30233(a)(5), which allows dredging and filling for mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas. Moreover, Section 30233(b) encourages beach nourishment whenever dredge material is suitable, and material being dredged for the sole purpose of replenishing beaches is inherently suitable for use (assuming, as is the case here, it tests free of contaminants and is predominantly sand sized material). The project site is not an environmentally sensitive area. The borrow site offshore the Del Mar Boat Basin is not an environmentally sensitive area. The disposal site, San Clemente Beach, is also not an environmentally sensitive area, as it does not contain snowy plover or least tern nesting. In addition, the project is being scheduled to avoid effects on grunion spawning. The Commission therefore finds the project is an allowable use under Section 30233 for dredging and filling.

2. <u>Alternatives</u>. Alternatives considered by the Corps included:

(1) No Action, which the Corps states would lead to continued loss of recreational and economic benefits, and may induce the Southern California Regional Rail Authority (SCRRA), which maintains the rail line that runs along the inland side of San Clemente Beach, to expand its existing revetment and/or build larger seawalls;

(2) Managed Retreat, which the Corps concludes is not a viable non-structural alternative in this situation, in part due to the cost of relocating the rail line;

(3) Beach Nourishment (proposed), which the Corps concludes is the most socially and environmentally appropriate alternative; and

(4) "Hard" Structural Measures, including onshore revetments and seawalls, offshore reefs and breakwaters, and perpendicular groins, all of which, the Corps notes (and the Commission agrees) raise a number of more problematic Coastal Act and coastal resource concerns.

In terms of alternatives *within* the category of beach nourishment, the Corps considered various beach width alternatives in five meter increments and looked at beach widths of between 10 and 60 meters. The proposed alternative is a 15-meter (50 ft.) beach width. In its Environmental Impact Statement prepared for the project, the Corps narrowed the focus its analysis on two of these: the 15- and 35-meter beach widths. A 35-meter beach width would involve initial placement of 586,000 cy. yds. of sand on the beach. The Corps rejected this alternative as the EIS concluded it would have significant adverse long-term and possibly irreversible impacts on the offshore biological resources (reef habitat, surfgrass, and kelp). In its EIS and consistency determination the Corps concluded that the proposed 15-meter (50 ft.) beach width nourishment would avoid these significant adverse effects, and is therefore the preferred alternative.

As will be discussed below, several agencies reviewing the proposal have recommended a 10 meter beach width, and they believe it may reduce offshore biological effects while still being a feasible alternative. Because this area has not been nourished in the past at a magnitude approaching the proposed project (i.e., only much smaller nourishment has occurred here), unlike the SANDAG project (i.e., the San Diego County beach nourishment) discussed elsewhere in this report, where prior nourishment efforts had improved the knowledge of how material would move downcoast and affect offshore sensitive habitats, it is not clear the extent to which sand will be mobilized and temporarily cover offshore sensitive habitats. Thus, future monitoring will be needed to assess the littoral and habitat dynamics and impacts in this location, and there is insufficient data, at this point, to require the reduction in width of the project from 15 meters to 10. Also, maintaining a narrower beach width could lead to more frequent nourishment events, which could offset the benefits of a reduced project size. If unmitigable or unanticipated effects occur, future re-nourishment events may need to be reduced in scope. However, given the information and analysis included in this consistency determination (and accompanying EIS), and based on the information currently available, the Commission finds that the proposed beach width proposal would represent the least environmentally damaging feasible alternative. This finding is contingent on the assumption that the Corps will agree to Condition 9, which provides that the will not implement follow-up renourishment until the Exective Director reviews the monitoring reports and agrees that the biological effects have been adequately mitigated, and affected habitat restored.

3. <u>Mitigation</u>. The primary habitat and marine resource concerns raised by the project are potential effects on grunions, least terns, snowy plovers, reef habitats, surfgrass, giant kelp, and various birds and intertidal organisms. The dredging (offshore borrow site) and disposal (beach site) are not themselves environmentally sensitive

habitat areas or areas of particularly valuable marine resources. Least terns and snowy plovers do not nest in the project area, and the project has been scheduled to avoid the grunion spawning season. The primary marine resources concerns raised by the project are the *indirect* effects of where and how much material will be transported by waves through the littoral system, where it has the potential to temporarily or permanently affect offshore sensitive marine habitats.

In its past reviews of beach nourishment projects using offshore borrow sites, the Commission has generally considered as minimal the temporary turbidity, burial and resuspension of material and organisms; these areas are generally recolonized within relatively short timeframes. SANDAG has surveyed the offshore borrow site being proposed by the Corps in its studies of beach nourishment borrow site options.[2] No kelp beds are present, and the SANDAG surveys do not show environmentally sensitive in this area at the depths proposed. The sensitive marine areas for the proposed project are the areas offshore where sand will migrate through, after initial placement. The Corps' consistency determination notes the particular significance of the offshore surfgrass, reef, and giant kelp marine habitats in San Clemente; the consistency determination states:

> *Surfgrass (Phyllospadix torreyi and P. Scouleri) and giant kelp (Macrocystis pyrifera) are considered to be particularly valuable marine habitats by the resource agencies because they provide shelter for fishes and invertebrates, attachment sites for sessile invertebrates, and form the basis of many marine food chains, both as living material and detritus. Surfgrass and giant kelp beds occur in limited areas along the southern California coast, usually on hard bottom substrate, compared to much more common soft bottom habitat.*

The Corps reviewed existing habitat studies and conducted surveys for surfgrass, reef, kelp, and other offshore habitats in the project vicinity. The Corps states:

> ***Marine Shoreline and Offshore Habitats***
> *The predominant intertidal habitat along San Clemente's shoreline is sandy beach, although some rocky outcrops that extend from mid-beach to the low intertidal are present at Mariposa Point, north of San Clemente Pier. Beyond the surf zone, the seafloor is a mosaic of sand and low-to-high relief patch reef. Some pinnacles of the reef are visible in the nearshore zone at low tide while two prominent offshore pinnacles break the surface offshore of Mariposa Point and south of the San Clemente Pier. Other reef habitats are located south of the Pier offshore of T-Street that extends west, and then north around the end of the San Clemente Pier.*

[2] Appendix D to the SANDAG Regional Beach Sand Project EIR/EA.

Exhibits 6-9 show the location of the offshore reef, kelp, and surfgrass areas. The consistency determination notes that kelp canopy has fluctuated considerably during the past decade. Concerning surfgrass, the consistency determination states:

> *Surfgrass (Phyllospadix torreyi), an important species that enhances the biological value of nearshore habitat, is present in the low intertidal beginning approximately 300 ft (91 m) offshore of the sand beach. Surfgrass serves as a nursery for California spiny lobster (Panulirus interruptus) and provides shelter for a variety of juvenile and adult fishes. Surfgrass is present throughout the low intertidal platform of Mariposa Point, which is upcoast outside of the project area. Surfgrass off Mariposa Point occurs a minimum of three feet above the sand line with no more than one inch of sand covering the surface of the rocks. Surfgrass blades in this area are 1 to 2 ft (0.3 to 0.6 m) in length.*

In the area north of the Pier, the surveys identified scattered patches of surfgrass on the upper surfaces of one foot high boulders. Surfgrass blades were generally 2-3 ft. long. South of the Pier, the survey found surfgrass meadows were observed, particularly on the T Street Reef, in water depths of -4 to -13 ft. MLLW (Exhibits 6 & 7). The consistency determination describes the subtidal reef south of the Pier as follows:

> *The subtidal reef habitat south of the Pier is extensive and angles around the tip of San Clemente Pier. This reef formation is shown on Figure 4-6. Larger macrophytes observed on the reef include giant kelp, feather boa kelp (Endarchne binghamiae) and bladder chain kelp (Cystoseira/ Halidrys) (CRM 2000). A small patch of giant kelp consisting of 12 plants was observed 650 ft (197 m) south of the Pier at a depth of 16 ft (5 m) in October 1999, but was not observed in June 2000. Kelp canopy was observed on the entire reef in July 2009.*

The consistency determination also notes that the:

> *California spiny lobster (Panulirus interruptus) is common in the subtidal reef habitat in the project area. Commercial lobster fishermen set traps in the area during the lobster fishing season of October through mid-March and lobster also are fished in the area by SCUBA divers.*

The Corps also notes that California grunion (*Leuresthes tenuis*) spawning, which was a significant concern during the Commission recent review of the SANDAG beach nourishment proposal in San Diego County, occurs in the intertidal area in the vicinity of San Clemente Pier; however the project scheduling (late August/early September through March) is intended to avoid the disposal during the grunion season.

Concerning sensitive bird species, least tern and snowy plover breeding and nesting have not been observed in the project area; the beach is too narrow for plover nesting, and least terns breed further south on Camp Pendleton (primarily at the Santa Margarita River

mouth). The proposed offshore borrow site is within the range of the foraging area for least terns; however the project scheduling would avoid the least tern breeding season.

The project would avoid direct effects on sensitive beach, intertidal, and marine habitats. The consistency determination states:

> ***Figure 3-7*** [Exhibit 6] *shows the construction and equilibrium footprints for the Project in relationship to surfgrass and kelp in the Project area. The sand placement footprint does not include any kelp beds, surfgrass, or rocky intertidal areas. Therefore, no direct impacts to sensitive habitats would occur from the placement of sand on the beach. In addition, the proposed Project would not place anchors for the mono buoy, where the hopper dredge will moor while it discharges sand to the beach, or place the sinker pipeline that will pump the sediment to shore from the hopper dredge on any sensitive habitat. The construction contractor shall avoid placement of anchors or the submerged pipeline onto reef habitat, which could crush attached organisms. The construction contractor shall also avoid side to side movement of the anchors or pipeline as they are placed, which could abrade surfgrass, algae, or attached invertebrates. If a substantial amount of surfgrass or kelp were affected by placement and removal of anchors and pipelines, the impact would be considered significant. These impacts would be avoided and minimized by performing a pre-construction survey to identify anchor and pipeline locations that would avoid sensitive resources. Because most of the surfgrass in the Project area grows on T-Street reef, it is possible to avoid surfgrass by avoiding the reef when laying the pipeline.*

Thus, as stated above, the habitat concerns raised are over where and how the sand moves after its initial placement. The Corps indicates primary littoral drift direction to be southward, which, if it does occur in this manner, should protect the important reef to the north (Mariposa Point (Exhibit 9)). The Corps states:

> *The net movement of beach sands in the Project area is expected to be southerly, but some northerly movement may occasionally occur. Based on monitoring of the SANDAG beach fill project at Oceanside, most sand movement is expected to be toward the south (Appendix D). Therefore, it is unlikely that significant quantities of sand will be transported to the north to the rocky intertidal habitat at Mariposa Point. The equilibrium footprint for the 50 ft Beach Width Alternative indicates that sand will not extend as far upcoast as Mariposa Point (Figure 3-2). Therefore, the proposed action would not be expected to result in the net loss of habitat value of sensitive rocky intertidal habitat, and impacts to rocky intertidal habitat would not be significant.*

The Corps used modeling to predict an equilibrium footprint, and states that the available evidence suggests that surfgrass could withstand temporary burial of up to 2/3 of its blade length. Surfgrass blade lengths average 2-3 ft. The Corps notes:

> *Therefore, the equilibrium footprint of the Project likely would result in a range of impacts between no burial of surfgrass on the larger rocks and partial burial on the smaller boulders. Burial of surfgrass on the outer portions of T-street reef would be minimal. Surfgrass is adapted to partial sand burial, routinely survives seasonal sand burial of part of its blades, and can recover quickly via regrowth if the root system is intact; however, the degree of sand burial surfgrass can withstand is not well documented (SANDAG 2000).*

For a similar large fill project proposed (but not implemented) in the area, which was a 175,000 cu. yd. disposal in San Clemente, the consultants (Coastal Resources Management, June 26, 2000 (CRM 2000)) predicted such a fill would result in a maximum 1 ft. of cover of surfgrass for a 6 month period, which would not exceed 2/3 of blade length. That study predicted:

> *Based on observation of burial of existing offshore surfgrass in the area, CRM (2000) proposed a criterion of sand burial of no more than 2/3 of the blade length for six months or less as a level that surfgrass can withstand, and concluded that burial of less than half the blade lengths for less than six months would not be expected to result in long-term damage (CRM 2000).*

Looking at a more recent laboratory study, the consistency determination acknowledges some burial can cause mortality. The consistency determination states:

> *A recent laboratory study of Phyllospadix scouoleri suggested that short term sand burial may result in shoot mortality, decreased shoot counts, and reduced growth of surfgrass (Craig et al. 2008). The study found that shoot density decreased compared to controls for a burial depth of 0.8 feet (25 cm), but not shallower burial depths. Mean shoot growth rate decreased in all burial treatments. Therefore, the Project may result in some degradation of the shallower portion of the surfgrass habitat, but would not result in a significant loss of surfgrass. For the Project, the sand from the beach fill is predicted to move out of the equilibrium footprint within 6 years.*

Concerning effects on lobsters, the Corps' consistency determination states:

> *In addition to partial burial of surfgrass, offshore movement of sediment may result in filling in some holes and crevices in the shallow subtidal that are used by lobsters. These shallow subtidal reef areas are periodically covered and uncovered by sand naturally (i.e., in the absence of a beach nourishment project). The beach fill from this alternative would have only minimal effects on the*

> *considerable reef area near the end of San Clemente Pier and would not degrade that habitat for lobsters. Temporary degradation of a limited amount of inshore lobster habitat would not be significant.*

Concerning future effects from periodic renourishment, the Corps states:

> *Periodic renourishment at San Clemente would occur approximately every 6 years. The impacts of renourishment to sensitive habitats would be similar to those of initial placement. Effects, if any, are expected to be transitory and within natural variation. Because observations of other beach fill projects have documented that observed effects on sensitive habitats last between six months and two years, maintenance renourishment at a frequency of every 6 years would not be expected to result in permanent degradation of sensitive habitats. Sensitive habitats should be monitored to document any effects that may occur from beach renourishment. If impacts to surfgrass are observed, subsequent nourishment activities will be modified. If long-term impacts still are observed after modifying renourishment, then renourishment would not occur again until impacted surfgrass has recovered or mitigation is implemented.*

Because extensive beach nourishment has occurred, and offshore impacts studied, in San Diego County, for comparison purposes the Corps also looked (in its EIS) at SANDAG's beach nourishment monitoring (further described on pages 31-32 of this report.) The Corps' EIS states:

> *Biological monitoring of sensitive habitats, including rocky intertidal, shallow subtidal reefs, and kelp forests, was conducted following implementation of the SANDAG Regional Beach Sand project, which placed sand on several beaches in San Diego County (AMEC 2005). Beach profile and biological monitoring data indicated a great deal of spatial and temporal variability in sediment transport.*
> …
>
> *Of 18 shallow subtidal reef locations monitored to assess potential impacts of the SANDAG project, only three showed an increase in sediment cover that may have been a result of the project (AMEC 2005). A monitoring site near Batiquitos Lagoon showed increased sedimentation two years following the SANDAG beach fill, suggesting a cause and effect relationship, but the increased sand levels were within variation observed during monitoring of the site before the beach fill. The increase in sediment cover at this site did not appear to have any biological effects because the cover and abundance of indicator species did not change. A monitoring site in North Carlsbad showed an increase in cover following the SANDAG beach fill and an associated decrease in surfgrass cover. However, there were multiple sources of sediment near this site and it is unclear to what extent the observed effects were related to the SANDAG project. The third site that showed a significant increase in sedimentation following the SANDAG beach*

> *fill was at Solana Beach. The SANDAG project was the only apparent source of sediment at this site. The increased sedimentation did not appear to affect surfgrass cover, but shoot density declined, possibly in response to the increased sedimentation.*
>
> *Of the kelp bed sites monitored as part of the SANDAG program, some showed relatively constant sand cover, and some showed an increase in sediment cover following the SANDAG beach fill (AMEC 2005). The sand cover observed at the sites with increased sedimentation was within levels observed during pre-project monitoring, suggesting natural variation. The increases in sand cover did not appear to affect the distribution and abundance pattern of kelp bed indicator species. Giant kelp recruitment and persistence either increased or remained stable during the period following the SANDAG Regional Beach Sand project.*

The EIS concludes:

> *Summary of Significant Unavoidable Impacts:*
>
> *If a substantial amount of surfgrass were lost, impacts may remain significant even with mitigation. Although the beach fill sand would be expected to move out of the equilibrium footprint within 6 years, because models are not precise, it is not clear if surfgrass would recover. If adverse significant impacts to surfgrass are observed from the monitoring, subsequent nourishment activities will be modified to avoid or minimize these impacts as part of adaptive management. If adverse significant impacts still are observed after all reasonable attempts to avoid or minimize impacts have been exhausted, additional renourishment would not occur until impacted surfgrass has recovered or and compensatory mitigation is completed. A consistently successful method to transplant surfgrass has not yet been devised, although recent experiments may provide new options. Potential mitigation, if necessary, is described in the Mitigation Monitoring and Reporting Plan (Appendix B).*

Thus, the Corps accepts the need for continued monitoring to assess impacts, to use adaptive management and modify the project if impacts to surfgrass are observed, and most importantly, that renourishment would not occur until affected surfgrass has recovered or mitigation is implemented. The Corps' monitoring and mitigation measures include:

(1) pre-construction kelp and surfgrass surveys before finalizing anchor, pipeline, and mooring placement;

(2) more detailed monitoring of surfgrass prior to construction to provide baseline for post-construction surveys;

(3) if post-construction surveys cause adverse effects, adaptive management in consultation with resource agencies will be implemented to avoid or minimize effects during future nourishment events;

(4) if rocky reef impacts occur, creation of 1:1 mitigation of rocky reef habitat; and

(5) if surfgrass impacts occur, experimental surfgrass mitigation, and since surfgrass mitigation is not able to be assured, additional kelp reef mitigation in the event the surfgrass mitigation does not succeed.

The EIS notes that the project's mitigation budget is sufficient to cover what it considers a worst case scenario – 1 acre of surfgrass impacts and 1 acre of reef impacts. The T-street reef is 5 acres in size, and the Corps' "best professional judgment" is that 20% of it could be affected. The EIS states:

> *The Project has a mitigation budget that accommodates 1 acre of impacts to surfgrass plus 1 acre of impacts to reef, for a total potential impact to 2 acres of resources as a worst-case scenario. Initial modeling by the Corps shows that there is potential to impact 20 percent of the inshore edge of T-Street reef; and 5 acres of the T-Street reef. Twenty percent of the inshore edge is a reasonably foreseeable estimate of impacts based on a best professional judgment functional habitat evaluation assessment and the coastal engineering model. Both the BPJ FA* [Best Professional Judgment/Functional Assessment] *and the coastal engineering model considered the potential depth in addition to area; however that detail is not in inches, but in feet. A greater impact area would be unlikely, but an additional acre of potential impacts was included in the contingency mitigation budget to account for an unlikely worst-case scenario.*

The Corps' biological monitoring plan (Mitigation and Monitoring Plan (MMRP)) is attached as Exhibit 11. This plan is preliminary; the Corps indicates it will finalize it after conducting more intense pre-construction surveys during the Preconstruction Engineering and Design (PED) phase of the project. The Corps states:

> *The final monitoring plan will be prepared during the pre-construction engineering design (PED) phase of the project. The details of these plans will be finalized in conference with knowledgeable, experienced, and qualified marine ecologists. The monitoring shall be performed by knowledgeable, experienced, and qualified marine biologists. These knowledgeable, experienced, and qualified marine ecologists may come from a variety of various agencies, organizations, institutions, or community centers of practice and expertise, such as academia - University of California, Corps Engineer Research and Development Center (ERDC), NOAA National Marine Fisheries Southwest Fisheries Sciences Center, U.S. Geological Survey (USGS)*

> *Western Ecological Research Center, other federal and state agencies, as well as consulting marine ecologists. CDFG, FWS, and NMFS regulatory resources agency staff will also be involved with the review process.*

The current MMRP outlines:

> *1) a post-construction monitoring program for rocky reef/surfgrass habitat in the San Clemente Pier area to determine if project mitigation would be necessary;*
>
> *2) a preliminary mitigation implementation plan, if mitigation is determined to be necessary; and*
>
> *3) a preliminary mitigation monitoring plan, if mitigation is determined to be necessary.*

The MMRP acknowledges that the Corps has assessed potential impacts based primarily on modeling, and that:

> *Due to the uncertain nature of this modeling because of the multiple variables in the natural environment itself, impacts and mitigation requirements are expected to be unlikely, but currently are unknown. A post construction monitoring plan has been developed to determine if project impacts require mitigation based on comparisons to pre-construction conditions.*

The MMRP suggests triggers for mitigation, but the Corps notes that these too have not been finalized; the Corps states:

> *The following criteria are suggested as potential triggers for mitigation. Actual triggers would be determined in coordination with the resource agencies prior to initiation of post-construction monitoring activities.*
> *1) For random transects: a persistent decrease in surfgrass cover or surfgrass density and an increase in sand cover and/or depth that is statistically significantly different than the controls and the baseline at the 0.05 confidence level (i.e., p-value = 0.05).*
>
> *2) For permanent transects: a persistent 20% decrease in surfgrass cover or surfgrass density coupled with a 20% increase in sand depth and/or cover.*

The MMRP proposes baseline and post-construction monitoring, with the post construction monitoring transects taken annually, for 2 years after completion (four times in the first year, and two times in the second year).

Also, in response to one of the comments below concerning potential overlap between Corps nourishment and City of San Clemente Opportunistic nourishment, the Corps states that no such overlap will occur.

In developing its proposal, the Corps has met with the "resource" agencies (the U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Dept. of Fish and Game, and Environmental Protection Agency) to discuss the Corps' habitat analysis methodology, monitoring, and mitigation components. The resource agencies have expressed a number of concerns during these meetings, in DEIS comments, and through email communications. A July 13, 2011, email communication from the Fish and Wildlife Service summarizes these concerns as follows:

(1) the adequacy of baseline transect surveys and assumption of a worse case impact of up to only 0.81 hectares (ha) [2 acres (ac)] of surfgrass/reef impacts based on these surveys and the fact that the entire 5-ac T-Street Reef could be in the equilibrium footprint in which cross shore sand movement is expected to occur;

(2) the use of only a 1 to 1 mitigation ratio for surf grass impacts given temporal loss and uncertainty of surfgrass restoration;

(3) modifying the project to 10 meter (33 feet) beach width to help minimize potential impacts to surfgrass and reef, and mitigation risks/costs due to the uncertainty regarding surfgrass restoration;

(4) resource agency role in determining the criteria for triggering mitigation;

(5) the adequacy of the proposed $3 million mitigation fund when mitigation costs are estimated to be up to $3.5 million;

(6) potential cumulative impacts from the City's opportunistic beach replenishment program;

(7) potential impacts to the intertidal reef at Mariposa Point and use of Mariposa Point as a control in light of these potential impacts and from the City's opportunistic beach replenishment program;

(8) allowing subsequent beach replenishment before any previous impacts are successfully mitigated.

(9) the provision for only 2 years of monitoring for any necessary reef mitigation, instead of 5 years as for surfgrass mitigation;

(10) the provision for out-of-kind kelp mitigation for surfgrass impacts that could lead to continual loss of surfgrass from subsequent beach replenishment; and

(11) lack of requirement to do surfgrass restoration research in the event of mitigation failure.

On July 26, 2011, the Fish and Wildlife Service sent the Corps its Final Fish and Wildlife Coordination Act Report (CAR), concluding its consultation with the Corps for the project. This report: (1) reiterated the above concerns; (2) agreed with the Corps that least terns and snowy plovers would not be affected; (3) indicated that the resource agencies would continue to be involved in the development of the final monitoring plan and the determination as to the levels and significance of impacts observed by the monitoring; (4) stated that the Corps' current monitoring plan does not fully address the above summarized resource agencies' concerns; and (5) made the following comments and recommendations to address these concerns (a full text of the recommendations can be found in Exhibit 12):

RECOMMENDATIONS

1) Due to "a great deal of uncertainty regarding the ability to mitigate impacts to surfgrass inkind," combined with the fact that the Corps has indicated that a 10-m (33-ft) beach width would "achieve the project purpose of storm damage protection and yield an acceptable benefit-cost ratio for the project," the Corps should limit the project to a 10-m (33-ft) beach width "to help ensure that significant long-term impacts to surfgrass do not occur and to minimize potential mitigation risks/costs."

2) Due to a limited number of baseline survey transects taken, combined with the fact that the entire 5 acres of T-street reef are in the equilibrium footprint, "the MMRP should be revised to assume at least 5 acres of surfgrass/reef impacts to help ensure that adequate funds are budgeted for potential mitigation costs."

3) Rather than only 2 years of monitoring for surfgrass/reef mitigation, "the MMRP should be revised to include at least 5 years of monitoring of surfgrass/ reef mitigation."

4) "The MMRP proposes to mitigate impacts to shallow reef with deep water reef, without sufficient justification as to why it is not feasible to restore shallow reef. … the MMRP should be revised to require impacts to shallow reef be mitigated in-kind, unless the resource agencies concur that this is not feasible and that potential cumulative loss of shallow reef is expected to be minimal."

5) The MMRP "should be revised to require impacts to surfgrass be only mitigated in-kind, unless the resource agencies concur that sufficient research and testing has shown that this is not feasible and potential cumulative loss of surfgrass is expected to be minimal."

6) While the intertidal reef at Mariposa Point is north of the beach replenishment site, and littoral sand movement generally southward, it "is not far enough north of the project site to assume that no impacts will occur." The MMRP "should be revised to include monitoring of the intertidal reef at Mariposa Point and mitigation for any significant long term impacts."

7) Since Mariposa Point itself could be affected, it should not be the only control site. The MMRP "should be revised to include multiple control sites approved by the resource agencies."

8) Mitigation measures should be planned and provided for up-front (prior to or concurrent with project impacts) and supplemented as needed. "This is especially important for surfgrass because of the uncertainties of surfgrass restoration and at least a 2- to 5-year temporal loss of functions between time of impact and restoration success." If not, the MMRP should be revised to include adequate compensation to address temporal losses as agreed to by the resource agencies."

9) The Corps should monitor turbidity at the borrow and disposal site throughout the duration of the project, with up-front resource agency agreement with the turbidity monitoring plan, and with weekly reports submitted to the resource agencies.

10) Subsequent dredging/disposal should not occur if significant impacts to surfgrass/reef resources are documented, "until the resource agencies concur that mitigation for those impacts is successfully completed, or impacted surfgrass or reef has recovered."

11) "After the comprehensive PED phase biological surveys, the Corps should revise the MMRP and receive written concurrence from the resource agencies that it fully addresses mitigation of impacts, criteria for triggering mitigation, success criteria, and monitoring and reporting requirements."

12) The Corps should include adequate budgeted funding to cover mitigation costs as recommended by the resource agencies, and the Corps and City should identify and assure backup contingency funding mechanisms, such as "a letter of credit, endowment account, or other legal mechanism approved by the resource agencies sufficient to guarantee mitigation will be implemented to offset adverse impacts of the project."

The Commission agrees with the resource agency concerns expressed over several uncertainties which make it difficult to predict the project's impacts, including:

(1) the fact that the impact analysis is based on primarily on modeling;
(2) the fact that the wave climate and littoral system in San Clemente is different than in areas where beach nourishment has been studied in San Diego County; and

(3) the acknowledged difficulty in successfully mitigating surfgrass impacts.

Due to these uncertainties, the Commission finds that several measures are needed to assure the project's effects are minimized, adequate monitored, and if impacts occur, adequately mitigated. Compliance with the conditions on pages 6-9 above is needed to assure the monitoring and mitigation measures are adequate to protect, and where impacts occur, mitigate, the project's effects on marine resources, before it can be found consistent with the marine resource policies of the Coastal Act. The recommended conditions would provide for: (1) implementing additional grunion monitoring and protection measures, in the event unforeseen circumstances delayed work into the grunion season; (2) Commission staff review of and concurrence with the final monitoring plans; (3) specification of success criteria to be included in the monitoring plans to assure they will adequately measure impacts; (4) increasing the mitigation ratio if out-of-kind mitigation is implemented (which is triggered if in-kind mitigation is unsuccessful); (5) lengthening the monitoring period from 2 to 5 years; (6) submitting all monitoring reports to the Commission staff; and (7) assuring that subsequent re-nourishments will not be implemented unless and until the Commission staff has reviewed the monitoring and mitigation and agrees the habitats have been adequately restored and/or that the permanent loss of habitat has been adequately mitigated. If, and only if, the Corps were to agree to implement these conditions, the Commission finds that the proposed project could be found consistent with the marine resources, beach nourishment, and dredging and filling policies (Sections 30230, 30231, and 30233) of the Coastal Act.

B. Public Access and Recreation. The Coastal Act provides:

Section 30210. 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.

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: (l) 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.*

San Clemente City and State Beaches rank at the top of California's beaches in terms of both popularity and extent of visitor use (approximately 2 million visitors per year, according to the Corps). In many ways these beaches and surf zones represent quintessential coastal resources. The Corps' statement of Purpose and Need in its consistency determination aligns closely with the goals and objectives of the above Coastal Act policies; the Corps states:

> *The public interest related to the establishment of planning objectives and planning constraints are:*
>
> *1. To reduce the potential for storm damages to the LOSSAN Rail Corridor facilities and operations, located along the beaches of the City of San Clemente;*
> *2. To reduce the potential for storm damages to public beach facilities;*
> *3. To restore the recreation beach along the Pacific Coast of the City of San Clemente;*
> *4. To preserve the nearshore ecosystem that supports commercial lobster, fisherman, and snorkeling activities;*
> *5. To preserve and enhance opportunities for surfing along the San Clemente coast;*
> *6. To improve public access and safety to the recreation beach areas of the City of San Clemente; and*
> *7. To improve public access and safety to the recreation beach areas of the City of San Clemente.*

The consistency determination notes that while relatively stable in recent historical time, the City's beaches have been eroding since the 1990s, which has caused concern both over loss of recreational beach areas, and the need to protect the heavily travelled rail corridor located on the east side of the beach (i.e., the Southern California Regional Rail Authority (SCRRA)) tracks and trackbed. This rail line is both vital for national defense and serves as an important public access and transportation corridor.

While clearly intended to protect and preserve public access and recreation opportunities, the project has the potential for temporary construction period adverse effects such as reduction of recreational quality from noise, turbidity, and air emissions, reduction of public parking from equipment staging, direct blocking of access by pipelines and disposal/beach moving equipment, and modifications to popular surf breaks that could affect surfing. The Corps' consistency determination notes that at any one time, 300 ft.

of beach would be inaccessible due to the discharge pipeline and berms, and 350 ft. intermittent access restrictions would be put in place on either side of the discharge zone, to allow maneuvering heavy equipment. The consistency determination states:

> *Only portions of the beach would be closed during construction. As portions of the beach are completed, the construction zone would be moved down the beach. Construction is typically performed in sections. Each section is closed off with no horizontal (alongshore) access through the area. Vertical (cross shore) access is allowed along the section boundaries. To the maximum extent practicable, USACE specifies the public access in the pre-construction, engineering and design (PED) Phase.* ***At each access point, only a small fraction of that entry point would be closed or pedestrian traffic detoured around the construction. Access to the San Clemente Pier would not be closed.*** *If necessary, USACE can specify additional access be provided, nonetheless it would have to coordinated with the City of San Clemente. Given the short-term period of construction (up to four months), impacts would be considered temporary and not significant.* [Emphasis in original]

The Commission agrees that the short-term temporary impacts to public access would be minor and would be offset by the long term benefits to access and recreation from beach widening.

Concerning effects on surfing, the consistency determination states:

> *Some of the sand placed on San Clemente Beach to widen the beach by 50 ft would be carried offshore. The T-Street surfing location is within the alongshore extent of the proposed beach nourishment. The reef at T-Street is a seabed perturbation such that its elevation, shape, and orientation to incoming waves are a unique combination that tends to shoal waves to a peak with a resulting plunging "left" (from the surfer's perspective, wave breaks from right to left) and "right" (from the surfer's perspective, wave breaks from left to right), which results in a variety of waves and favorable surfing characteristics. The configuration and orientation of the reef to incoming waves create consistent surfing waves, making T-Street a popular break in the south Orange County coastal area. High steepness waves result in plunging breakers, which are associated with beaches with steeper gradients. Plunging breakers descend very quickly and with substantial force; noted for a "lip," or shoreward facing edge, at the top of the wave. With the proper set of conditions, the plunging lip can create a "tube" or barrel." The consistent steepness of the wave coupled with the structure of the lip enables surfers to consistently reach higher speeds and perform more maneuvers. The surfing extends from the beach to about 600 ft (200 m) offshore and typically is in water depths less than 15 ft (5 m). The surfing area is closer to the beach than the actual reef location, as incoming waves require time and space to be transformed by the reef bathymetry.*

> *Most of the sand from the Project would settle in the inshore portion of the reef and would not affect the refractive abilities of the reef or the characteristics of the "take-off." However, as the wave encounters the straightened bathymetry inshore, it may "close-out," resulting in a shorter ride in the realm of seconds. This condition would be temporary and would lessen as the sand moves off the reef steadily over the course of 6 years at a long-term erosion rate of 13 ft (4 m) per year. Although impacts due to the wider beach may occur, an aerial photographs of San Clemente Beach at the Pier (**Figure 4-4**) indicates that the beach width in 1994 was approximately 55 ft (17 m) wide and no records have been found that indicate surfing ceased within the Project area during that time.*
>
> *Because the shorter rides are a temporary condition, impacts to surfing would not be significant. The wider beach would improve the recreational experience for sunbathers, walkers/joggers, and picnickers. More beach area would be available for these activities construction areas, including the beach and nearshore zone. The effects on public safety while the beach fill Project is reaching equilibrium would be a significant, but temporary, impact.*

The Corps has agreed to monitoring for impacts to surfing. This monitoring would include direct surveys of the beach and seabed morphology to determine changes in beach and seabed morphology, define the sediment transport patterns at the shoreline, and ultimately identify the short term and long term beach erosion processes. The survey methods would consist of topographic measurements, bathymetric measurements, surf quality observations, and video stereo photogrammetric methods. Monitoring would begin one year before construction (for the surf quality observations) and continue for the 50- year period of the project. The monitoring would measure beach widths, topography and bathymetry, surf quality (surfability). The Corps summarizes this last effort as follows (further described in full in Exhibit 15):

> *Surfing and high quality surfable waves are an increasingly valuable resource. An innovative method pioneered by the Los Angeles District has been developed to quantify surf quality (surfability). A trained observer visually estimates the breaking wave climate at the shoreline twice daily, typically at first light and at 1300; the times are approximate. Wave characteristics measured included height, period, and direction. Wave heights from the crest to the trough are visually estimated to the nearest 1 foot. Waves are observed for a period of 5-10 minutes and the minimum, average, and maximum wave heights are estimated. Wave period is based on an average of 30 waves over the 5-10 minute observation period and is reported to the nearest 1 second. Wave directions are reported relative to the beach normal and estimated to the nearest 5 degrees. Wave directions are recorded as normal (0-10 degrees); slightly from the left (or right) (10-25 degrees); significantly from the left (or right) (greater than 25 degrees). Surf quality is also expressed in common surf language by the observer. Visual observations are supplemented with video recordings.*

The Commission finds that several conditions are needed to minimize, and assure adequate monitoring of, the project's public access and recreation impacts. The conditions (pages 6-9) providing for Commission staff review of the final staging and surfing monitoring plans, including several details needed to reduce effects and improve monitoring validity (Conditions 4 and 5). The Commission concludes that if the Corps agrees to modify the project consistent with these conditions, the project could be found consistent with the public access and recreation and surfing policies (Sections 30210-30213, and 30220) of the Coastal Act.

C. 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 impacts can occur at either the offshore borrow site or the onshore replenishment, due to fuel spill and contaminant releases, or excessive turbidity from dredging or disposal. The Corps proposes to minimize these effects through adherence to a Stormwater Pollution Prevention Plan (SWPPP) and an Oil Spill Prevention and Response Plan (OSPRP).

The Commission has generally considered open ocean turbidity from beach nourishment projects, with their predominantly large grain sizes, to be minor. In its recent SANDAG findings, the Commission noted:

> *Monitoring data from previous California beach nourishment projects have found concentrations within the plumes to be no higher than that which occurs naturally in nearshore waters under higher wave or storm conditions. Plumes from dredging and sand placement of this project are not expected to have a significant impact.*

To address fuel and other equipment spill concerns, and turbidity concerns, the Corps proposes the following monitoring and mitigation measures to protect water quality:

> ***MM-WR-50-1.1:*** *A SWPPP and an OSPRP shall be prepared for all construction activities. These plans shall specify specific measures that shall be taken during dredging and beach construction to avoid introducing contaminants to the ocean via leaks and spills. All measures shall be adhered to during Project construction.*
>
> ***MM-WR-50-1.2:*** *Turbidity shall be monitored during dredging. If a visible turbidity plume is observed beyond the immediate dredging area, dredging activities shall be modified (e.g., decrease the rate of dredging, move to a new dredge location) until the turbidity plume disperses. Turbidity also shall be monitored during beach fill operations. If significant turbidity (i.e., a visible turbidity plume beyond the surf zone or rip current area) is observed, beach fill operations shall be modified (e.g., by slowing the rate of fill) until the turbidity plume disperses.*

Construction equipment used for the project has the potential to contaminate the beach area from minor spills and leaks from equipment. The Commission's Water Quality Unit reviewed the proposed measures. The Commission is adopting Conditions 2, 6, and 7 (pages 6-9) to address the need for the above plans to be submitted for review by the Executive Director, and to assure that water quality impacts are minimized through, among other means, prohibiting the storage of construction material in the surf zone, washing vehicles on the beach, or refueling or fuel storage on the beach, and where practicable, providing for contractor use of biodegradable (e.g., vegetable oil-based) lubricants and hydraulic fluids, and/or electric or natural gas powered equipment. Thus, if the Corps were to agree to implement the conditions, the Commission concludes that the project would be consistent with the water quality policy (Section 30231) of the Coastal Act.

D. <u>Related Commission Action</u>. In Consistency Certification CC-033-03 (Southern California Regional Rail Authority ((SCRRA)), the Rail Authority was proposing the replacement of rocks forming the existing railroad bed for the rail line traversing the inland edge of San Clemente Beach, in four areas where erosion was threatening the tracks. The Commission found it was necessary to protect the trackbed; however the Commission urged the rail authority, in looking at long term needs, to "Participate in studies currently underway by the Army Corps of Engineers to evaluate sand replenishment and other potential methods for future protection of public and private properties within San Clemente." In concurring with SCRRA's consistency certification, in June 2003, the Commission found:

> *The Commission suspects that an adequately engineered structure would have substantially less maintenance requirements and provide better protection for the railroad tracks. Alternatively, it may be feasible to replace the riprap with sand, as part of a regional beach nourishment project.*

The Commission notes that the U.S. Army Corps of Engineers is investigating shoreline erosion issues in San Clemente. It is working with the SCRRA, the City of San Clemente, and Orange County to analyze the erosion problem and various solutions. The Commission believes that the Corps is considering beach replenishment as one of its alternatives to the erosion problem in this area. However, the Corps is in the early stages of its investigation and has not determined if there is a federal interest for a project or if it is feasible.

…

In addition, the SCRRA has agreed to investigate long-term projects such as beach nourishment or engineered revetment as methods to address erosion problems in this area while reducing the maintenance needs of the existing structure. With these modifications, the SCRRA will reduce the long-term cumulative impacts on sand supply from its regular maintenance activities.

In conclusion, the Commission finds that the proposed project is necessary to protect an existing structure threatened by erosion. Additionally, the Commission finds that the applicant will mitigate for impacts to sand supply by developing a short-term and long-term plan to address cumulative impacts associated with repeated maintenance activities. Therefore, the Commission finds that the project, as modified, is consistent with the shoreline structure policy of the CCMP, specifically Section 30235 of the Coastal Act.

In reviewing the City of San Clemente's CDP application for its Opportunistic Nourishment Program (CDP No. 5-042-142), in December 2004 the Commission approved a 5-year permit for opportunistic beach replenishment at four receiver sites. The Commission's permit conditions required:

1) local public hearings for every sand replenishment project,
2) preliminary pre-construction monitoring of surfgrass resources,
3) a prohibition on construction during summer holiday weekends, and a limit on the number of beaches at which work can occur simultaneously to two,
4) a requirement that an on-site debris manager be present at all nourishment projects,
5) water quality BMPs to be incorporated into every project,
6) affirmative approval of the Executive Director for any future beach nourishment projects approved under this permit, evidence of Army Corps of Engineers approval, and assumption of risk,
7) monitoring of recreational and access impacts associated with individual beach replenishment projects, and
8) a requirement that any biological impacts be mitigated.

To date, the permit has only been used once; this use consisted of a 5,000 cu. yd. disposal of sand taken from the Santa Ana River and placed at North Beach (at the north end of San Clemente, seaward of Avenida Pico and El Camino Real). The only adverse effect documented by the post-construction monitoring report was "dissatisfaction of sand quality by volleyball players." Offshore biological effects (effects on reef habitat, surfgrass, and kelp) were minor; the monitoring report states: … sediments did not bury any reef habitat, nor appeared to adversely affect the cover of marine plants and organisms." The fill occurred in the summer; however grunions, although present in the area, were not adversely affected. A longer term (one year post-construction) monitoring report confirmed a lack of significant biological effects, although it must be noted that one of the reasons cited for the lack of reef and surfgrass effects was the small size of the project (5000 cu. yds.) and its location. The report concluded, among other things (Exhibit 14):

> *A lack of sediment-related effects may also be a function of the volume of beach fill that actually eroded off the shoreline. The sand was placed above the Man Higher High Water (MHHW) line to avoid impacting grunion eggs that had been recently spawned, and thus was located above the majority of wave action. It is therefore unlikely that a large portion of the beach fill would have been entrained into the longshore current within the time frame of the post-nourishment subtidal marine biological surveys ….*

In 2009 the Commission approved a subsequent immaterial amendment to the CDP to extend this permit for an additional five years (CDP 5-02-142-A1).

Initially in 2000, and subsequently in 2011, the Commission has twice approved the countywide San Diego County beach nourishment program conducted by the San Diego Association of Governments (SANDAG Regional Beach Sand Project (RBSP) I and II - CDPs 6-00-038 (with several amendments) and 6-11-018). The permit conditions for both projects required, among other things, monitoring of recreational (including surfing) and biological impacts monitoring. Under the first of these permits, SANDAG placed approximately two million cu. yds. of sand on 12 San Diego County Beaches (RBSP I), completed in the Spring and Summer of 2001. The Commission's findings on RBSP II noted:

> *Extensive monitoring was completed in association with RBSP I and found no significant impacts to biological resources. The Commission also did not receive any adverse comments in regard to public access during or following construction of RBSP I.*

The second of these permits (RBSP II) involved placing 2.3 million cu. yds. on 10 San Diego County Beaches. During the Commission's review of this permit the paramount issue of concern appeared to be grunion protection and monitoring, and the Commission adopted an extensive set of conditions and criteria to monitor and protect grunions. The

Commission also adopted conditions requiring beach sand monitoring, biological monitoring, surf break monitoring, Executive Director review and approval of the Final Monitoring Plan, and of final Staging Plans, Lagoon monitoring and mitigation, and applicant assumption of risk. The permit condition addressing grunion monitoring is attached as Exhibit 13.

V. SUBSTANTIVE FILE DOCUMENTS:

1. U.S. Army Corps of Engineers Consistency Determination, June 7, 2011.
2. U.S. Fish and Wildlife Service, Final Fish and Wildlife Coordination Act Report (CAR), July 26, 2011.
3. Project EIS/EIR: Joint Environmental Impact Statement/Environmental Impact Report, San Clemente Shoreline Protection Project, San Clemente, CA, Draft EIS/R, July 2010, Volumes I & II, Portions of Final EIS/EIR – Response to Comments, and revised Chapter 5.4 (Biological Resources), May 2011.
4. EIS/EIR Appendix - Coastal Engineering Appendix.
5. Updated Monitoring, Mitigation, and Reporting Plan (MMRP) .
6. Consistency Certification CC-033-03 Southern California Regional Rail Authority (SCRRA) (Replacement of rock to protect railroad).
7. CCC CDPs 6-11-018 and 6-00-038 (and amendments A1 to A3) (SANDAG Beach Nourishment).
8. CCC CDP 5-042-142 (City of and San Clemente, Opportunistic Beach Nourishment Program).
9. San Clemente Opportunistic Beach Nourishment Program, Monitoring report for Project Number One at North Beach, 30 Days Post Construction, Mofffat & Nichol, Summer 2005.
10. Appendix D to the SANDAG Regional Beach Sand Project EIR/EA, Evaluation of Impacts to Marine Resources and Water Quality from Dredging of Sands from Offshore Borrow Sites and Beach Replenishment at Oceanside, Carlsbad, Leucadia, Encinitas, Cardiff, Solana Beach, Del Mar, Torrey Pines, Mission Beach, and Imperial Beach, CA, March 2000.

Figure 1.1-1 Vicinity Map

Exhibit 1
CD-029-11

Figure 1.1-2 Location Map

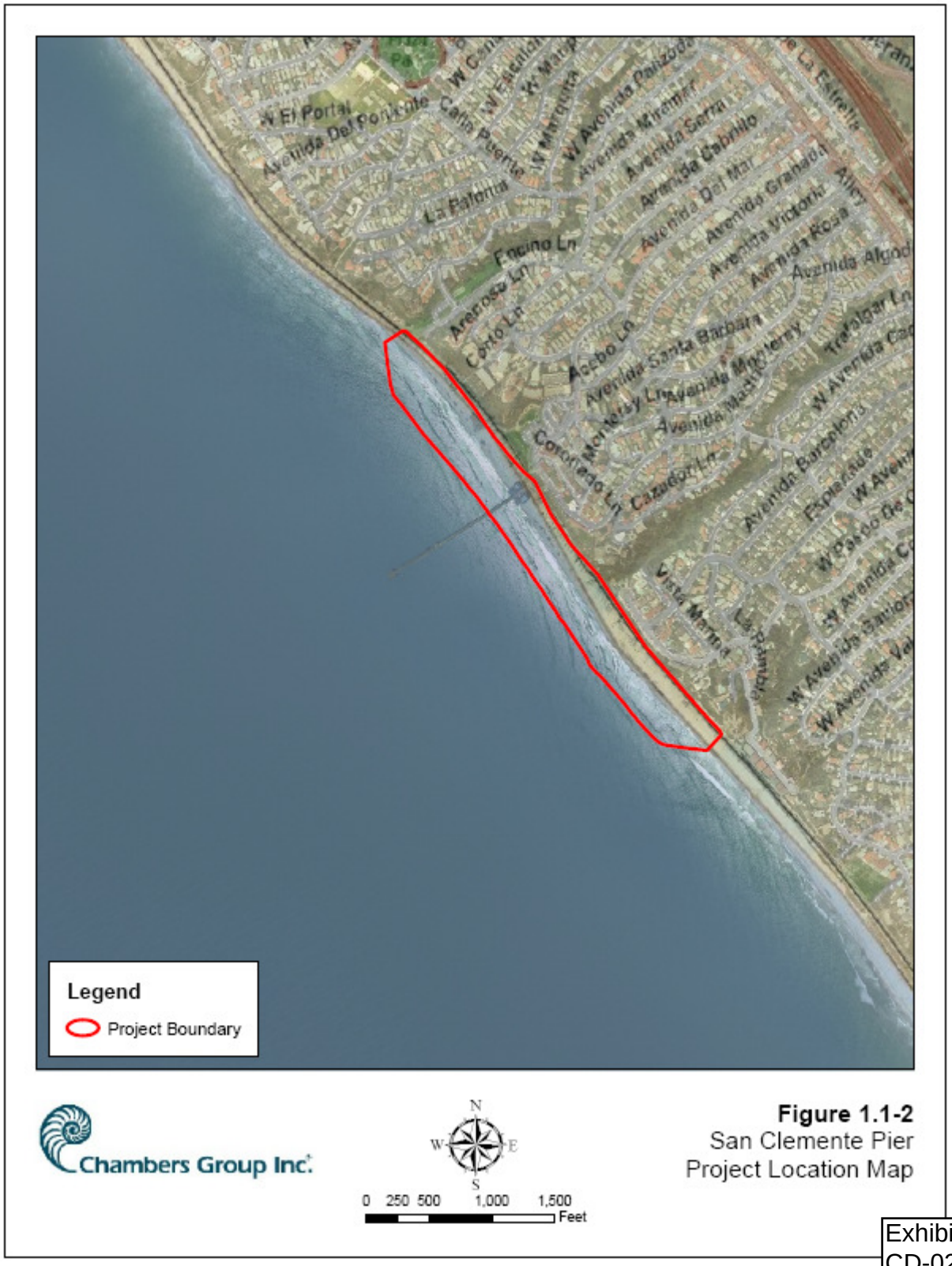

Exhibit 2
CD-029-11

Figure 3.4-1 – Oceanside Borrow Site

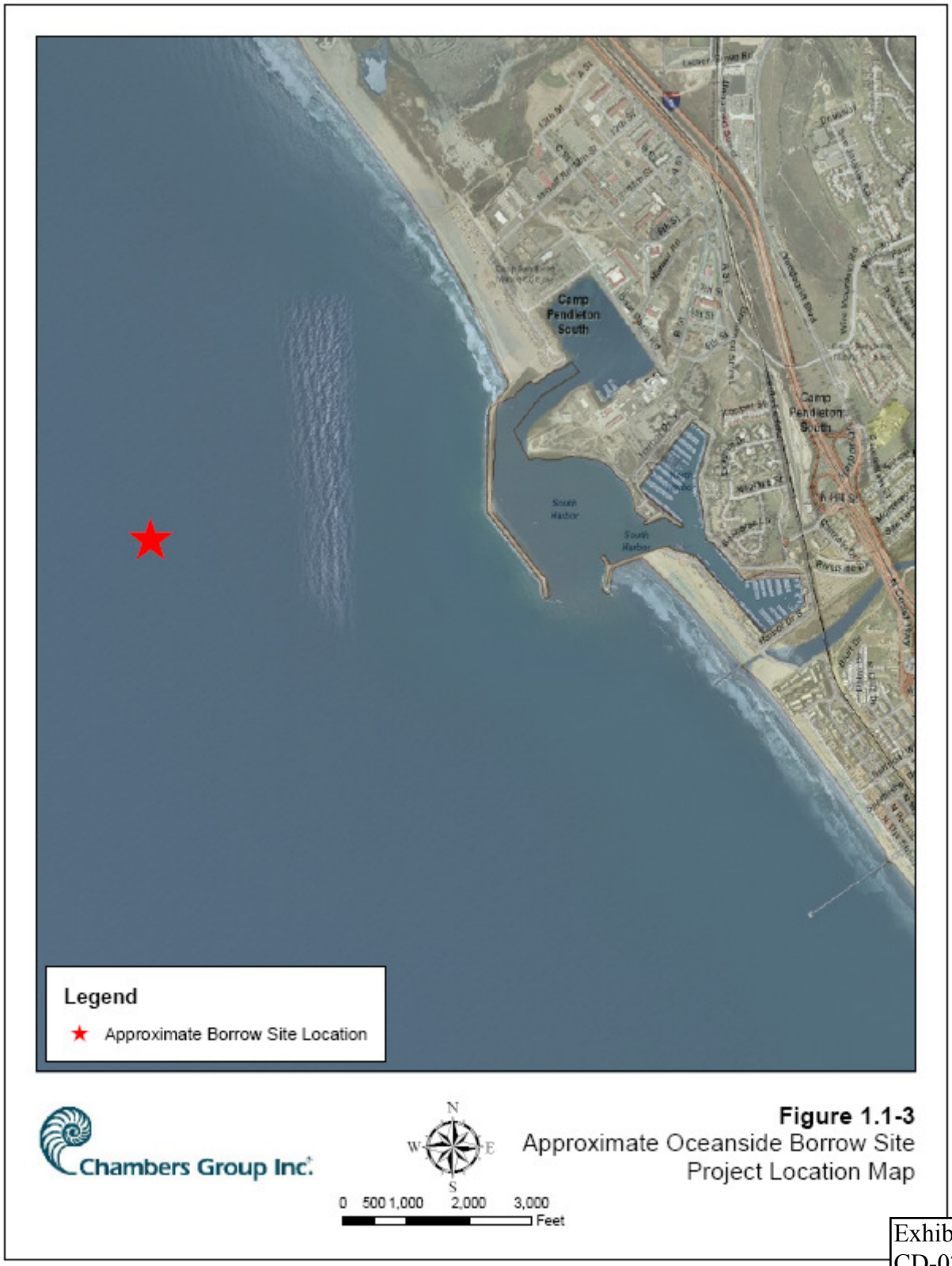

Exhibit 3
CD-029-11

Figure 3.4-2 Plan View of 50 ft (15 m) Beach Width Alternative

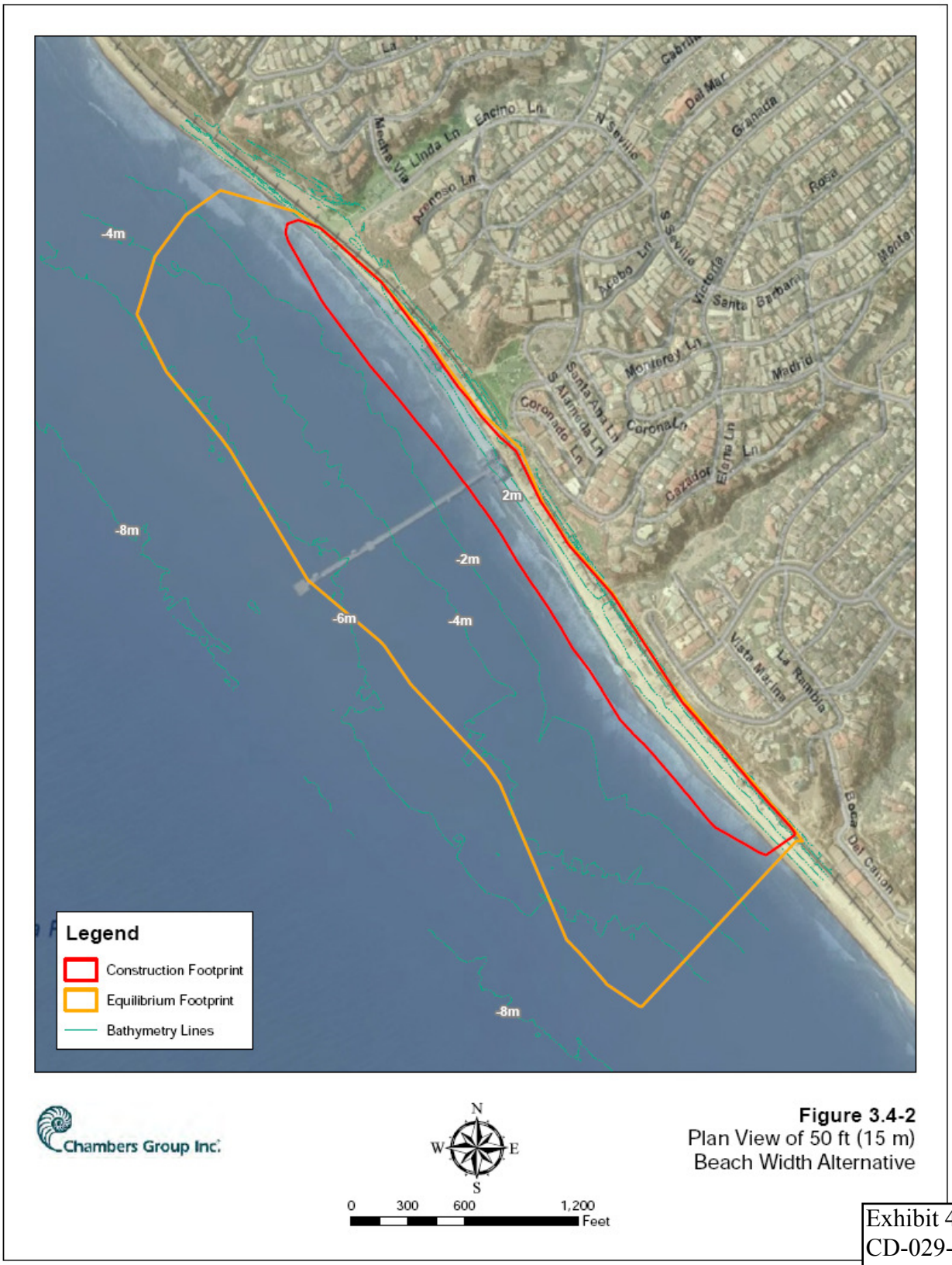

Exhibit 4
CD-029-11

Figure 3.4-4 Beach Access and Staging Areas

3.4.2.4 Public Access

For the beach fill operation, up to 300 ft (91 m) of beach would be inaccessible to the public around the discharge pipeline and berms. In addition, there would be intermittent restrictions on public access for approximately 350 ft (107 m) on either side of this discharge zone. This space would be needed for maneuvering heavy equipment during construction of the temporary berms.

3.4.2.5 Future Project Beach Profile Monitoring

Long-term shoreline erosional processes create damages through long-term profile translation landward and the increasing potential for wave related damages. The landward advancing shoreline reduces the beach width available for storm damage protection thereby increasing the probability of wave related damages to facilities and structures. Long-term beach erosion also results in the gradual reduction of the beach surface area available for recreation. The peak erosion rate is –0.7 ft/yr (–0.21 m/yr), the maximum erosion rate is -1.5 ft/yr (–0.46 m/yr), and the maximum accretion rate is +1.24 ft/yr (+0.38 m/yr).

The purpose of this monitoring is to allow the timing and the detailed design of the periodic nourishment to be optimized. Surveying of the beach and seabed morphology is paramount to the monitoring efforts. Changes in beach and seabed morphology will define the sediment transport patterns at the shoreline and ultimately the short term and long term beach erosion processes. Alongshore transects will be crucial to determine the effects, if any, of the proposed Project on updrift and/or downdrift shorelines. The monitoring period will be for the 50-year

Exhibit 6
CD-029-11

Figure 4.4-2 Surfgrass Survey

Figure 4.4-2
Surfgrass Survey

Chambers Group Inc.

Image Source: Aerials Express San Diego, April 2007

Exhibit 7
CD-029-11

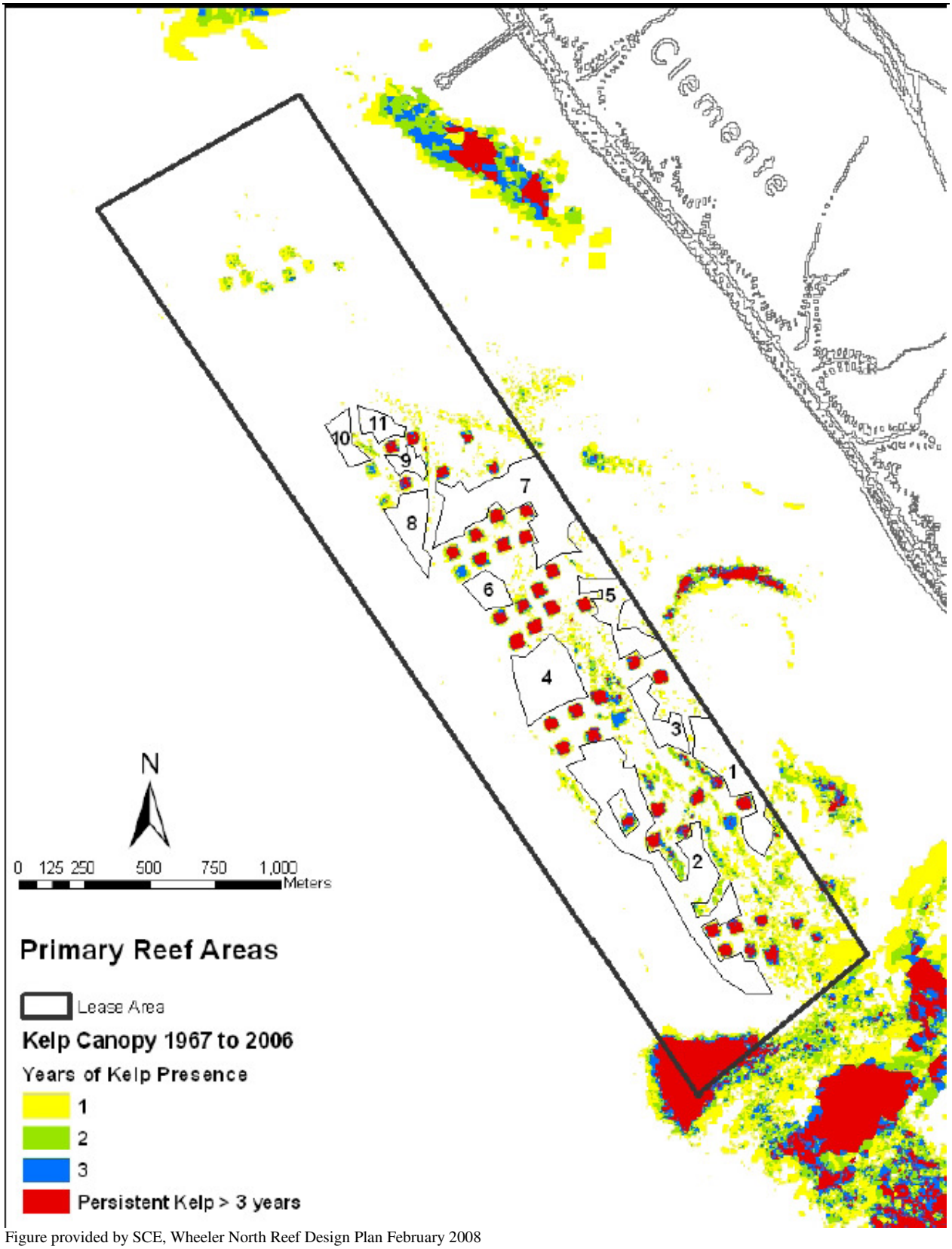

Figure provided by SCE, Wheeler North Reef Design Plan February 2008

Figure 4.4-1 Historic Kelp Canopy and Reef Map

Exhibit 8
CD-029-11

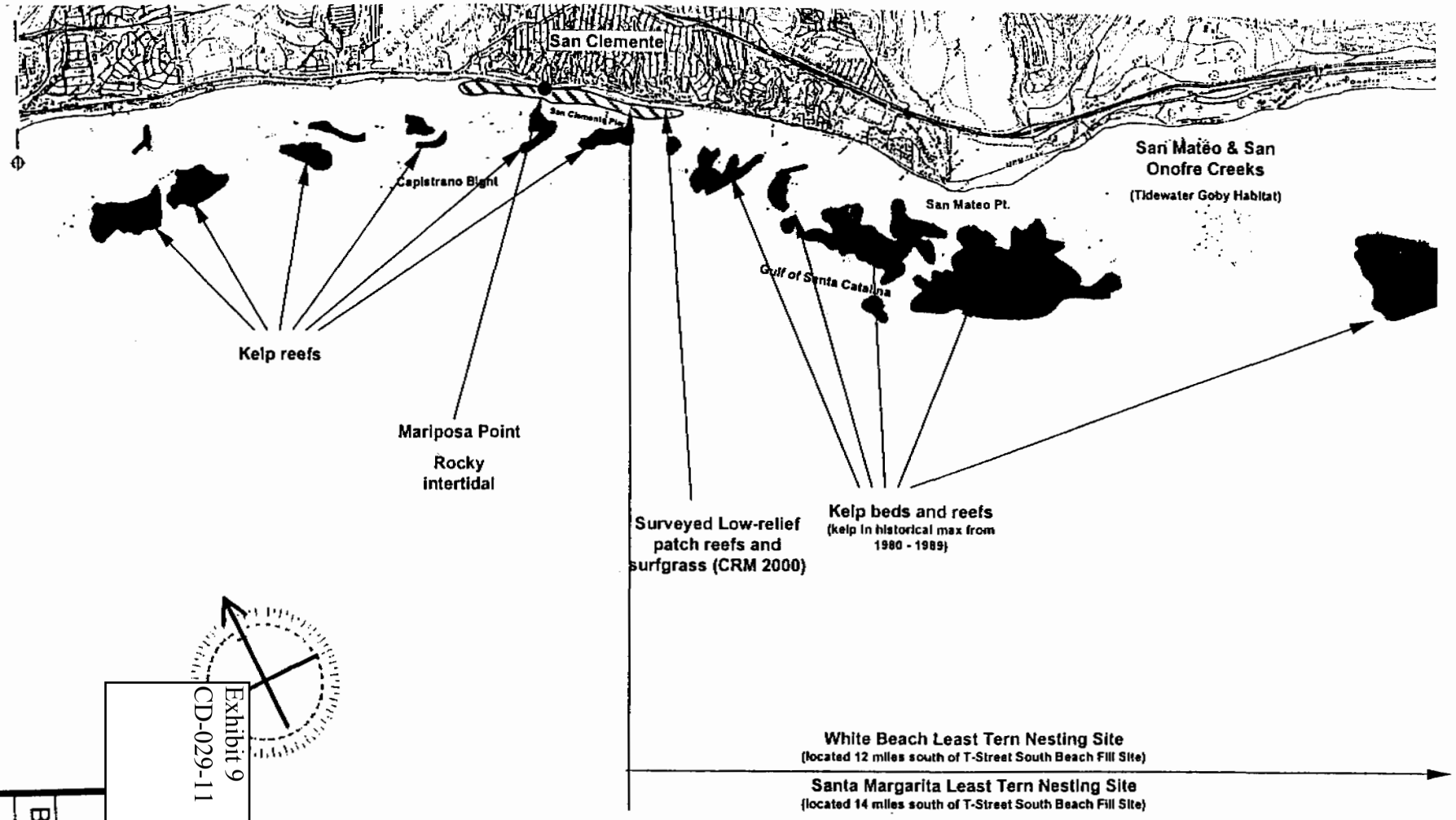

Exhibit 9
CD-029-11

5-02-142

Biological Resources Map

California Coastal Commission

ch Replenishment Program

Biological Resources Map

Figure 2

Figure 3.4-3 Plan View of 115 ft (35 m) Beach Width Alternative

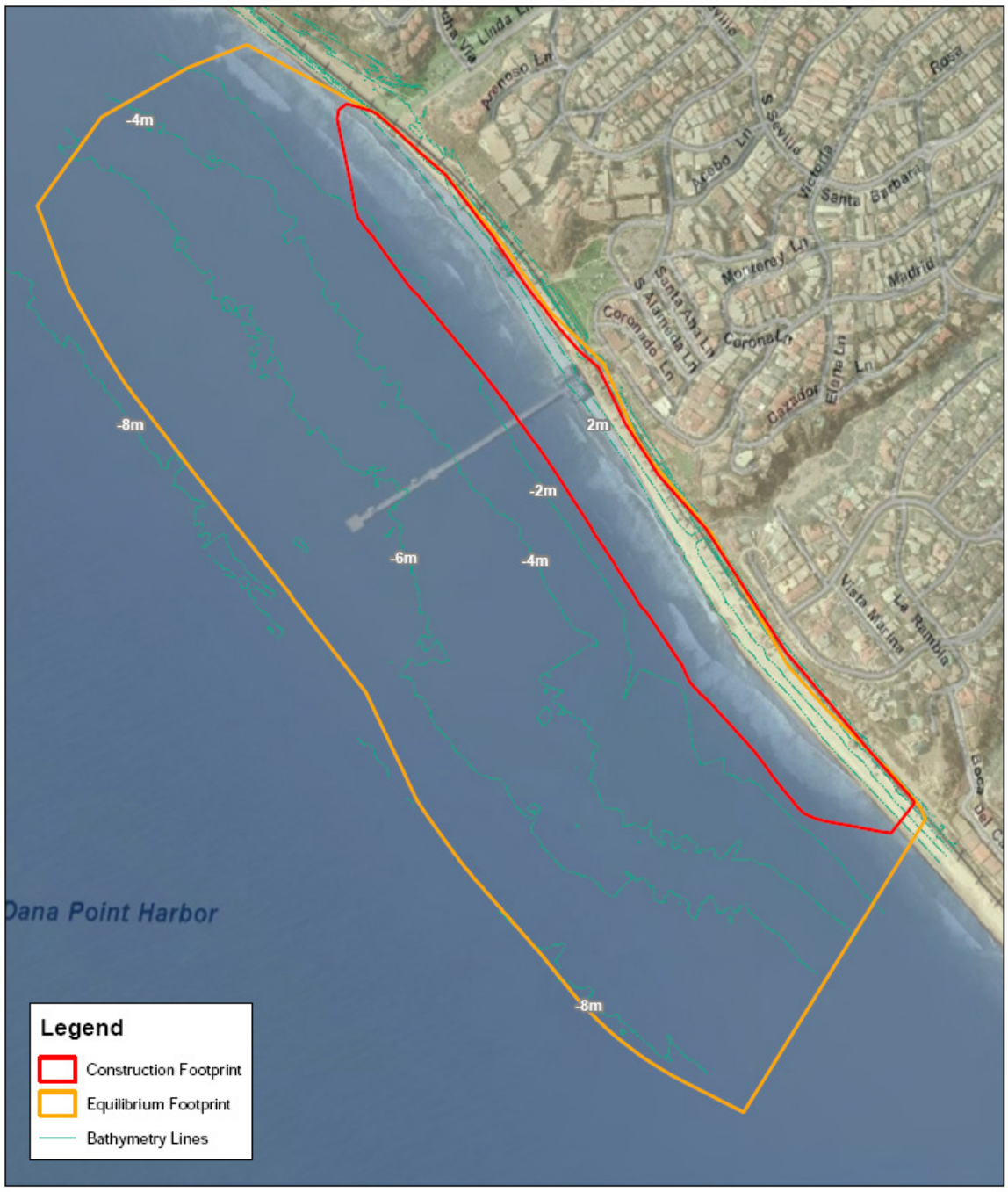

Figure 3.4-3
Plan View of 115 ft (35 m)
Beach Width Alternative

Exhibit 10
CD-029-11

Biological Resources Monitoring Plan

Rocky Reef/Surfgrass Habitat

This appendix outlines 1) a post-construction monitoring program for rocky reef/surfgrass habitat in the San Clemente Pier area to determine if project mitigation would be necessary; 2) a preliminary mitigation implementation plan, if mitigation is determined to be necessary; and 3) a preliminary mitigation monitoring plan, if mitigation is determined to be necessary. The details of these plans will be finalized when a contractor has been selected to perform the monitoring and mitigation. The monitoring shall be performed by qualified marine biologists.

Pre- and Post-Construction Monitoring Plan

The Proposed Project has been designed to avoid or minimize impacts to sensitive biological resources to the maximum extent practicable. Currently, potential project impacts have been identified using a conservative coastal engineering model. Due to the uncertain nature of this modeling because of the multiple variables in the natural environment itself, impacts and mitigation requirements are expected to be unlikely, but currently are unknown. A post-construction monitoring plan has been developed to determine if project impacts require mitigation based on comparisons to pre-construction conditions.

Mitigation would be triggered only if certain conditions occur during the monitoring period and persist through the two year post-construction monitoring period, as there may be transitory effects and subsequent recovery that would not be apparent in a shorter period of time.
The following criteria are suggested as potential triggers for mitigation. Actual triggers would be determined in coordination with the resource agencies prior to initiation of post-construction monitoring activities.

1) For random transects: a persistent decrease in surfgrass cover or surfgrass density and an increase in sand cover and/or depth that is statistically significantly different than the controls and the baseline at the 0.05 confidence level (i.e., p-value = 0.05).
2) For permanent transects: a persistent 20% decrease in surfgrass cover or surfgrass density coupled with a 20% increase in sand depth and/or cover.

Proposed Pre- and Post-Construction Monitoring Activities

Transects shall be established in the rocky reef area containing the surfgrass bed on T-street (Project area) and in a control area of similar depth upcoast of the beach fill near Mariposa Point. The transects may be either permanent transects, random transects, or a combination of both. For random transects, a sufficient number should be conducted to detect a statistically significant difference in the parameters being measured. Transects should cover, at a minimum, the inshore portion, middle, and offshore portion of the reef. The same number of transects should be established in the control area as in the T-street reef area and the transects should be at similar depths. On each transect, the following parameters should be monitored at a minimum: 1) surfgrass density (i.e., number of shoots per square meter), 2) percent cover of surfgrass, sand,

and rock, and 3) sand depth. The line intercept method is recommended for measuring percent cover and sand depth.

Transects should be monitored at the following intervals:

Pre-project monitoring (two years previous to beach nourishment):

- Once within winter/spring
- Once within summer/fall

Pre-project baseline monitoring (one year previous to beach nourishment):

- within one month prior to completion
- 3 months prior to completion
- 6 months prior to completion
- 1 year prior to completion

Post-construction:

Year One

- within one month after completion
- 3 months after completion
- 6 months after completion
- 1 year after completion

Year Two

- Once within winter/spring
- Once within summer/fall

Biological resources within the project area identified as potentially being impacted include surfgrass patches and rocky reef habitat at T-Street. Because a survey was not conducted to delineate T-Street reef, the general area of the T-Street reef was based on the outer extent of mapped surfgrass locations (approximately 5 acres). Actual delineation of the T-Street reef will need to be identified during the pre-construction survey. Potential project impacts to these resources were based on modeling that indicates sand movement may extend to the offshore edge of the reef; however, sand at the offshore edge of the reef would be thin and not significant. Potential burial of the inshore edge of T-Street reef is uncertain, but if it were to occur, it would be expected to occur in the approximately 20 percent inshore edge of the general T-Street reef area. If significant impacts to these biological resources are observed, renourishment events would be modified to avoid or minimize impacts to the extent practicable. If impacts to surfgrass and reef habitat still persist and are determined to be caused by the Project, compensatory mitigation shall be implemented.

Pre- and Post-Construction Monitoring Costs

1. Pre-construction Monitoring

This cost assumes that permanent transects will be established. One day is allotted to install the markers and two days to conduct the survey. This survey is assumed to occur within one year prior to construction activities.

a. Pre-construction Monitoring:
(two years prior to beach nourishment):
- Once within winter/spring; Once within summer/fall: $25,500

b. Pre-construction Baseline Monitoring:
(one year prior to beach nourishment):
- 4 events (one month, 3 months, 6 months, 1 year) $60,000

c. Pre-construction Report (2 years prior and 1 years prior) $ 5,000
Subtotal ***$90,500***

2. Post-Construction Monitoring

This cost assumes that permanent transects will be established. One day is allotted to install or re-install the markers and two days to conduct the survey.

a. Year One
- 4 events (one month, 3 months, 6 months, 1 year): $ 60,000

b. Year Two
- Once within winter/spring; Once within summer/fall: $ 30,000

c. Post-construction Report (Years One and Two) $ 5,000
Subtotal ***$ 95,000***

Compensatory Mitigation

If compensatory mitigation were required based on results of the post-construction monitoring, it would consist of construction of a shallow rocky reef in conjunction with surfgrass transplant, as described below. Compensatory mitigation would be implemented in the Project area at a site to be determined in coordination with NOAA Fisheries and CDFG. The rocky reef will be functionally replaced with equivalent amounts of rocky reef habitat.

Although several studies currently are being conducted to successfully transplant surfgrass and may show potential for success, to date success rates have not been consistent and studies are on-going. Due to the absence of an established, successful method for mitigation of loss of surfgrass itself, proposed mitigation currently is focused upon restoration of the rocky reef that surfgrass currently uses as habitat. However, as previously described, if it is determined that surfgrass has been affected by the Project and a change is shown not to be due to natural variation, a one-time experimental surfgrass transplant shall be implemented in addition to the construction of a shallow rocky reef. Currently, surfgrass transplant success is much higher for subtidal than for intertidal conditions and, therefore, surfgrass mitigation efforts will focus on subtidal transplants only. A portion of the mitigation reef would have to be built shallow enough to accommodate surfgrass. Transplanting sprigs or plants require a donor bed for plant material. Studies have shown that surfgrass is sensitive to losses from harvesting plants for transplant purposes. To avoid harvesting effects to the subject surfgrass bed, donor material will be taken from a larger area of surfgrass and harvests will be taken from the interior of the bed to avoid edge effects.

The information gathered from this one-time experimental surfgrass transplant will provide information towards achieving successful surfgrass restoration. As stated previously, this mitigation effort will be based on the results of monitoring conducted before and after sand placement. The Corps will coordinate these efforts with the resource agencies.

Mitigation Installation/Implementation Costs

Implementation of a rocky reef currently is estimated at $1.8 million.

Mitigation Monitoring Program

Similar to the Post-Construction Monitoring Program, transects shall be established in the rocky reef area containing the surfgrass bed on the mitigation reef and in a reference site (control area) of similar depth upcoast near Mariposa Point. The transects may either be permanent transects, random transects, or a combination of both. For random transects, a sufficient number should be conducted to detect a statistically significant difference in the parameters being measured. Transects should cover, at a minimum, the inshore portion, middle, and offshore portion of the reef. The same number of transects should be established in the control area as in the T-street reef area and transects should be at similar depths. On each transect, the following parameters should be monitored at a minimum: 1) surfgrass density (i.e., number of shoots per square meter), 2) percent cover of surfgrass, sand, and rock, 3) sand depth, and 4) identification and quantity of flora and fauna. The line intercept method is recommended for measuring percent cover and sand depth.

Transects should be monitored at the following intervals:

Post-mitigation implementation:

Year One
- within one month after completion
- 3 months after completion
- 6 months after completion
- 1 year after completion

Year Two
- Once within winter/spring
- Once within summer/fall

Success Criteria

Due to the inconsistent success rates of surfgrass restoration efforts, for the purposes of this surfgrass mitigation effort, any survival of surfgrass transplanted onto the mitigation reef would be considered successful. However, as indicated above, this surfgrass mitigation effort is a one-time experimental surfgrass transplant only. Performance will be monitored based on the parameters listed above and the data then will be used to identify where the transplant method could be modified to improve success. No additional transplant efforts will be conducted.

Success criteria for the mitigation reef itself would include no complete permanent burial of the reef. Because of the predominantly sandy bottom environment in the project area, placement of the rocky reef would be considered successful if a characteristic invertebrate and fish community were to become established. Due to the nature of the mitigation proposed, no adaptive management is required.

Mitigation Monitoring Costs

1. Mitigation Monitoring (Only if rocky reef is implemented)	
a. Year One	$60,000
○ after implementation - 4 events (one month, 3 months, 6 months, 1 year)	
b. Year Two	$30,000
○ 2 events (once within winter/spring; once within summer/fall)	
c. Annual Report Years One and Two	$5,000
Subtotal	***$95,000***
Total Pre- and Post-Construction, and Mitigation Monitoring Costs	***$280,500***

July 26, 2011, U.S. Fish and Wildlife Service, Final Fish and Wildlife Coordination Act Report (CAR) recommendations:

RECOMMENDATIONS

The FWCA states that "...wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development projects through the effectual and harmonious planning, development, maintenance, and coordination of wildlife conservation...." (16 U.S.C. 661). The revised MMRP above does not fully address the resource agencies' comments and concerns. Incorporation of the following recommendations would address the resource agencies' comments and concerns to avoid, minimize, and compensate for impacts to fish and wildlife resources associated with the San Clemente Shoreline Protection Project:

1) There is a great deal of uncertainty regarding the ability to mitigate impacts to surfgrass inkind. In addition, the Corps has indicated that a 10-m (33-ft) beach width would achieve the project purpose of storm damage protection and yield an acceptable benefit-cost ratio for the project. Therefore, the Corps should limit the project to a 10-m (33-ft) beach width to help ensure that significant long-term impacts to surfgrass do not occur and to minimize potential mitigation risks/costs.

2) Only baseline surveys with transects approximately 70 m (230 ft) apart have been completed, which likely did not capture all of the surfgrass/reef resources in the projected equilibrium footprint in which sand movement and burial is expected to occur. In addition, the entire 2-ha (5-ac) T-Street Reef is projected to be in the equilibrium footprint. Therefore, the MMRP assumption of up to only 0.81 ha (2 ac) of surfgrass/reef impacts may significantly underestimate project impacts, and the MMRP should be revised to assume at least 2 ha (5 ac) of surfgrass/reef impacts to help ensure that adequate funds are budgeted for potential mitigation costs.

3) The MMRP proposes to monitor surfgrass/reef mitigation for only 2 years, while it proposes 5 years of monitoring for kelp mitigation. There is no justification for this discrepancy, especially given the uncertainties of surfgrass restoration. Therefore, the MMRP should be revised to include at least 5 years of monitoring of surfgrass/ reef mitigation.

4) The MMRP proposes to mitigate impacts to shallow reef with deep water reef, without sufficient justification as to why it is not feasible to restore shallow reef. This could lead to significant cumulative loss of shallow reef. Therefore, the MMRP should be revised to require impacts to shallow reef be mitigated in-kind, unless the resource agencies concur that this is not feasible and that potential cumulative loss of shallow reef is expected to be minimal.

5) The MMRP proposes to allow impacts to surfgrass to be mitigated with kelp restoration if initial test surfgrass restoration plots fail, which could lead to significant cumulative loss of surfgrass. Therefore, the MMRP should be revised to require impacts

Exhibit 12
CD-029-11

to surfgrass be only mitigated in-kind, unless the resource agencies concur that sufficient research and testing has shown that this is not feasible and potential cumulative loss of surfgrass is expected to be minimal.

6) The MMRP does not address potential impacts to the intertidal reef at Mariposa Point north of the beach replenishment site. Although net sand transport in the vicinity of the beach replenishment site is expected to be to the south, Mariposa Point is not far enough north of the project site to assume that no impacts will occur to the intertidal reef there. Therefore, the MMRP should be revised to include monitoring of the intertidal reef at Mariposa Point and mitigation for any significant long term impacts.

7) The MMRP proposes to use Mariposa Point as the only control site assessing impacts from Corps beach replenishment project. However, Mariposa Point could be impacted by the Corps beach replenishment project as well as by the City's opportunistic beach replenishment program. In addition, the use of only one control may not be able to distinguish impacts from beach replenishment from natural variability. Therefore, the MMRP should be revised to include multiple control sites approved by the resource agencies.

8) Mitigation measures should be planned and provided for prior to or concurrent with project impacts and supplemented as needed to offset any additional, significant long-term adverse impacts documented by the monitoring program. This is especially important for surfgrass because of the uncertainties of surfgrass restoration and at least a 2- to 5-year temporal loss of functions between time of impact and restoration success. If mitigation is not provided in advance of project impacts, the MMRP should be revised to include adequate compensation to address temporal losses as agreed to by the resource agencies.

9) The Corps should monitor the extent of turbidity plumes at the dredge and beach replenishment site throughout the duration of dredging and sand placement activities, or until such point that the resource agencies concur that monitoring is no longer necessary. The MMRP should be revised to include a plan to monitor and report the extent of turbidity plumes and establish acceptable levels and thresholds, which could potentially trigger additional measures. Weekly reports should be submitted to the resource agencies.

10) The MMRP should be revised to include the provision that if significant impacts to surfgrass/reef resources are documented, subsequent modified beach re-nourishment will not occur until the resource agencies concur that mitigation for those impacts is successfully completed, or impacted surfgrass or reef has recovered.

11) After the comprehensive PED phase biological surveys, the Corps should revise the MMRP and receive written concurrence from the resource agencies that it fully addresses mitigation of impacts, criteria for triggering mitigation, success criteria, and monitoring and reporting requirements.

12) The Corps should include the costs of mitigation recommended by the resource agencies in any project budget submitted to Congress for approval. Prior to project implementation, the Corps and City should identify a funding mechanism to guarantee that future funding will be available to implement the mitigation program in the event that mitigation costs exceed the funds appropriated by Congress. For example, funds could be secured by the City through a letter of credit, endowment account, or other legal mechanism approved by the resource agencies sufficient to guarantee mitigation will be implemented to offset adverse impacts of the project.

Grunion Condition, Permit Application No.: 6-11-018
SANDAG

8. **Grunion. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit to the Executive Director for review and written approval, a program of elements to be utilized in developing a revised, final construction schedule. The applicant shall adhere to the following provisions in order to avoid impacts to mature grunion and to grunion eggs during a spawning event to the extent feasible. The annually published California Department of Fish and Game (CDFG) expected grunion runs shall be used to determine possible grunion spawning periods. At this time, the 2012 CDFG expected grunion run information is not available. The program and revised construction schedule shall incorporate the following:

a. During the grunion spawning period of March through August, all proposed receiver sites shall be monitored for grunion runs concurrently (excluding the Batiquitos receiver site), unless the beach consists of 100 % cobble (i.e. there is no sand on the beach). In addition, prior to issuance of the permit, the applicant shall develop additional criteria to determine the viability of a deposition site for a spawning event and if the deposition site can be eliminated from the monitoring requirement. The criteria shall include, but are not limited to, predicted monthly high tides, current beach profiles and historic grunion runs. The criteria shall be subject to approval of the Executive Director in consultation with CDFG, NMFS, USACE. Monitoring need not continue at a given site after sand replenishment has been completed at that site.

b. Grunion monitoring shall be conducted by qualified biologists for 30 minutes prior to and two hours following the predicted start of each spawning event. Sufficient personnel shall be utilized to insure that the entire receiver site is monitored during the specified period. For the purpose of determining the magnitude and extent of a grunion spawning event, the Walker Scale shall be applied to each 100 yard segment of the receiving beach.

c. If a grunion run consisting of 0 to 100 fish (Walker Scale of 0 or 1) is reported within two weeks prior to or during construction/beach replenishment, the applicant does not need to take any avoidance action for grunion eggs. No mature grunion shall be buried or harmed as a result of construction/beach replenishment.

d. If a grunion run consisting of more than 100 fish (Walker Scale of 2, 3, 4, or 5) is reported within two weeks prior to the start of construction, the applicant shall avoid mobilization on those beach segments and no grunion eggs shall be buried or disturbed at the receiver site. The applicant shall alter the construction/beach replenishment schedule to replenish a beach segment that has not had such a grunion spawning event within two weeks prior to the start of construction. However, after June 15, the applicant may also place sand at sites if a grunion run of hundreds of fish spawning at different times or at once in several areas of beach (Walker Scale of 2 or 3) is reported within two weeks prior to construction, with the implementation of feasible avoidance and minimization

measures pursuant to subsection (g) below. No mature grunion shall be buried or harmed as a result of construction/beach replenishment.

e. If construction/beach replenishment has already begun when a grunion run consisting of hundreds of fish spawning at different times or at once in several areas of beach (Walker Scale of 2 or 3) is reported, impacts to grunion eggs may occur if avoidance is not feasible. The applicant shall first attempt to minimize impacts to grunion eggs through measures pursuant to subsection (g) below. No mature grunion shall be buried or harmed as a result of construction/beach replenishment.

f. If construction/beach replenishment has already begun when a grunion run consisting of thousands of fish together, with little sand visible between fish (Walker Scale 4 or 5) is reported, no impact to grunion eggs shall occur within that portion of the receiver site experiencing that density of fish. The applicant shall avoid impacts to grunion eggs in that portion of the receiver site through alteration of the discharge point, sand spreading and/or shifting receiver site boundaries. Ceasing of construction/beach replenishment activities at this location shall occur if avoidance measures are not feasible. No mature grunion shall be buried or harmed as a result of construction/beach replenishment.

g. The applicant shall develop a list of feasible measures for each deposition site, subject to approval of the Executive Director in consultation with CDFG, NMFS and ACOE, taking into consideration the size of the deposition site, stage of mobilization, construction constraints, etc., that may be utilized to allow work to continue but also minimize and/or avoid impacts to eggs and disruption within the two week spawning period.

5.0 CONCLUSIONS

The North Beach Project was monitored for possible effects, both beneficial and adverse. This report presents the results of the project as measured one year after construction. Monitoring was performed for beach profiles and biology as required by permits. The following conclusions pertain:

1. The project served as a critical first attempt at performing opportunistic beach fill. As such, it is deemed a success because delivery of the material to the beach did not cause impacts of traffic congestion, to the safety of pedestrians, to surfing, or beach users.
2. The beach width measurements indicate that approximately two-thirds of the beach fill material may have dispersed from the placement site to other areas of the beach and profile.
3. Observations of North Beach one year after construction indicates that more sand exists at the mean sea level elevation than existed in 2005, suggesting dispersion of the beach fill along the downcoast beach and tangible benefits. Cobble also existed both before and after the project and appears to reflect typical conditions for this beach.
4. The project resulted in no discernible adverse impacts to biology. The biological monitoring did not detect any changes in sensitive resources that are correlated with beach nourishment activities. Sand depths and cover did not increase in the project vicinity based on the total of two biological surveys done before and after the project.
5. Beach nourishment generally benefited North Beach but a fraction of coarse material (cobbles and rocks) caused some user discomfort. Improvement can be achieved by sieving the material for particles larger than those on the receiving beach during future projects for any material obtained from a river or upland deposit. The proportion of large particles delivered in the beach fill should be no more than that at the receiving beach prior to construction.
6. Coordination with the volleyball club user-group should be improved for future efforts that affect the volleyball courts through written notification.

Due to the presence of cobbles and rock in the fill, future beach nourishment projects at San Clemente using upland material should be screened to reduce the number of larger particles. Screening should target materials larger than that existing at the receiver beach prior to construction. If pebbles and small cobbles exist on the beach prior to construction, they should be able to pass through and be included in the beach nourishment material if their proportion is no greater than the proportion of pebbles/cobbles at the existing beach. Only sandy material should be used to fill the volleyball courts.

The contractors' dredge and vessels will require off-site mooring and berthing space. There is no mooring area available within the City of San Clemente. The nearest suitable mooring area is Dana Point Harbor, a small craft harbor approximately 8 km (5 mi) north.

6.5 *Operation and Maintenance Costs*

Operation and Maintenance (O&M) costs associated with the tentatively recommended plan are expected to consist primarily with routine grooming, shaping, and cleaning of the beach. The tentatively recommended plan does not include any utilities or typical structural improvements associated with beaches such as public access walkways or other such walkover structures. Typical O&M activities are expected to consist of grooming and shaping the beach after storms to smooth out localized sediment accumulations/depletions, and debris cleanup along the beach and at storm drain outlets. These O&M activities are considered non-Federal responsibilities. However, these activities are usual and customary for beaches, and the tentatively recommended plan is not expected to cause an increase in these efforts.

6.6 *Monitoring Plan*

Continuing construction monitoring will be required in support of the continuing construction (nourishment) of the project. The purpose of this monitoring is to allow the timing and the detailed design of the periodic nourishment to be optimized.

Continuing construction monitoring efforts are expected to consist of direct surveys of the beach and seabed morphology. Surveying of the beach and seabed morphology is paramount to the monitoring efforts. Changes in beach and seabed morphology will define the sediment transport patterns at the shoreline and ultimately the short term and long term beach erosion processes. Alongshore transects will be crucial to determine the effects, if any, the proposed project has on updrift and/or downdrift shorelines.

Survey methods will consist of topographic measurements, bathymetric measurements, surf quality observations, and video stereo photogrammetric methods. The monitoring period will begin one year before construction (for the surf quality observations) and continue for the 50-year period of Federal involvement. However, not all aspects of the monitoring plan will be conducted each year. A description of the monitoring features is described below and a summary of the monitoring costs is shown in **Table 6-3**.

Exhibit 15
CD-029-11
Surfing Monitoring

Table 6-3 Monitoring Costs

Year	Fill	Profiles	Install	Maint	Report	Width	Surfing	Sum
-1							$6,000	$6,000
0							$6,000	$6,000
1	*	$30,000	$40,000	$35,000	$32,000	$8,000	$6,000	$151,000
2		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
3		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
4		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
5		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
6	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
7		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
8		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
9		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
10		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
11	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
12		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
13		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
14		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
15		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
16	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
17		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
18		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
19		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
20		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
21	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
22		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
23		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
24		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
25		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
26	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
27		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
28		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
29		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
30		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
31	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
32		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
33		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
34		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
35		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
36	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
37		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
38		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
39		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
40		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
41	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
42		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000

43		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
44		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
45		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
46	*	$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
47		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
48		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
49		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000
50		$30,000		$35,000	$32,000	$8,000	$6,000	$111,000

6.6.1 Beach Width

Beach width measurements shall be obtained of the sub-aerial portion of the beach. The beach width is a simple linear measurement from a fixed point on the backshore to the foreshore berm crest. This method provides a systematic record of shoreline response and can be used to yield a good approximation of long-term gains or losses of sediment from a given reach of shoreline. These measurements will yield a highly useful time series of shoreline change. Experience has shown that monthly measurements are the optimal frequency to demonstrate long-term shoreline change. This type of measurement system has been successfully employed by the Los Angeles District for several decades and has repeatedly demonstrated its utility and value. Measurements shall be taken monthly at 9 locations corresponding to historical locations. Measurements shall be taken by the City of San Clemente.

This method requires a very low level effort with an attendant low cost. Each monthly survey can be accomplished in 2-3 hours. The annual cost of monthly beach width measurements is $8,000, based on recent similar costs provided by the City of San Clemente.

6.6.2 Topography / Bathymetry

Conventional topographic measurements will be obtained of the sub-aerial portion of the beach and bathymetric measurements of the surf zone and seabed morphology will be obtained using conventional acoustic sonar methods. Measurements will be obtained along pre-determined transects that coincide with historical transect locations, and mass points to develop a well-defined terrain model of the littoral system. These measurements are planned for twice annually, typically in early spring after the winter erosion season, and in late fall after the summer accretion season.

The cost of each conventional transect survey is $15,000, based on recent similar surveys conducted for the City of San Clemente.

6.6.3 Surf Quality (Surfability)

Surfing and high quality surfable waves are an increasingly valuable resource. An innovative method pioneered by the Los Angeles District has been developed to quantify surf quality (surfability). A trained observer visually estimates the breaking wave climate at the shoreline twice daily, typically at first light and at 1300; the times are approximate. Wave characteristics measured included height, period, and direction. Wave heights from the crest to the trough are visually estimated to the nearest 1 foot. Waves are observed for a period of 5-10 minutes and the minimum, average, and maximum wave heights are estimated. Wave period is based on an

average of 30 waves over the 5-10 minute observation period and is reported to the nearest 1 second. Wave directions are reported relative to the beach normal and estimated to the nearest 5 degrees. Wave directions are recorded as normal (0-10 degrees); slightly from the left (or right) (10-25 degrees); significantly from the left (or right) (greater than 25 degrees). Surf quality is also expressed in common surf language by the observer. Visual observations are supplemented with video recordings.

This method requires a very low level effort with an attendant low cost. The annual cost of twice daily observations is $6,000, based on recent similar efforts conducted in the City of Imperial Beach. The cost of video recording is captured within the video based photogrammetry discussed hereinafter.

6.6.4 Video Based Photogrammetry

Argus Beach Monitoring System is a state-of-the-art video-based stereo photogrammetric method which utilizes multiple video cameras and the principles of stereo photogrammetry to obtain topographic measurements. Multiple video cameras are typically mounted viewing the longshore area of interest and the video cameras obtain continuous imagery of the beach. Data analysis software provides detailed topographic mapping data of the sub-aerial portion of the beach. The beach topography can be sampled such that a nearly continuous time series of the beach can be obtained. It is assumed that this system will be installed initially and maintained annually.

The purchase and install cost of the Argus Beach Monitoring System is $40,000. The annual operating cost is $35,000; this cost includes all routine maintenance and as well as replacement of the system components as they become obsolete. Analysis and reporting equals $32,000 annually. There is a large suite of available analysis products; this value represents a moderate number of analysis products. These costs are based on discussions with Northwest Research Associates, vendors of the Argus system (Northwest Research Associates, 2007).

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

SEP 30 2011

Theodore A. Brown, P.E.
Chief, Planning and Policy Division
Directorate of Civil Works
U.S. Army Corps of Engineers
CECW-P (SA)
7701 Telegraph Road
Alexandria, Virginia 22315-3860

Dear Mr. Brown:

The National Oceanic and Atmospheric Administration (NOAA) has reviewed the U.S. Army Corps of Engineers' (Corps) Final Joint Environmental Impact Statement/Environmental Impact Report (FEIS) San Clemente Shoreline Protection Project. The enclosed comments include an evaluation of the Corps' response to the issues raised by NOAA's National Marine Fisheries Service's (NMFS) during development of the FEIS regarding effects of the project on the marine environment. These evaluations are based on NOAA's special expertise and responsibility to protect essential fish habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act and conserve wildlife resources under the Fish and Wildlife Coordination Act. NMFS previously provided comments on the Draft Environmental Impact Statement on September 20, 2010. The comments included EFH conservation recommendations and recommendations pursuant to our Fish and Wildlife Coordination Act (FWCA) responsibilities. The San Clemente Shoreline Project sets a precedent for how Corps Civil Works may plan and implement similar projects for which sensitive nearshore habitats may be impacted. NMFS discusses their concerns in greater detail in the enclosed comments and provides recommendations that should be addressed prior to a record of decision.

Thank you for consideration of NMFS comments and recommendations. If you have any questions, please contact Bryant Chesney, NMFS Southern California Habitat Coordinator, at (562) 980-4037 or Bryant.Chesney@noaa.gov.

Sincerely,

Paul N. Doremus, Ph.D.
NOAA NEPA Coordinator

Enclosure

cc: Colonel R. Mark Toy

Exhibit 16 - CD-029-11

NOAA's National Marine Fisheries Service (NMFS) has reviewed the U.S. Army Corps of Engineers' (Corps) Final Joint Environmental Impact Statement/Environmental Impact Report (FEIS). NMFS offers the following comments pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), National Environmental Policy Act (NEPA), and Fish and Wildlife Coordination Act (FWCA).

Consultation History

NMFS has provided informal technical input via a number of interagency meetings and email correspondence dating back to 2007. NMFS formally provided comments on the Draft Environmental Impact Assessment (DEIS) pursuant to MSA, NEPA, FWCA, the Endangered Species Act, and the Marine Mammal Protection Act on September 20, 2010. Within these comments, NMFS provided essential fish habitat (EFH) Conservation Recommendations pursuant to our MSA responsibilities and FWCA recommendations.

Proposed Project

The following project description is found on page ES-2 of the FEIS.

> *Two scales of the Beach Fill Alternative were analyzed; they both consist of dredging material from offshore Oceanside, then hauling and placing it at San Clemente Beach. The proposed Project is a 50 foot (15 m) resultant beach width. Beach fill would be 3,412 ft (1,040 m) long with a +17 ft (+5.2 m) crest elevation. The dredge volume is estimated to be approximately 251,130 cubic yards (192,000 m324). Dredge material gradation is 6 to 12 percent of fines, 5 to 8 percent of gravel/cobbles, and the rest is sand. Material classification assumed is 10 percent fines, 83 percent sand and 7 percent gravel. Construction is anticipated to begin in 2012 but may begin as soon as 2010.*

Summary of Concerns on the FEIS

The San Clemente Shoreline Project sets a precedent for how Corps Civil Works may plan and implement similar projects for which sensitive nearshore habitats may be impacted. NMFS has a number of concerns regarding the proposed project and the FEIS. They are summarized in bullet form below. These concerns are described in greater detail in the text that follows.

- The FEIS and Final Feasibility Report do not explicitly address comments provided by an Independent External Peer Review.
- The Corps' response is inconsistent with key aspects of our EFH Conservation Recommendations. In some cases, justification for the inconsistent responses is absent, unclear, and/or not supported by adequate scientific justification.
- The Corps incorrectly states that NMFS has no authority to provide comments pursuant to the FWCA.
- The FEIS contains various mischaracterizations of NMFS involvement and opinions expressed during the agency coordination process.

Precedent of Corps Civil Works Beach Nourishment Projects Near Sensitive Resources

NMFS believes this project sets a precedent for how Corps Civil Works intends to approach beach nourishment projects for which sensitive habitats exist immediately offshore. The Corps is also in the planning stages of a similar project at Encinitas -Solana Beach. This area is within San Diego County and very similar to San Clemente with high coastal bluffs, little or no sandy beach, and a rock platform. This project is substantially larger – over 1,200,000 cubic yards of sediment over approximately 2.9 miles of shoreline with extensive reef habitat immediately offshore.

Based upon comments given during the agency coordination process, our response to the DEIS, and our current response to the FEIS, NMFS does not believe the Corps has fully addressed NMFS' concerns regarding monitoring, impact determination, and mitigation for sensitive nearshore resources. Thus, NMFS hopes that resolution of concerns expressed for the San Clemente Shoreline Project will facilitate a more efficient and environmentally benign project in Encinitas-Solana Beach.

Disclosure of Pertinent NEPA Information

NMFS recently became aware of a document titled 'A Final Independent External Peer Review Report: San Clemente Storm Damage and Shoreline Protection Feasibility Study' and was dated July 23, 2010. NMFS obtained the document from the following Corps website: http://www.usace.army.mil/CECW/PlanningCOP/Documents/peer/san_clemente.pdf. The NMFS notes the absence of this review in Section 12.0 References of the FEIS. Given the findings of the independent review, NMFS finds it highly problematic that this review was not discussed in the DEIS or the FEIS.

Below is the summary of the panelist comments:

Plan Formulation: Several aspects of the plan formulation component of the San Clemente Feasibility Study lack the details necessary to fully understand the decision-making process. In particular, more details are needed on the following: the screening process for management measures, the population and properties potentially impacted by the project, and the public involvement process.

Economics: Overall, the economics portions of the report are well written, and do not include any serious issues. However, one minor concern is the lack of documentation supporting the use of an uncertified beach damage model. In addition, while the economics appendix demonstrates a clear understanding that recreational benefits are treated as incidental, the Feasibility Report's Sections 4.5 and 4.6 suggest, in contrast, that recreation was a primary planning objective.

Engineering: There are several significant engineering assumptions and analyses that affect plan formulation results which are not substantiated or well justified. There also are several parameters included in the integrated engineering-economic model that are not well supported by data, assumptions, and analyses. Further, these parameters inherently have a high degree of uncertainty that is not quantified and included in plan formulation. Additional data and analyses

to substantiate the assumptions, and consideration of the uncertainties must be incorporated into the plan formulation analyses.

Environmental: The environmental review of the project was generally clear and thorough; however, the discussion on the significance of impacts on two habitats (surfgrass and kelp beds) that are of primary concern when selecting beach width alternatives were inconsistent and not substantiated. While uncertainties exist as to the likely impact on these communities due to sand burial, the document does not provide an adequate approach to determining the significance on these communities and the species they support nor a clear adaptive management program to deal with the uncertainty.

Below is a table that lists the 24 Final Panel Comment statements by level of significance.

Table 3. Overview of 24 Final Panel Comments Identified by San Clemente Feasibility Study IEPR Panel

Significance – High	
1	The assumption that the existing beach is erosional is not supported by the data and analyses used to develop representative Future without Project conditions
2	The sediment budget discussion needs to be updated and refined to include reach-specific information.
3	Railroad Reach Conversion Criterion assumptions and values are not substantiated or consistent.
4	There are significant uncertainties associated with the selected value of the Minimum Beach Criterion that are not considered in the project alternatives evaluation and plan formulation analyses.
5	The use of the San Diego Association of Governments (SANDAG) project to predict the performance of the San Clemente project has not been justified.
6	The values used to represent expected storm-induced cross-shore sand transport and beach change have not been verified to site-specific conditions.
7	Details on sediment compatibility and relationship of depth to closure need to be added to the equilibrium beach profile, toe of fill, and rock coverage analyses.
8	The volume-to-area relationship used to derive beach fill volume and expected fill performance is not supported and additional details are needed on specific beach profile characteristics and beach fill design parameters.
Significance – Medium	
9	The significance of the loss of surfgrass and kelp bed communities should be defined.
10	The description of each planning reach should include information on the reach's economic, environmental, socio-demographic, and engineering characteristics, and the rationale for the elimination of specific reaches needs to be better described.
11	Based on the information provided, it was not evident that a sufficient level of public involvement took place.

12	Cost effectiveness and not cost should be used for screening the measures.
13	More thorough documentation and analysis is needed on management measures to justify the selection of the alternative.
14	More detailed examination of the impacts of future sea level rise on the project is warranted.
15	Impacts of the project to the local community are not described in detail sufficient to provide a clear and accurate representation of the current conditions in the study area.
16	The cost analysis assumptions are reasonable; however, the mobilization/demobilization costs and the estimate of contingencies should be revised to reflect equipment availability, travel times, and production capacity.
17	It is not clear whether Borrow Area 2A can satisfy the project's 50-year needs.
18	Since the coastal storm damage model does not appear to have been certified, then the model itself and particularly the key random variables need to be described in considerably more detail, and evidence of model certification should be provided.
19	It is not clear how the effects of loose rock and cobble in the San Clemente beach profile affect beach dynamics and expected project performance.
20	Some elements of project monitoring are missing and an adaptive management plan needs to be developed.
21	The effects of borrow area sediment quality variation on water quality, project constructability, and project performance could be different than those discussed in the report.
Significance – Low	
22	The calibration of railroad damage functions is not clear.
23	There are omissions in the Environmental Impact Statement's section on Biological Resources (including unclear figures, missing information on surfgrass fauna, and incomplete discussions on shorebirds and sea turtles) that need to be addressed.
24	Recreational benefits must be treated as incidental benefits of the project.

Given that the Feasibility Study provides the foundation for the Corps' NEPA documentation, NMFS recommends that the Corps explain how they addressed the comments provided by this independent review.

It is possible that the Corps made reference to this document on page 5-55.

> *No ATR or IEPR comments raised this* [mitigation approach] *as a concern, and uncertainty persists as to whether there will be any impacts at all to rocky reef and surfgrass vegetation from the recommended alternative.*

The meaning of the IEPR acronym was not listed in Section 11.0 Glossary, Acronyms, and Abbreviations. NMFS used the Acrobat 'Find' tool in Volumes I and II of the FEIS, the San Clemente Shoreline Feasibility Study Final Report, and the Technical Appendices to the Final Report, but was unable to locate another instance of its use. Thus, NMFS was not able to determine the exact meaning of the acronym, but, superficially, the acronym matches **I**ndependent **E**xternal **P**eer **R**eview. If the use of the acronym 'IEPR' was referring to the peer review, then this statement is misleading. As summarized above, the panelists found that 'while uncertainties exist as to the likely impact on these communities [surfgrass and kelp beds] due to sand burial, the document does not provide an adequate approach to determining the significance on these communities and the species they support nor a clear adaptive management program to deal with the uncertainty.'

Statutory Response to EFH Conservation Recommendations

The Corps' response to our EFH Conservation Recommendations reads as follows:

> *The monitoring and mitigation plan in Appendix B has been revised to include mitigation for loss of surfgrass and reef habitat. If surfgrass mitigation fails, a contingency plan has been developed to plant kelp on an offshore reef.*

The Corps' final response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the activity. If the Corps' response is inconsistent with our EFH conservation recommendations, the Corps must provide an explanation of the reasons for not implementing those recommendations. The reasons must include the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

The Corps response to the EFH Conservation Recommendations pointed to Appendix B. However, Appendix B did not provide an adequate response to all of our EFH Conservation Recommendations. Below NMFS identifies those EFH Conservation Recommendations that were not adequately addressed.

Conservation Recommendation 1: Given the high ecological values associated with surfgrass and rocky reef habitat, NMFS believes unavoidable reductions in quantity and/or quality of these habitats should be addressed via compensatory mitigation. The Corps and project sponsor should develop a contingency mitigation plan in consultation with NMFS and other interested agencies prior to the record of decision for the proposed project.

The contingency mitigation plan should be based upon a reasonable estimate of potential impacts to rocky reef and surfgrass habitat. This estimate should be developed and agreed upon by Corps, NMFS, and other interested agencies prior to the record of decision for the proposed project. This estimate may then be used as the basis for determining the approximate cost of implementing a mitigation project and should be incorporated into the benefit to cost ratio of the proposed project. In addition, the estimated cost can serve as the basis for providing financial assurances that will ensure a high level of confidence that the compensatory mitigation project will be completed if impacts are observed.

The Corps developed a contingency mitigation plan, which is described in Appendix B. However, the estimate of potential impacts to rocky reef and surfgrass habitat was not agreed upon by NMFS and other interested agencies. NMFS believes the Corps estimate is not well supported and outlines some of the problematic issues below.

Impact Uncertainty

The basis for the Corps estimate of impacts is uncertain. Appendix B states the following regarding estimated impacts:

> *Impacts to rocky reef and surfgrass are expected to be none to very minor, but currently are unknown.*
>
> *Potential project impacts to these resources were based on modeling that indicates that sand movement may extend to the offshore/outer edge of the reef; however, sand at the offshore/outer edge of the reef would be thin and not significant. Potential burial of the inshore edge of T-Street reef is uncertain; however, in a reasonable worst case scenario, approximately 20 percent of the inshore edge of the T-Street reef area (about 1 acre) may be buried.*

On page 5-57, the following is stated:

> *The estimate that approximately 20 percent of the reef or 1 acre would experience significant burial was determined by superimposing the sand distribution cross section predicted by Corps coastal engineers on the offshore bathymetry and by delineating the reef as well as the surfgrass locations measured in the field by Chambers Group.*

The FEIS acknowledges the uncertainty of their impact predictions and the associated modeling. On page 93 of the Coastal Engineering Appendix (Appendix), the following is stated:

> *Conclusions drawn from the SANDAG Oceanside Beach monitoring suggests that the San Clemente fill will have burial impacts in the cross-shore direction, but there are no known cross-shore sediment transport models which have been demonstrated to accurately predict the distribution of material across the existing profile.*

Further, on page 94 of the Appendix, the following is stated:

> *The depth of burial is greatest at the shoreline, and is expected to range up to 6m (19ft) thick. The depth of burial at the seaward toe of the fill footprint is expected to range between 0.3-1.0m (1-3ft)…*
>
> *…The tentatively recommended plan is expected to create burial impacts to rocky bottom habitats.*

Thus, according to the Appendix, burial at the outer edge will range between 0.3-1.0 meter (m) (1-3 feet (ft)). Whereas, in Appendix B, it is stated that burial on the outer edges would be thin and insignificant. NMFS does not believe 1-3ft burial is insignificant. NMFS notes that short term burial at depths of 0.8 feet exhibited a statistically significant decline in shoot count within a laboratory setting (Craig et al, 2008). Furthermore, the FEIS indicates that some portions of surfgrass habitat within the equilibrium footprint already exhibit some burial. Thus, the additive impact associated with this beach fill project may exacerbate existing conditions for surfgrass habitat.

<u>Limited Characterization of Nearshore Habitats for Impact Assessment Purposes</u>

In addition to the uncertainty of potential impacts, NMFS does not believe the sensitive resources within the impact area have been adequately characterized for impact assessment purposes. NMFS indicated in our comments to the DEIS that the survey information that was provided does not delineate areal extent of rocky reef and surfgrass within the impact area. No quantification of area and/or coverage was provided for the scattered boulders and surfgrass habitat. In response to NMFS comments regarding the action area, the Corps states the following:

> *The Corps' marine ecology contractor conducted several dives along 25 transects, as noted in the FEIS/R. These field data were more than reconnaissance level field investigations. The data clearly and unequivocally captures the distribution extent of rocky reef, single boulders, and the extent of surfgrass distribution.*

Further, on page 5-51, the following is stated:

> *Above all, the surveys provided the information needed to assess potential impacts, and the basis needed for discussion and evaluation of project alternatives, along with potential monitoring and mitigation.*

NMFS does not believe the information provided justifies this assertion. First, the above statements are inconsistent with the following statement made in their comment response:

> *There currently is no available data that depicts or illustrates the rocky reef or surfgrass of the entire locale.*

Second, a detailed description of the surveys was not provided. Thus, there is little to judge the confidence of the surveys that were conducted. Third, the only spatially explicit information obtained from these surveys is depicted in Figure 4-10. For example, the T-street reef is delineated on Figure 4-10. However, the Corps later states on page B-4 that a survey was not conducted to delineate the T-street reef. Instead, only the general area of T-street reef was mapped. Furthermore, single boulders were not identified and surfgrass is represented by individual points on Figure 4-10. Fourth, the dive transect surveys are inadequate to fully characterize the offshore habitat within the impact area. Although 25 dive transects were surveyed in total, only 21 transects were surveyed in the impact area. The 21 transects are immediately offshore of the approximately 3,412 foot long project area. Ideal visibility conditions may reach 30 feet in the impact area, though NMFS expects that typical visibility in this area is likely much less. Regardless, assuming optimal conditions, a diver could cover 37% of the project area. A more likely estimate of visibility in the project area would be 10 ft, which would allow 12% of the impact area to be visually estimated. At equilibrium, the Corps indicates that the fill footprint is approximately 132.0 acres. Thus, under optimum conditions 84 acres of the impact site was not characterized by diver transects. Under the more likely visibility scenario, 116 acres was not characterized by diver transects.

Thus, NMFS maintains our assertion that the survey information provided by their marine ecology contractor does not delineate areal extent of rocky reef and surfgrass within the impact

area. Hence, the information provided does not provide an accurate characterization of offshore habitats for impact assessment purposes.

Upon closer inspection of the Coastal Engineering Appendix, NMFS notes Figure 2-6 in the Appendix, which depicts the surficial geologic features in the project vicinity. Although the survey coverage is not entirely comprehensive, there appears to be a considerable amount of area where rock outcroppings cover more than 50 percent of the seabed within the impact footprint. Unfortunately, this geophysical survey is not overlaid with other mapped features in Figure 4-10 of the FEIS.

Additional information relevant to the characterization of nearshore habitat may be found on page 35 of the Coastal Engineering Appendix. Geologic mapping indicated that the areas from San Juan Creek to San Mateo creek are essentially hard exposed bedrock throughout the regime. Mapping indicated the offshore regime is primarily hard bottom covered in some places by shallow pockets or a thin veneer of sediment. The sediment sources described in Section 2.5.2 are indicative of a region that does not naturally have an abundance of sediment supplied to the beaches.

Corps Ability to Predict and Effectively Compensate for Impacts to Seagrass

The Corps has not demonstrated strong predictive abilities for impacts to seagrass for recent Corps projects. In addition, the Corps has not consistently provided adequate seagrass surveys in a timely manner and has not consistently met its environmental commitments for seagrass mitigation. The following are examples.

For the Morro Bay Harbor Six-Year Maintenance Dredging Program, the Corps concluded that the proposed dredging would not have a significant impact on eelgrass. In response to NMFS' EFH Conservation Recommendations, the Corps committed to pre-construction and post-construction surveys for dredging activities within the Morro and Navy Federal channels. In addition, they indicated that the surveys and any necessary mitigation would be conducted in accordance with the Southern California Mitigation Policy (SCEMP). The Corps conducted maintenance dredging in Morro Bay during 2009 and 2010. However, the original pre-construction eelgrass survey for the 2009/2010 dredging cycle was inadequate and significantly underestimated the distribution of eelgrass in the dredge footprint. In particular, the survey failed to capture an approximately 1 acre eelgrass bed that was directly in the dredge footprint. Unfortunately, due to contractual limitations, the Corps indicated they could not implement another pre-construction survey without significant delays that would significantly increase dredging costs. Given that the project was funded by the American Recovery and Reinvestment Act, NMFS compromised with the Corps and agreed upon an assumed impact of 1 acre based upon expected impacts within the dredge footprint, for which the Corps agreed to provide compensation. The dredging ultimately resulted in additional impacts beyond the dredge footprint - likely due to slope failures. However, the extent of the additional impacts is difficult to predict because 1) the original pre-construction survey was inadequate and 2) the Corps did not provide a timely post-construction survey of the affected areas. In fact, NMFS has yet to receive a post-construction survey from this dredging cycle that shows the affected eelgrass areas in the vicinity of the Morro Channel.

There were also issues associated with the Corps' San Diego River Mission Bay Jetty and Revetment Repair and Maintenance Dredging Project in San Diego County. NMFS expressed the importance of protecting eelgrass habitat within the project site in accordance with the SCEMP in our EFH letter dated July 29, 2009, and throughout the project planning process in general. The Corps also recognized the importance of this valuable resource and committed to protecting it while implementing the project. For instance, in section 3.2.2 of the Final Supplemental Environmental Assessment (FSEA), the NEPA document for this project, the Corps specified the measures that would be taken to avoid impacting eelgrass and then stated, "If necessary, mitigation will be coordinated with the US National Marine Fisheries Service (NMFS) and carried out in accordance with NMFS's Southern California Eelgrass Mitigation Policy". Under section 4.1.7 of the FSEA, the Corps also noted that any impacts to eelgrass would be mitigated "...in accordance with current policies and practices". In addition, the cover letter accompanying the "Pre-Dredge Eelgrass and Caulerpa Surveys for the 2010 Mission Bay Harbor Maintenance Dredging Project" appropriately reiterated the Corps' obligation to mitigate for eelgrass impacts in accordance with SCEMP. Thus the need to protect, and mitigate for any impacts to, eelgrass habitat during construction activities was adequately addressed by both the Corps and NMFS prior to project initiation. However, the Corps has yet to fully comply with these obligations. Implementation of the project resulted in the loss of approximately 0.8 acres of eelgrass habitat, as documented in the "Post-Dredge Eelgrass Survey for the 2010 Mission Bay Harbor Maintenance Dredging Project". According to SCEMP, the mitigation for these impacts should have begun within 135 days of initiating in-water construction, which occurred in October, 2010. Therefore, even if the mitigation was postponed until the next active growth phase to increase the likelihood of success, this mitigation project should have been started on or around March 1, 2011. Unfortunately, the mitigation transplant has not yet begun, nor has a mitigation plan been released by the Corps. Under section 8 of SCEMP, for projects that do not begin within the 135 day time frame, an additional seven percent for each month of delay shall be applied to the original mitigation area. This is consistent with a widely held concept that temporal losses should result in additional mitigation. However, when we reminded the Corps of this obligation, their response was that they would be unable to comply with the mitigation delay provision of SCEMP. Because NMFS does not believe an effective NEPA process and/or EFH consultation can be conducted if the Corps can not be relied upon to meet their environmental obligations, we relayed these concerns in a letter on July 22, 2011. The Corps has yet to respond to this letter.

In addition, a Corps maintenance dredging project in Lower Newport Bay also impacted eelgrass habitat. Specifically, a 2003 dredging event impacted shallow water and eelgrass habitat in Lower Newport Bay offshore of the east end of Balboa Island. Approximately 0.88 acres of eelgrass habitat was impacted with a mitigation requirement of 1.06 acres. However, mitigation measures to offset these losses have not been successfully implemented.

Summary and Recommendation for Estimated Impacts

Given the uncertainty of the modeling used to predict impacts, the limited characterization of existing offshore habitats, and the Corps' recent history in predicting and mitigating impacts to seagrass habitat, NMFS does not believe the Corps' proposed impact estimate is appropriate.

Instead, NMFS believes a more conservative estimate is appropriate. NMFS is using the following factors in determining a more conservative estimate: 1) a comprehensive survey has yet to be conducted, 2) the T-street reef structure is roughly estimated at 5 acres, 3) the scattered reefs and boulders have not been well characterized with no reliable acreage estimate, 4) the T-street reef structure is within the equilibrium footprint in which cross-shore sand movement is expected to occur, 5) the DEIS indicates that some portions of surfgrass habitat within the equilibrium footprint already exhibit some burial. Without additional information and justification, NMFS recommends that the Corps assume at least 5 acres of surfgrass/reef impacts to help ensure that adequate funds are budgeted for potential mitigation costs. This recommendation is also consistent with a recommendation provided by the U.S. Fish and Wildlife Service (USFWS) in their Final Coordination Act Report. This estimate should be adopted within the record of decision.

Conservation Recommendation 1c: The Corps and/or the project partner should coordinate with NMFS and other interested agencies to determine an appropriate mitigation ratio for impacts to surfgrass and rocky reef habitat.

Appendix B does not specifically respond to this recommendation, but indicates that reef habitat mitigation shall be constructed at an equivalent functional value of shallow and deep water reef proportional to the area of impacted surfgrass and reef.

Section 5.4.5.2 discusses the Corps' mitigation approach in greater detail.

> *The Corps does not use ratios, but instead a scientific-based approach through the use of functional habitat evaluation assessment. A basic FA was used in the BPJ approach and a more robust FA will be accomplished in PED during the monitoring of the project site and the reference site.*

In contrast to this statement, Corps Regulatory routinely uses ratios for mitigation purposes. The use of mitigation ratios is discussed in the 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (Final Rule). However, at an interagency meeting on January 31, 2011, the Corps Civil Works indicated that the Final Rule does not apply to their projects. In response, NMFS specifically requested that Corps Civil Works share their policy. The Corps was unable to respond to this request at the meeting, but did cite Engineering Regulation 1105-2-100 in the FEIS.

Also, in contrast to this statement, is a 2007 memorandum from the Corps regarding the Encinitas and Solana Beach Shoreline Protection project – a project similar in nature to the San Clemente Shoreline Protection project. This memorandum specifically indicates that mitigation for impacts to reef shall be in the form of artificial reefs constructed within the reach suffering losses on a 1:1 ratio.

Moreover, the Corps implies the use of a 1:1 ratio on page 5-58:

> *The Project has a mitigation budget that accommodates 1 acre of impacts to surfgrass plus 1 acre of impacts to reef, for a total potential impact to 2 acres of resources as a worst-case scenario.*

NMFS also notes that the best professional judgment (BPJ) referenced above from the FEIS did not incorporate opinions expressed by NMFS, USFWS, California Department of Fish and Game, Environmental Protection Agency, and California Coastal Commission. Instead it relied upon the Corps' contractors.

Regardless, NMFS agrees with the Corps that the use of ratios should be based upon sound science and, to the extent possible, a functional based approach. In response to Corps concerns that there was no scientifically-based approach to developing ratios, NMFS recommended that the Corps consider the use of a mitigation ratio calculator as a defensible means of identifying an appropriate ratio (King and Price 2004). In addition, we shared scientific rationale for why a 1:1 approach is not defensible. In summary, NMFS believes a 1:1 ratio is inappropriate because: 1) surfgrass is a difficult to replace resource, 2) uncertainty of success, and 3) temporal lag in mitigation. NMFS notes that our rationale is consistent with the Final Rule. Specifically, the Final Rule suggests that higher mitigation ratios should be required where necessary to account for the method of compensatory mitigation, the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. The best available science suggests surfgrass exhibits late successional traits, recovers very slowly from disturbance, and requires facilitation from algae before settling - all factors suggesting that this is a difficult to replace resource. Furthermore, if impacts are identified, a significant time lag will occur between the impact and mitigation. This will result in a temporal loss of function beyond that which would be expected from a difficult to replace species.

<u>Summary and Recommendation for Mitigation Approach</u>

In light of the Corps assertion that they do not use mitigation ratios, NMFS has revised our recommendation. The Corps and/or the project partner should coordinate with NMFS and other interested agencies to develop an appropriate functional assessment for impacts to surfgrass and rocky reef habitat. The final functional assessment used for determining appropriate mitigation to biological resources should receive written concurrence from NMFS prior to project implementation. This recommendation should be included as a mitigation measure in the record of decision.

Conservation Recommendation 2: A scientifically defensible monitoring plan should be developed prior to a record of decision on the proposed project.

The purpose of the monitoring plan is to detect environmental impacts associated with the proposed project and serve as the basis for determining whether compensatory mitigation is appropriate. Results from the monitoring plan will inform the development of a final mitigation plan, which will be based upon the approach described in the contingency

mitigation plan. The monitoring plan should be described in greater detail than the program currently described in Appendix B. The sampling design and statistical analyses should be clearly described and should be based upon fundamental principles of statistical inference. This monitoring plan should be reviewed and approved by the Corps, NMFS, and other interested resource agencies prior to a record of decision. In addition, to ensure adequate scientific rigor, consideration should be given to involving an independent review by recognized, biostatistical experts.

A general approach to the monitoring plan is outlined in Appendix B. The Corps indicates that the final monitoring plan will be prepared during the pre-construction engineering design (PED) phase. NMFS had recommended that this plan be developed prior to the record of decision. Given the limited characterization of nearshore resources for impact assessment purposes, NMFS is amenable to the finalization of the monitoring plan during the PED phase.

NMFS previously expressed concern that the presumption that nourishment projects are ecologically benign may be based upon an incomplete and flawed body of science (Peterson and Bishop, 2005). NMFS recommended that, if previous monitoring results in Southern California are to be used as support for conclusions that impacts to biological resources are minor and/or insignificant, a more rigorous examination of their sampling design, statistical analyses, and conclusions are necessary. The Corps did not adequately respond to this recommendation in light of the flawed science identified in Peterson and Bishop (2005). Instead, they summarized conclusions from previous monitoring events for other nourishment projects without conducting an adequate examination of their sampling design, statistical analyses, and conclusions. The Corps then concluded that the weight of evidence would suggest no impacts would occur at San Clemente.

Summary and Recommendation for Monitoring Plan

NMFS maintains that the sampling design and statistical analyses of the final monitoring plan be clearly described and should be based upon fundamental principles of statistical inference. In addition, the final monitoring plan should avoid the problems identified in Peterson and Bishop (2005). The final monitoring plan used for determining impacts to biological resources should receive written concurrence from NMFS prior to project implementation. This recommendation should be included as a mitigation measure in the record of decision.

Fish and Wildlife Coordination Act Comments

16 U.S.C. 662 (a) states that whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first shall consult with the United States Fish and Wildlife Service, Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular State wherein the impoundment, diversion, or other control facility is to be constructed, with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as

providing for the development and improvement thereof in connection with such water-resource development.

Reorganization Plan No. 4 of 1970 transferred all functions vested by law in the Bureau of Commercial Fisheries of the Department of the Interior or in its head, together with all functions vested by law in the Secretary of the Interior or the Department of the Interior which are administered through that Bureau or are primarily related to the Bureau to the Secretary of Commerce. NOAA NMFS is the primary agency within the Department of Commerce responsible for FWCA coordination.

The Corps states that the FWCA is an action that is taken between the USFWS and the Corps, not NMFS. The Corps' statement is inaccurate. As stated above, NMFS does have the authority to provide comments and recommendations through the FWCA. In fact, the Corps acknowledges NMFS' FWCA role on one of their websites (http://el.erdc.usace.army.mil/emrrp/emris/emrishelp5/fish_and_wildlife_coordination_act_legal_matters.htm). Below is an excerpt from the above referenced Corps website:

> *16 U.S.C. 662(a) provides that whenever the waters of any stream or other body of water are proposed to be impounded, diverted, the channel deepened or otherwise controlled or modified, the Corps shall consult with the U.S. Fish and Wildlife Service (FWS), the National Marine Fisheries Service (NMFS) as appropriate, and the agency administering the wildlife resources of the state. The consultation shall consider conservation of wildlife resources with the view of preventing loss of and damages to such resources as well as providing for development and improvement in connection with such water resources development.*

Mischaracterization of NMFS Comments and Involvement in the Review Process

A number of statements were made in the FEIS and in response to comments that mischaracterize NMFS comments and our involvement in the review process. Below, NMFS provides additional context and some examples of this mischaracterization.

In the Corps response to comments, they repeatedly emphasized their two year coordination with the resource agencies. NMFS notes that this coordination was not particularly effective or organized. Examples include the following: short notification for agency meetings, all interested agencies were not invited despite NMFS encouragement to do so, meeting times were delayed, meeting dates abruptly canceled, and clear and substantive information was often not provided at the meetings. Furthermore, much of the comments that were given to the Corps were superficially addressed. After submission of comments on the DEIS, an interagency meeting was held on January 31, 2011, to address the range of concerns expressed by various agencies. Despite acknowledgment of the Corps internal deadlines and commitment to continue discussions regarding the monitoring, mitigation, and reporting plan, the Corps did not follow up with NMFS. NMFS reached out to the Corps via email on February 25, 2011, but received no reply. NMFS believes many of the problems identified in the FEIS are attributable to the Corps' coordination approach.

On page 5-58, the following is stated:

> *Because resource agency recommendations for mitigation were only clarified in their response to the DEIS, development and certification of a habitat model to assess surfgrass impacts was not previously contemplated.*

This is an inaccurate statement. NMFS had provided a variety of input regarding surfgrass impact concerns during agency meetings, via email, and telephone discussions with Corps staff. These discussions culminated in a detailed email that was provided on August 5, 2010, which outlined many of NMFS concerns regarding the Corps proposed mitigation approach. For reference, the email chain is attached to this letter. Comments provided on the DEIS were generally consistent with the email comments.

Page 5-58 indicated that NMFS proposed a 5:1 mitigation ratio. This is incorrect. NMFS did not specifically identify a 5:1 ratio. Rather, NMFS questioned the appropriateness of estimating a 2 acre impact when 1) a comprehensive survey has yet to be conducted, 2) the T-street reef structure is roughly estimated at 5 acres, 3) the scattered reefs and boulders have not been well characterized with no reliable acreage estimate, 4) the T-street reef structure is within the equilibrium footprint in which cross-shore sand movement is expected to occur, 5) the DEIS indicates that some portions of surfgrass habitat within the equilibrium footprint already exhibit some burial. Thus, without additional information and justification, NMFS believed a 5 acre impact was a more appropriate worst case scenario.

On page 5-50, the Corps implies that NMFS was not forthcoming during the two year coordination process when we recommended the use of the San Diego Nearshore Program data at the January 31, 2011, meeting. NMFS recommended its use to provide additional information for the Corps NEPA document, not as a means of serving as a baseline dataset for determining impacts. NMFS would like to remind the Corps that the Nearshore Program was a cooperative effort involving their agency.

Closing Summary and Recommendations

NMFS believes protection of existing infrastructure and maintaining recreational opportunities associated with beach usage are important ecosystem services. However, repeated beach fill projects may have an environmental cost to various natural resources. These costs should be incorporated into the analysis to ensure the benefit to cost ratio is not skewed. Unfortunately, the views expressed by NMFS regarding potential impacts, mitigation, and monitoring have not been fully considered in the FEIS. Therefore, NMFS is concerned that the Corps may have underestimated the potential environmental costs of the project. Based on January 2011 price levels, the estimated initial construction cost of the plan is $11,100,000, for which the Federal share is approximately $7,220,000 and the non-Federal share is approximately $3,890,000. Total periodic nourishment costs are estimated to be $84,900,000 (January 2011 price level) over the 50-year period following initiation of construction, for which the Federal share is approximately $42,450,000 and the non-Federal share is approximately $42,450,000. Given the concerns expressed on this project, NMFS believes the Corps should re-evaluate their cost estimates to

ensure the project still achieves a positive benefit/cost ratio prior to further planning and implementation of a 50 year project costing $96,000,000.

Below is a summary of NMFS recommendations that should be addressed prior to a record of decision:

- The Corps should explicitly discuss how they addressed the comments provided by the Independent External Peer Review.

- The Corps should assume a minimum 5 acre impact to surfgrass/reef to help ensure that adequate funds are budgeted for potential mitigation costs. This recommendation is also consistent with a recommendation provided by the USFWS in their Final Coordination Act Report. This estimate should be adopted within the record of decision.

- The sampling design and statistical analyses of the final monitoring plan should be clearly described and should be based upon fundamental principles of statistical inference. In addition, the final monitoring plan should avoid the problems identified in Peterson and Bishop (2005). The final monitoring plan used for determining impacts to biological resources should receive written concurrence from NMFS prior to project implementation. This recommendation should be included as a mitigation measure in the record of decision.

- The Corps should coordinate with NMFS and other interested agencies to develop an appropriate functional assessment for impacts to surfgrass and rocky reef habitat. The final functional assessment used for determining appropriate mitigation to biological resources should receive written concurrence from NMFS prior to project implementation. This recommendation should be included as a mitigation measure in the record of decision.

- The Corps should include a monitoring and enforcement program for each mitigation measure identified in the record of decision. NMFS also recommends that the Corps inform commenting agencies on the progress of mitigation measures they have proposed and make the monitoring results available to the public.

Enclosure(s):

Literature Cited

NMFS August 05, 2010, email discussing surfgrass mitigation with additional literature cited

Literature Cited

Craig, C., S. Wylie-Echeverria, E. Carrington, and D. Shafer. 2008. Short-term sediment burial effects on the seagrass *Phyllospadix scouleri*. ERDC TN-EMRRP-EI-03.

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NMFS August 05, 2010, email discussing surfgrass mitigation with additional literature cited

From: Bryant Chesney [Bryant.Chesney@noaa.gov]
Sent: Thursday, August 05, 2010 3:44 PM
To: 'Smith, Lawrence J SPL'; 'Bob Hoffman'; 'Clifford, Jodi L SPL'; 'Keeney, Thomas W SPL'
Cc: 'Lawrence Honma'
Subject: RE: Surf Grass Mitigation

NMFS appreciates Corps collaboration on this important topic and believe we are coming closer to agreement on how to address surfgrass impacts. However, there are various aspects of your proposal for which NMFS has concerns. We summarize them below.

According to Subpart E Section 230.43 of the Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (404(b)(1) Guidelines), vegetated shallows are considered special aquatic sites (SAS). SAS are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. This status provides special consideration when evaluating actions involving dredged or fill material pursuant to Section 404 of the Clean Water Act. Vegetated shallows are defined as permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation. NMFS believes surfgrass should be considered a SAS and receive special consideration when evaluating actions involving discharge of dredged or fill material.

Moreover, surfgrass is designated as a habitat area of particular concern (HAPC) for various federally managed fish species under the Pacific Groundfish Fishery Management Plans, as well as essential fish habitat (EFH) for various species within the Coastal Pelagics and Highly Migratory Species Fishery Management Plans. Surfgrasses (*Phyllospadix* spp.) are considered to be among the most productive seagrass systems on the planet (Ramírez-García et al. 1998). Galst and Anderson (2008) indicate that surfgrass beds serve as an important habitat for nearshore fishes, and the loss of surfgrass from disturbance has negative consequences for recruitment success. Surfgrass also serves as an important nursery habitat for a variety of invertebrates, such as California spiny lobster (Engle 1979, as cited in MPLA Initiative 2009), and as habitat for algae (Stewart and Myers 1980, as cited in MLPA Initiative 2009). Shaw (1986) suggests that the importance of surfgrass as a nursery for juvenile lobsters in southern California is clearly apparent and the disturbance or destruction of this habitat could seriously decrease lobster abundance. Surfgrass is also important foraging habitat for the endangered green turtle, *Chelonia mydas* on the Pacific side of the Baja Peninsula (Lopez-Mendilaharsu et al 2005). Although utilization of nearshore habitats in southern California is less understood, sub-populations of the endangered green turtle are known to utilize San Diego Bay and the Long Beach area for foraging. If surfgrass serves a similar function in southern California, then adverse effects to surfgrass habitat may have a negative impact on habitat used by this listed species.

Surfgrasses are likely to be impacted by beach nourishment and shoreline protection projects that place sand either directly or indirectly onto surf grass beds (Craig et al 2008). The Corps has acknowledged this in meetings, email correspondence, and draft environmental planning documents. As described in the 404(b)(1) Guidelines, the discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. In addition, the primary productivity of the system would be reduced if impacts were to occur. Surfgrasses exhibit late successional traits, recover very slowly from disturbance, require facilitation from algae before settling, and are strong competitors (Turner 1985). Removal of surfgrass from a rocky reef community has profound impacts to community structure (Turner 1985). Thus, surfgrass habitat is largely determined by patterns of disturbance. Repeated beach nourishment efforts likely will increase this rate of disturbance to these systems. Slow recovery times suggest that disturbances to these communities may be ecologically significant.

Given the high ecological values associated with surfgrass, NMFS believes unavoidable impacts to surfgrass should be addressed via compensatory mitigation and should comply with the 2008 mitigation rule. According to the rule, compensatory mitigation is defined as the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. The rule suggests that compensation for unavoidable impacts to difficult to replace (DTR) resources (e.g. bogs, fens, springs, streams, etc.) should be provided through in-kind rehabilitation, enhancement or preservation. Given the slow recovery time and the difficulties associated with restoring this habitat, NMFS believes that surfgrass should be considered a DTR resource. Therefore, NMFS believes the Corps and/or the project partner should include in-kind surfgrass restoration or establishment as part of the mitigation plan. Therefore, NMFS does not concur with the Corps assertion that it not be considered "mitigation" in the technical sense of the term, nor do we concur that the NEPA/CEQA documents should refer to this as an unavoidable, unmitigable loss.

Although NMFS recognizes that surfgrass restoration techniques are not well established, recent successes have emerged. For example, Bull et al (2004) have demonstrated that surfgrass transplants that used sprigs survived and grew reasonably well, and regrowth of rhizomes that were cut to obtain sprigs for transplanting was rapid. They argued that the patterns of growth and survival of transplants and of recovery of donor plots, combined with the amount of effort involved, revealed that the largest gain in rhizome coverage per unit of effort occurred when sprigs were used. Moreover sprigs suitable for transplanting required relatively little effort to prepare and were abundant at study sites (Bull 2002), suggesting that collection of sprigs for transplanting would not have a large impact on existing surfgrass beds. Based upon this, Bull et al (2004) concluded that sprigs may be the most acceptable form for use in restoration.

Alternatively, MMS (1999) found that restoration of surfgrass beds using seeds and seedlings may be feasible. Sufficient numbers of seeds can easily be collected from most populations during most years to supply most restoration needs. Seeds readily germinate in the laboratory, or can be stored for several months and germinated when needed. Laboratory cultivation of large numbers of small seedlings for use in restoration is relatively simple and does not require any sophisticated equipment or facilities. Mortality rates are relatively high, though, so future efforts should reduce the likely sources of mortality to increase the efficacy of this technique. Holbrook et al. (2002) tested the use of seedlings in the field and attached seedlings to nylon rope to mimic natural conditions and achieved a survival comparable to that of control groups. The use of either sprigs or seedling transplants would minimize impacts to donor beds.

NMFS recognizes that transplant success is much higher for subtidal then for intertidal conditions. However, NMFS does not believe restoration efforts in the intertidal should be summarily dismissed within the mitigation plan, as implied in the Corps proposal. NMFS would be amenable to a smaller percentage of the mitigation addressing intertidal surfgrass habitat, but believes some good-faith effort should be applied to restore similar resources that may be lost due to the proposed projects.

The Corps has proposed a 1:1 ratio for surfgrass transplants and rocky reef impacts. The final mitigation rule suggests that higher mitigation ratios should be required where necessary to account for the method of compensatory mitigation, the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. Given the difficulties associated with mitigating for surfgrass and the time lag in recovery, a higher ratio is likely appropriate. NMFS recommends that the Corps consider the guidance provided by the final rule and provide a more detailed rationale for determination of the mitigation ratio. NMFS also offers to provide technical assistance to the Corps in developing an appropriate mitigation ratio.

The mitigation plan should also contain performance standards that will be used to assess whether the project is achieving its objectives. These performance standards should be based on attributes that are objective, verifiable, and can be measured with a reasonable amount of effort. Thus, we do not believe it

appropriate to not include success criteria, as the Corps has proposed. NMFS recommends that the Corps work with NMFS and other appropriate agencies to develop appropriate performance standards. That said, NMFS recognizes the potential for in-kind mitigation failure. The potential for failure, however, does not justify a mitigation plan with no success criteria. Instead, NMFS believes a contingency out-of-kind mitigation approach should be developed as a back-up in case surfgrass mitigation techniques prove unsuccessful. Out-of-kind mitigation should strive to offset similar ecological functions and values that may be lost due to surfgrass impacts. Functions of high importance to NMFS include: primary productivity, fishery and invertebrate habitat, and wave energy reduction. NMFS believes eelgrass and/or kelp may be appropriate surrogates for out-of-kind mitigation.

The rule further states that there should be sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be completed in accordance with its performance standards. The Corps indicates they would like to place a cap on surf grass mitigation costs. NMFS is unsure how placing a cap on the mitigation costs would provide sufficient financial assurances. Perhaps a more appropriate alternative approach is to place a cap on surfgrass transplant techniques based upon cost estimates provided by both typical mitigation practitioners, such as Corps has preliminarily done via inquiries with SAIC and Merkel, and other researchers with more experience with surfgrass restoration. If success criteria are not met, the Corps and/or project partner would then move to the contingency plan for which reasonable cost estimates could also be provided. Assuming the total cost estimates of surfgrass mitigation and the out-of-kind contingency plan have appropriate justification and provide sufficient financial assurances, then NMFS would believe this total estimate could be used as an appropriate dollar amount in the Corps cost-benefit analysis. Placing a funding cap that is not well justified could skew the cost-benefit analysis and should be avoided.

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From: Smith, Lawrence J SPL [mailto:Lawrence.J.Smith@usace.army.mil]
Sent: Friday, July 23, 2010 3:10 PM
To: Bob Hoffman; Bryant Chesney; Clifford, Jodi L SPL; Keeney, Thomas W SPL
Cc: Lawrence Honma
Subject: Surf Grass Mitigation

Recent discussion have taken place between the Corps and NMFS on the issue of surf grass losses and mitigation in southern California. I'd like to take this opportunity to present our understanding of the resolution reached during recent conversations. The point is to avoid any confusion and to ensure that we are in agreement on the details prior to moving forward, first with San Clemente and then with Encinitas/Solana Beach.

The first step, as with other impact categories, is to avoid surf grass impacts to the maximum extent practicable. The second step is to minimize unavoidable impacts. The third step is to mitigate remaining impacts. The concept of mitigation, as it applies to surf grass, follows. There are currently no proven methods of transplanting surf grass. However, there are some experimental methods that show promise. Our approach is to develop the experimental methods building towards a proven transplant method. There are several key assumptions in moving in this direction. First, transplant success is much higher for subtidal then for intertidal conditions. Initial projects therefore will focus on subtidal transplants only. This is particularly true for the first two projects where we anticipate creating artificial, subtidal reef habitat as mitigation for lost reef habitat thus creating new subtidal surf grass habitat. A portion of the reef would have to be built shallow enough to accommodate surf grass. Subtidal transplants are also safer then intertidal. Transplant area will be determined by actual impact as determined by monitoring. Post-construction monitoring of the surf grass in and adjacent to project sites will determine the actual area of surf grass lost as a result of each project. Transplant area will be on a 1:1 ratio, reef transplant ratio is

also on a 1:1 ratio for monitored reef losses. Post mitigation monitoring will be performed to track performance and to identify areas where the transplant method could be modified to improve success. We are proposing two years of post-mitigation monitoring. We are not including any success criteria nor are we including any additional transplant efforts at a given site. This is a one and done proposal for each project. Follow-on projects will incorporate lessons learned incorporating method modifications as we move towards an improved methodology.

Transplanting sprigs or plants require a donor bed for plant material. Studies have shown that surf grass is sensitive to losses from harvesting plants for transplant purposes. I'm not sure how to incorporate this concern. We could harvest plant material from that portion of the bed where potential impacts are expected. However, this would require maintaining that material alive ex-situ for one to two years post construction when mitigation would be constructed. Additionally, it could become a self-fulfilling prophesy where we weaken a bed that is then impacted partially as a result of the project and partially as a result of harvesting effects. An alternative approach would be to spread these impacts over a very large area focusing on harvesting plants from the interior of the bed and avoiding harvesting from edges. It appears that edge harvesting has more of an impact on the existing bed then does interior harvesting. A recommendation on this issue would be appreciated.

One additional measure that the Corps would like to propose is a cap on surf grass mitigation costs. This would be done separately for each project and would be based on predicted impacts. This would enable the Corps to incorporate a not to exceed cost into its calculations of total project costs for comparison to project benefits. This would greatly assist us in our planning and project authorization efforts. Initially the cap would be estimated based on known costs for eelgrass restoration multiplied by a factor of three to account for the more difficult conditions expected from open coastal restoration for surf grass as opposed to in-bay restoration encountered for eelgrass restoration. After conferring with both SAIC and Merkel & Associates, we propose that an initial cost of $180K per acre be used for a surf grass restoration cap. This is based on a cost of $60K per acre for recent eelgrass restoration efforts. Our methods for surf grass impact assessment tend to err on the conservative side and to overestimate impacts. This cap should then allow for mitigation at a 1:1 ratio should actual costs exceed the $180K per acre figure. This cap cost does not include the cost of monitoring.

This is a proposal for experimental transplants. As such, we have included no success criteria. This is not "mitigation" in the technical sense of the term. We cannot guarantee that impacts to surf grass will be "mitigated". Therefore, NEPA/CEQA documents will continue to refer to this as an unavoidable, unmitigable loss. We anticipate some success, so it will not be a total loss.

Please let me know if you have any questions with the above. We would also appreciate written concurrence from the NMFS.

Larry Smith
(213) 452-3846

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

San Clemente Shoreline Protection Project

NMFS Consultation Number: WCRO-2022-02052

Action Agency: U.S. Army Corps of Engineers

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely to Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely to Destroy or Adversely Modify Critical Habitat?
Green sea turtle; East Pacific Distinct Population Segment (*Chelonia mydas*)	Threatened	Yes	No	N/A	N/A

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

Issued By: Chris Yates
Assistant Regional Administrator for Protected Resources
West Coast Region
National Marine Fisheries Service

Date: May 8, 2023

TABLE OF CONTENTS

1. INTRODUCTION

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

1. Background

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

We previously completed an essential fish habitat (EFH) consultation on the proposed action in September 2010, in accordance with section 305(b)(2) of the Magnuson–Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR part 600.

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

2. Consultation History

NMFS previously reviewed the U.S. Army Corps of Engineers (USACE) Draft Environmental Impact Statement / Environmental Impact Report (EIS/EIR) for the San Clemente Shoreline Protection Project (Project), and provided comments to the USACE on September 20, 2010, pursuant to our responsibilities under the National Environmental Policy Act, Magnuson-Stevens Fishery Conservation and Management Act, Endangered Species Act (ESA), Marine Mammal Protection Act, and the Fish and Wildlife Coordination Act. In addition, NMFS Headquarters responded to the USACE's Final EIS/EIR via letter dated September 30, 2011, which summarized a number of concerns regarding the Project. In particular, NMFS noted that the USACE's response was inconsistent with key aspects of the essential fish habitat (EFH) recommendations we had provided in September 2010.

The USACE responded to our September 2011 letter on March 23, 2012 and addressed some of our concerns regarding the rocky reef monitoring and mitigation approach. The USACE indicated that a reasonable worst-case scenario of one acre of reef burial was used to estimate their contingency costs for mitigation. The USACE committed to implementing the rocky reef/surfgrass monitoring, mitigation, and reporting plan described in Appendix B of the

EIS/EIR, and indicated that it may be revised during the Preconstruction, Engineering and Design (PED) Phase. The USACE confirmed that the monitoring and analytical methods used would be adequate to identify and accurately measure impacts from the beach nourishment effort. If a more comprehensive biological survey of the project area would be required to accomplish the above, it would be accomplished during the PED phase. The final monitoring and mitigation reporting plan would ensure that appropriate mitigation sites are available to address potential impacts, and that the success criteria and analytical methods used are adequate to demonstrate a difference between impact/mitigation sites and control sites. To continue to work cooperatively throughout the final project planning and construction phases, the USACE indicated they would provide a copy of the final PED phase surveys and the monitoring plans to NMFS and other agencies for review.

USACE staff provided an electronic mail update on April 27, 2020, indicating they were in the PED phase, and shared a preliminary nearshore bottom habitat and submerged aquatic vegetation assessment (Nearshore Wetland Surveys 2018) and a monitoring report for the first year of pre-construction surfgrass monitoring (Ecomarine Consulting LLC and Anghera Environmental, 2019). NMFS staff noted during an interagency teleconference in June 2020 that the pre-construction surfgrass monitoring that had been conducted had not been coordinated for agency review as the USACE had committed to. In addition, we noted that Nearshore Wetland Surveys (2018) observed more rocky reef habitat within the project impact footprint than the estimate provided in the Final EIS/EIR. Moreover, we indicated that the surfgrass transects were not representative of the project impact site. Two of the three transects were not in the anticipated project impact footprint, and one transect was placed in the outermost portion of the anticipated project impact footprint. USACE staff followed up on June 4, 2020, indicating that the USACE would be revising the monitoring, mitigation, and reporting plan (MMRP), and would provide NMFS and other agencies an opportunity to review. On October 28, 2021, USACE staff provided the monitoring report for the two-year pre-construction surfgrass monitoring (Ecomarine Consulting LLC and Anghera Environmental, 2020).

NMFS received a letter on August 16, 2022, from the USACE requesting initiation of informal consultation under Section 7(a)(2) of the ESA regarding the effects of the Project on the federally ESA threatened East Pacific Distinct Population Segment (DPS) of green sea turtles (*Chelonia mydas*). The letter requested concurrence that the Project is not likely to adversely affect the federally threatened East Pacific DPS of green sea turtles under the ESA.

In response to the USACE's August 2022 letter, NMFS staff requested additional information on August 30, 2022, to support the consultation request, and USACE staff responded on September 15 and 25, 2022. These responses clarified the avoidance and minimization measures proposed in the August 2022 letter, and status of the rocky reef monitoring and mitigation approach. To supplement the pre-construction monitoring dataset generated in 2018 to 2020, the USACE proposed to conduct additional monitoring in the pre-construction phase, but did not provide an updated MMRP. Based upon the information provided and available at the time, NMFS staff responded on September 30, 2022, indicating that adverse effects to nearshore rocky reef

resources may make it difficult to conclude that effects to ESA-listed green sea turtles would be insignificant and/or discountable. In order to better understand the extent of green sea turtle foraging habitat that may be exposed to Project effects, NMFS staff requested that the USACE quantify the amount of rocky reef habitat in the sediment equilibrium footprint, which is the predicted area of potential sedimentation effects. Specifically, we requested quantification of the rocky reef area as observed in a 2018 memorandum regarding pre-construction monitoring for rocky reef and surfgrass habitat (Nearshore and Wetland Surveys, 2018). We also posed additional questions to help inform our effects analysis. USACE staff responded by email on November 3, 2022, with the rocky reef spatial data associated with the 2018 survey.

After considering the information in the August 16, 2022, letter, and additional information exchanges that had occurred through the interagency coordination process, we responded to the USACE in a January 6, 2023, letter that we were not able to concur with the USACE's effect determination for green sea turtles, and that we would prepare a biological opinion on the Project, in accordance with the standards and procedures for formal consultation under section 7 of the ESA as described in 50 CFR §402 et seq. For the purposes of initiating and completing formal ESA consultation on the Project, we evaluated the information provided by USACE through informal consultation and indicated that USACE had satisfied the requirements for initiating formal consultation under 50 CFR §402.14(c), and we considered formal consultation to have been initiated as an outcome of the conference call between NMFS and USACE staff on December 9, 2022.

On April 5, 2023, the USACE provided new information that indicated several artificial reef structures occur within the borrow site offshore Oceanside. After interagency staff discussion and additional email correspondence, the USACE indicated on April 18, 2023, that the USACE would establish a 300 foot operational buffer between the artificial reef modules and along the reef depth contour.

On July 5, 2022, the U.S. District Court for the Northern District of California issued an order vacating the 2019 regulations that were revised or added to 50 CFR part 402 in 2019 ("2019 Regulations," see 84 FR 44976, August 27, 2019) without making a finding on the merits. On September 21, 2022, the U.S. Court of Appeals for the Ninth Circuit granted a temporary stay of the district court's July 5 order. On November 14, 2022, the Northern District of California issued an order granting the government's request for voluntary remand without vacating the 2019 regulations. The District Court issued a slightly amended order two days later on November 16, 2022. As a result, the 2019 regulations remain in effect, and we are applying the 2019 regulations here. For purposes of this consultation and in an abundance of caution, we considered whether the substantive analysis and conclusions articulated in the biological opinion and incidental take statement would be any different under the pre-2019 regulations. We have determined that our analysis and conclusions would not be any different.

3. Proposed Federal Action

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

The Project purpose is to provide shoreline protection through nourishment of the beach near the San Clemente Pier. The USACE has determined that developing and maintaining the beach is needed to prevent beach erosion that results from winter storms and prevent damage to adjacent beachfront structures, including the heavily used rail line that runs along the beach through the City of San Clemente (City). In addition to the above, the USACE has determined that the loss of sand at the beach would have an impact on beach recreation, which contributes to the local economy, and would reduce the ecological functioning of the sand beach/littoral zone.

The Project involves dredging sediment from a borrow site offshore Oceanside Harbor, transporting the dredged material by barge offshore the nourishment site, and placing it at San Clemente Beach. Estimates based on regional monitoring suggest the beach nourishment fill will last about 6 years on average. Therefore, additional maintenance nourishment efforts will occur approximately every 6 years when the shoreline reaches the base beach width over the 50 year project life. Figure 1 shows the general location of the sediment placement in San Clemente and borrow site offshore of Oceanside. Figure 2 shows a map of the borrow site offshore Oceanside Harbor. The borrow site (Borrow Area 2) is approximately 940 acres, with a 128 acre area inside the borrow site (Borrow Area 2A) that contains the more desirable material. The USACE proposes to use Area 2A as the sediment source for the first nourishment event. Figure 3 indicates the proposed dredging offset used by the USACE to avoid the artificial reefs that occur within the borrow area.

Figure 1. Project location map illustrating sediment placement location in San Clemente and borrow site offshore of Oceanside.

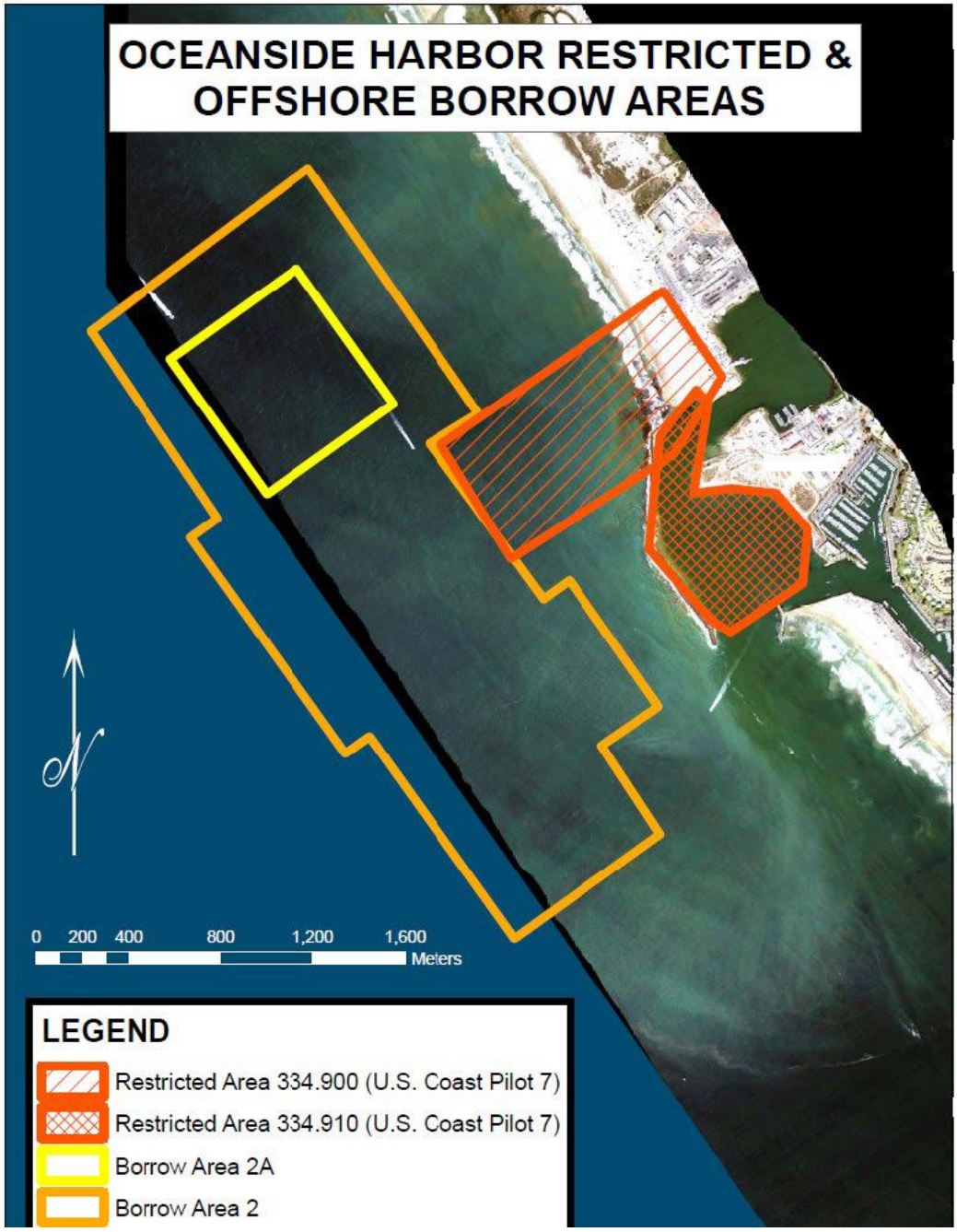

Figure 2. Oceanside Borrow Site. Dredging will be conducted in Area 2A.

Figure 3: Oceanside Borrow Area 2A – Artificial Reef Dredging Project.

The Project will nourish approximately 3,412 feet (1,040m) of shoreline within the City. The nourishment area is approximately centered about the San Clemente Pier and extends from T-Street to Linda Lane. The design beach berm elevation is +17 feet mean lower low water (MLLW), and the design beach width is 50 ft (15m). The first dredge and beach placement event will involve 250,000 cubic yards (cy) of beach compatible sand, with re-nourishment intervals projected every 5 to 6 years at approximately the same volumes. The ensuing intervals and quantities will largely be dependent on rate of beach erosion and funding availability. Beach design would be optimized based on lessons learned and resulting beach morphology following post-placement of the initial fill stage. As a result, future sediment volumes may change.

The Project will be constructed with hopper dredging equipment with pump ashore capability and conventional earthmoving equipment. The hopper dredge will be filled at the designated borrow site approximately one mile offshore of Oceanside and hauled approximately 21 miles (35 km) to San Clemente. The specific hopper dredge vessel and its hold capacity is unknown at this time. Based upon a project clarification provided by email, the USACE anticipates that the hopper dredge will take 75-80 round trips between the sediment borrow site offshore Carlsbad and placement site in San Clemente. Anticipated vessel speed of the unloaded hopper transiting to the Oceanside borrow area would be approximately 11-13 knots, and 8-10 knots when loaded

with sediment and transiting to San Clemente. No support vessels are anticipated to be needed during transit. At the receiver beach, the dredge will be attached to a moored floating section of pipeline extending 1,500 ft (457 m) to the shoreline. The material would be resuspended and discharged through the on-board pumping system to the receiver site. During construction, onshore sediment placement will utilize berms to minimize nearshore impacts and retain sediments on the beach.

The hopper dredge requires a monobuoy to discharge its sand onto the beach. A monobuoy is a floating pipeline connection platform that is moored to the seafloor and interconnects with a steel sinker pipeline that carries the slurry along the seafloor to the beach. For this Project, the monobuoy would be anchored in at least 25 ft (7.6 m) of water, between 2,500 and 5,000 ft (762 to 1,524 m) from shore, in the appropriate location in relation to sensitive resources and engineering considerations. From one monobuoy location, sand can be pumped directly onshore and up to approximately 2,000 ft (610 m) alongshore in either direction. One to two support tugs will be utilized to assist the hopper dredge hook up to the monobuoy. One to three derrick barges will be used at the beginning and end of construction to install and remove the pipeline. These support vessels will limit their speed to inside wake zone speeds.

Dredging would be performed 24 hours a day, 7 days a week. Shore equipment would work 12 hours a day, 7 days a week. The Project duration is estimated at 46 working days over the course of 4 months. The first dredging and fill event is scheduled to occur in late Fall/Winter 2023, with subsequent fill events planned to occur at intervals dictated by funding availability and need over a 50-year time horizon. Prior to each subsequent dredge and fill event, the USACE will evaluate whether any changed conditions have occurred to the environmental baseline or project effects that would trigger the need for a new consultation.

The following measures will be implemented by USACE to avoid or minimize impacts to the federally threatened East Pacific DPS of green sea turtles.

1. During dredging, transit to and from the Oceanside Borrow Site, and placement of dredged material at the Placement Area, a qualified biologist or qualified monitor with experience monitoring green sea turtles will be onboard the hopper dredge to monitor for the presence of green sea turtles. The green sea turtle monitor will identify and communicate if there is a need to cease or alter operations to avoid impacts to green sea turtles.

2. During dredging, the biological monitor will periodically check in the hopper for the presence of green sea turtles. The biological monitor will also be equipped with a VHF radio to communicate with bridge officers, whose elevated vantage point is the best place on the hopper dredge to observe the hopper. If any evidence of turtles is detected, the bridge crew will immediately communicate with the biological monitor.

3. Nighttime lighting will illuminate an approximately 50 to 100 foot perimeter during dredging and placement operations. During nighttime operations, the biological monitor will visually observe the lighted perimeter for turtle presence.

4. The biologist or monitor will clear the dredging area and confirm no green sea turtles are present 30 minutes prior to the startup of dredging operations.

5. If a green sea turtle is observed within the vicinity of the project site during project operations, all appropriate precautions shall be implemented to avoid or minimize unintended impacts. These precautions include, but are not limited to:

- Cessation of operations within 100 feet of an observed green sea turtle;
- Operations may not resume until the green sea turtle has departed the monitoring zone by its own accord or has not been observed for a 15-minute period of time; and
- Maneuver the hopper dredge to avoid any free-swimming green sea turtles observed during transit.

6. Biological monitors will maintain a written log of all green sea turtle observations during project operations. This observation log will be provided to the USACE and NMFS as an attachment to the post-construction report for the project. Each observation log will contain the following information:

- Observer name and title;
- Type of construction activity (maintenance dredging, etc.);
- Date and time animal first observed (for each observation);
- Date and time observation ended (for each observation). A green sea turtle observation will terminate if (1) an animal is observed exiting the monitoring zone or (2) after a 15-minute period of no observation (assumption is that animal has exited, but was not observed to do so);
- Location of monitor (latitude/longitude), direction of green sea turtle in relation to the monitor, and estimated distance (in meters) of green sea turtle to the monitor; and
- Nature and duration of equipment shutdown.

7. Any observations involving the potential “take” of green sea turtles will be reported to the USACE within 10 minutes of the incident and to the NMFS stranding coordinator immediately thereafter.

8. The Contractor will implement an Environmental Protection Plan that will include a green sea turtle Monitoring and Avoidance Plan and an employee training program on green sea turtle observation protocols, avoidance, and minimization measures. The program will be conducted by the Biological Monitor and a record kept of dates of training, names and positions of attending employees, and an outline of the training presentation.

The USACE would also implement the rocky reef/surfgrass monitoring, mitigation, and reporting plan (MMRP) described in Appendix B of the EIS/EIR. The USACE confirmed that the monitoring and analytical methods used would be adequate to identify and accurately measure impacts from the beach nourishment effort. The final MMRP would ensure that appropriate mitigation sites are available to address potential impacts and that the success criteria and analytical methods used are adequate to demonstrate a difference between impact/mitigation sites and control sites. In order to supplement the pre-construction survey and monitoring efforts conducted between 2018 and 2020, the USACE has proposed to conduct additional monitoring in the pre-construction phase to address identified nearshore data gaps. However, the USACE has not provided any written details regarding the proposed additional monitoring.

Based upon the monitoring and mitigation plan described in the EIS/EIR, shallow subtidal surfgrass beds and rocky reefs in the vicinity of San Clemente Beach sediment placement site shall be monitored to determine whether the Project adversely affects shallow subtidal reefs and surfgrass. Underwater transects shall be established offshore and downcoast from the proposed receiver beach. Control transects also shall be established upcoast of the project area. The transects shall be monitored by qualified biologists before and after the proposed action to determine whether the beach fill results in a long-term loss of surfgrass and/or reef habitat. If adverse significant impacts to surfgrass and/or reef habitat compared to controls and baseline conditions are observed from the monitoring, subsequent nourishment activities will be modified to avoid or minimize these impacts as part of adaptive management. If adverse significant impacts still are observed after all reasonable attempts to avoid or minimize impacts have been exhausted, additional renourishment would not occur until impacted surfgrass has recovered or compensatory mitigation is completed. Compensatory mitigation will consist of the creation of shallow rocky habitat in the Project area at a site to be determined in consultation with NMFS and CDFW. Rocky reef habitat will be created in the Project area at a ratio of 1 acre of rocky reef habitat created for 1 acre of rocky reef habitat buried. If the monitoring determines that surfgrass has been affected by the Project, an experimental surfgrass restoration will be implemented.

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

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

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species or to adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS, and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an

opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

1. Analytical Approach

This biological opinion includes a jeopardy analysis, but no adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species. No critical habitat has been designated for Eastern Pacific DPS green sea turtles, therefore critical habitat and the "adverse modification" standard are not considered in this biological opinion

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

We use the following approach to determine whether a proposed action is likely to jeopardize listed species:

- Evaluate the range wide status of the species expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species.
- Evaluate the effects of the proposed action on species using an exposure–response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species, analyze whether the proposed action is likely to directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.
- If necessary, suggest a reasonable and prudent alternative to the proposed action.

In this biological opinion, we specifically evaluate the risks of direct contact injuries for ESA-listed green sea turtles, as well as potential impacts of disturbance, associated with the proposed action. In addition, we consider the adverse effects of harassment of ESA-listed green sea turtles as a result of the proposed action. Consistent with the "Interim Guidance on the Endangered

Species Act Term 'Harass'" (NMFS 2016a), we interpret harass in a manner similar to the USFWS regulatory definition for non-captive wildlife:

"Create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering."

Under this "Interim Guidance" we interpret the phrase "significantly disrupt normal behavioral patterns" to mean a change in the animal's behavior (breeding, feeding, sheltering, resting, migrating, etc.) that could reasonably be expected, alone or in concert with other factors, to create or increase the risk of injury to an ESA-listed animal when added to the condition of the exposed animal before the disruption occurred. An injury in the context of analyzing behavioral responses could be a physical injury or a physiological or other impact that would reasonably be expected to negatively affect the animal's growth, health, reproductive success, and/or ability to survive (i.e., an effect that results from a more than inconsequential behavioral response). Harassment does not require that an injury actually result or is proven; only that the behavioral response creates or increases the likelihood of injury.

2. Rangewide Status of the Species

This biological opinion examines the status of the East Pacific Distinct Population Segment of green sea turtle that is likely to be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' "reproduction, numbers, or distribution" for the jeopardy analysis.

In 2016, NMFS finalized new listings for 11 green sea turtle DPSs, including listing the East Pacific DPS as threatened (81 FR 20057). The East Pacific DPS includes turtles that nest on the coast of Mexico which were historically listed under the ESA as endangered. All of the green turtles DPSs were listed as threatened, with the exception of the Central South Pacific DPS, Central West Pacific DPS, and the Mediterranean DPS which were listed as endangered Seminoff et al. 2015).[1] Recently the IUCN assessed the East Pacific "regional management unit of green sea turtles as "vulnerable," which was downlisted from a previous "endangered" status (IUCN 2021). Currently, NMFS and USWFS are considering designating critical habitat for the East Pacific green sea turtle DPS as well as several other (five) DPSs within U.S. jurisdiction. Based on a settlement agreement with several non-profit organizations, the agencies shall propose a determination concerning the designation of critical habitat on or before June 30, 2023.

[1] The 2015 biological status report that was used to support the recent listing activities (Seminoff et al. 2015) can be found at: http://www.nmfs.noaa.gov/pr/species/Status%20Reviews/green_turtle_sr_2015.pdf

Green turtles are found throughout the world, occurring primarily in tropical, and to a lesser extent, subtropical and temperate waters. The species occurs in five major regions: the Pacific Ocean, Atlantic Ocean, Indian Ocean, Caribbean Sea, and Mediterranean Sea. Molecular genetic techniques have helped researchers gain insight into the distribution and ecology of migrating and nesting green turtles. Throughout the Pacific, nesting assemblages group into two distinct regional areas: 1) western Pacific and South Pacific islands, and 2) eastern Pacific and central Pacific, including the rookery at French Frigate Shoals, Hawaii. In the eastern Pacific, greens forage coastally from the U.S. West Coast (42°N) in the north, offshore in waters up to 1,000 miles from the coast and south to central Chile (40°S). The northern and southern boundaries of this DPS extend from the aforementioned locations in the U.S. and Chile to 143°W and 96°W, respectively (Seminoff et al. 2015). Green turtles found in the Gulf of California originate primarily from the Michoacán nesting stock. Green turtles foraging in southern California and along the Pacific coast of Baja California originate primarily from rookeries of the Islas Revillagigedos (Dutton 2003) and within the state of Michoacán (Dutton et al. 2019). Green sea turtles in the east Pacific are migratory as adults, conducting reproductive migrations every three years on average between their natal nesting sites and foraging areas. Individuals show fidelity to foraging areas, often returning to the same areas after successive nesting seasons. In neritic foraging areas, green turtles in the eastern Pacific are omnivorous, consuming marine algae, seagrass, mangrove parts and invertebrates. Green turtles in the wild are estimated to attain maturity at 15-50 years (Avens and Snover 2013), with East Pacific green turtles averaging 30 years to maturity.

Population Status and Trends: NMFS and USFWS (2007) provided population estimates and trend status for 46 green turtle nesting beaches around the world. Of these, twelve sites had increasing populations (based upon an increase in the number of nests over 20 or more years ago), four sites had decreasing populations, and ten sites were considered stable. For twenty sites there are insufficient data to make a trend determination or the most recently available information is too old (15 years or older). A complete review of the most current information on green sea turtles is available in the 2015 Status Review (Seminoff et al. 2015). The most recent IUCN assessment of the east Pacific population of green turtles was conducted in 2021 (Seminoff and Glass 2020).

Green turtles that may be found within the action area likely originate from the eastern Pacific Ocean area, and based on genetic analyses and satellite tracking of sea turtles foraging in San Diego Bay, likely originate from nesting sites in the Revillagigedo Archipelago and the coast of Michoacán, Mexico (Dutton et al. 2019). Green turtles in the eastern Pacific were historically considered one of the most depleted populations of green turtles in the world. The primary green turtle nesting grounds in the eastern Pacific are located in Michoacán, Mexico (Colola Beach (~74.4 percent of nesting in the state) and Maruata (24.1 percent of nesting in the state), and the Galapagos Islands, Ecuador (NMFS and USFWS 1998) which comprise approximately 71 percent of all nesting females, and linkages between these nesting sites and foraging areas from northwestern Mexico to Peru have been established via flipper tag recoveries and satellite

telemetry (Seminoff and Glass 2020). Here, green turtles were widespread and abundant prior to commercial exploitation and uncontrolled subsistence harvest of nesters and eggs. Sporadic nesting occurs on the Pacific coast of Costa Rica. While shallow genetic substructure has been observed in East Pacific green turtles, manifesting as slight morphological differences, Dutton et al. (2014) suggest that green turtles from the Revillagigedos Archipelago are rooted in the broad eastern Pacific genetic clade.

Information has been suggesting steady increasing in nesting at the primary nesting sites in Michoacan, Mexico (Colola Beach), and in the Galapagos Islands since the 1990s (Delgado and Nichols 2005; Senko et al. 2011), although at some of these sites, they are still lower than past annual number of deposited clutches. Colola Beach is the most important green turtle nesting area in the eastern Pacific; it accounts for 75 percent of total nesting in Michoacán and has the longest time series of monitoring data since 1981. Nesting trends at Colola (25,008 clutches/year based on data from 2015-2018) is 52 percent less than the past three generations ago (early 1980s; 51,781 clutches per year), while at Galapagos, albeit a smaller population, the mean annual number of deposited clutches increased by 70 percent (from 3,082 to 5,233 clutches per year) since the late 1970s to early 1980s (Seminoff and Glass 2020).

As mentioned above, most green turtles found off the U.S. West Coast and in the action area likely originate from the Revillagigedos Archipelago and the coast of Michoacán, Mexico. The most recent survey (2008) from Revillagigedos estimated that as many as 500 nests were laid over a 4-week period, which the most recent status review (Seminoff et al. 2015) used to estimate nester abundance at 500 females.

Green sea turtle nesting in the eastern Pacific has increased steadily since the early 1980s, which is likely due to increased protection at nesting beaches, minimized threats to sea turtles in foraging areas, and advances in sea turtle fisheries bycatch reduction throughout the region. Seminoff et al. (2015) estimated the total abundance of mature females in the East Pacific DPS to be at least 20,062 females.

Three resident foraging populations of green turtles have been observed in nearshore waters adjacent to the proposed action area. South San Diego Bay serves as important habitat for a resident population of approximately 60 juvenile and adult green turtles (Eguchi et al. 2010). There is also an aggregation of green sea turtles that is persistent in the San Gabriel River and surrounding coastal areas in the vicinity of Long Beach, California as well as in Seal Beach, California (Lawson et al. 2011; Crear et al.2016; Crear et al. 2017). Seasonal shifts in movement and distribution of green turtles in the Long Beach/Seal Beach area show that green turtles in the San Gabriel River use warm effluent from two power plants as a thermal refuge, although the river sustains juveniles and adults year-round (Crear et al. 2016). More recently, Hanna *et al.* (2021) have documented a small resident foraging population at La Jolla Shores.

A stable isotope study on 718 green turtles foraging at 16 areas (including off the coast of California) indicate that turtles of this DPS are omnivorous (Seminoff *et al.* 2021). Another

stable isotope study indicates that East Pacific green turtles in San Diego Bay forage on invertebrates (50 percent), seagrass (26 percent), and to a lesser extent red and green algae (Lemons *et al.* 2011). These data are consistent with studies of East Pacific green turtles outside of U.S. jurisdiction (e.g., waters of Mexico, Colombia, and Galapagos Islands) that also demonstrate omnivorous diets (Seminoff *et al.* 2002; López-Mendilaharsu *et al.* 2005; Amorocho and Reina 2007; Carrión-Cortez *et al.* 2010). A study of green sea turtle diet to the south along the Pacific Coast of Baja California, Mexico, indicate that surfgrass was the most prevalent source of forage for green sea turtles in those coastal waters (Lopez-Mendilaharsu *et al.* 2005). Green turtles in the San Gabriel River forage on algae and invertebrates that attach to rocky bottoms and hard man-made structures (Crear *et al*. 2017). The main prey item consumed by turtles at the La Jolla Shores location was a filamentous species of Rhodophyta, red algae (Hanna *et al.* 2021).

Threats: A thorough discussion of threats to green turtles worldwide can be found in the most recent status review (Seminoff et al. 2015). Major threats include: coastal development and loss of nesting and foraging habitat; incidental capture by fisheries; and the harvest of eggs, sub-adults and adults. Climate change is also emerging as a critical issue. Destruction, alteration, and/or degradation of nesting and near shore foraging habitat is occurring throughout the range of green turtles. These problems are particularly acute in areas with substantial or growing coastal development, beach armoring, beachfront lighting, and recreational use of beaches. In addition to damage to the nesting beaches, pollution and impacts to foraging habitat is a concern. Pollution run-off can degrade sea grass beds that are the primary forage of green turtles. The majority of turtles in coastal areas spend their time at depths less than 5 m below the surface (Schofield et al. 2007; Hazel et al. 2009), and hence are vulnerable to being struck by vessels. Collisions with boats are known to cause significant numbers of mortality every year (NMFS and USFWS 2007; Seminoff et al. 2015). Marine debris is also a source of concern for green sea turtles especially given their presence in nearshore coastal and estuarine habitats. In southern California, green turtles forage in urbanized environments and therefore are more exposed to anthropogenic contaminants and pollutants. Sea turtles captured in Seal Beach and San Diego Bay in southern California were found to have higher trace metal concentrations (e.g., selenium and cadmium) than green turtles that inhabit non-urbanized areas (Barraza et al. 2019). A related study found that green sea turtles foraging in San Diego Bay had significantly higher total polychlorinated biphenyls (PCBs) than turtles in Seal Beach, and that these non-dioxin-like PCB congeners may be associated with neurotoxicity (Barraza et al. 2020).

The bycatch of green sea turtles, especially in coastal fisheries, is a serious problem in the Pacific because many of the small-scale artisanal gillnet, setnet, and longline coastal fisheries throughout the Pacific are not well regulated. These are the fisheries that are active in areas with the highest densities of green turtles (NMFS and USFWS 2007). In the northern portions of the East Pacific DPS, bycatch in fisheries has been less well-documented. However, along the Baja California Peninsula (Mexico), hundreds of green turtles were reported stranded (suspected bycatch) in Bahia Magdalena (Koch et al. 2006). In Baja California Sur, Mexico, from 2006-2009, small-scale gillnet fisheries caused massive green sea turtle mortality at Laguna San Ignacio, where an

estimated 1,000 turtle were captured each year in a fishery targeting guitar fish (Mancini et al. 2012). Bycatch of green turtles has also been reported in Peru and Chile. While the problem persists, innovated bycatch reduction techniques and monitoring approaches have likely reduced bycatch of all sea turtle species. The meat and eggs of green turtles has long been favored throughout much of the world that has interacted with this species. As late as the mid-1970s, upwards of 80,000 eggs were harvested every night during nesting season in Michoacán (Clifton et al. 1982). Even though Mexico has implemented bans on the harvest of all turtle species in its waters and on the beaches, poaching of eggs, females on the beach, and animals in coastal water continues to happen. In some places throughout Mexico and the whole of the eastern Pacific, consumption of green sea turtles remain a part of the cultural fabric and tradition (NMFS and USFWS 2007; Seminoff and Glass 2020).

Like other sea turtle species, increasing temperatures have the potential to skew sex ratios of hatchling and many rookeries are already showing a strong female bias as warmer temperatures in the nest chamber leads to more female hatchlings (Kaska et al. 2006; Chan and Liew 1995). Increased temperatures also lead to higher levels of embryonic mortality (Matsuzawa et al. 2002). An increase in typhoon frequency and severity, a predicted consequence of climate change (Webster el al. 2005), can cause erosion which leads to high nest failure (Van Houtan and Bass 2007). Rising sea levels can cause repeated inundation of nests and abrupt disruption of ocean currents used for natural dispersion during the green turtle life cycle. Green sea turtles feeding may also be affected by climate change. Seagrasses are a major food source for green sea turtles and may be affected by changing water temperature and salinity (Short and Neckles 1999; Duarte 2002).

Conservation: There have been important conservation initiatives and advances that have benefited East Pacific DPS green turtles. There are indications that wildlife enforcement branches of local and national governments are stepping up their efforts to enforce existing laws, although successes in stemming sea turtle exploitation through legal channels are infrequent. In addition, there are a multitude of non-profit organizations and conservation networks whose efforts are raising awareness about sea turtle conservation. When assessing conservation efforts, we assumed that all conservation efforts would remain in place at their current levels or improve. Among the notable regional and/or multinational conservation groups and initiatives are the Central American Regional Network for the Conservation of Sea Turtles, Grupo Tortuguero de las Californias (GTC), Permanent Commission of the South Pacific (CPPS), and the InterAmerican Convention for the Protection and Conservation of Sea Turtles (IAC). The Central American Regional Network resulted in the creation of a national sea turtle network in each country of the Central American region, as well as the development of firsthand tools, such as a regional diagnosis, a 10-year strategic plan, a manual of best practices, and regional training and information workshops for people in the region (e.g., Chacon and Arauz 2001). The GTC is a regional network in Mexico that brings together scientists, conservation practitioners, fishers, and local peoples to address sea turtle conservation issues. Perhaps the greatest achievement of this group was the large decrease in green turtle hunting and local consumption throughout

northwestern Mexico. The IAC is the world's only binding international treaty on sea turtle conservation. Signatory nations in the Eastern Pacific include Chile, Peru, Ecuador, Panama, Costa Rica, Honduras, Guatemala, Mexico, and the United States. This treaty endeavors to reduce fisheries bycatch and habitat destruction through a series of binding conservation agreements across these nations. All three of these initiatives work under the principle that benefits and achievements from working in alliance are much higher than those from working alone.

In southern California, NMFS has increased its outreach and education efforts to improve public awareness of the presence of green turtles and to reduce threats to foraging populations, particularly in San Diego Bay, the San Gabriel River and adjacent watershed, as well as estuaries such as Agua Hedionda and Mission Bay. Local threats to green turtles primarily include recreational fishing and vessel strikes, and NMFS has worked with partners to develop educational materials and signs to specifically address those threats.

NMFS and U.S. Fish and Wildlife Service (FWS) developed a recovery plan for U.S. Pacific populations of the East Pacific Green Sea Turtle that describes reasonable actions which are believed to be required to recover and/or protect the species (NMFS and USFWS 1998). One of the six major actions described in the Recovery Plan is to identify and protect primary foraging areas in U.S. jurisdiction. In addition, the Recovery Plan specifically recommends the prevention of degradation or destruction of marine habitats caused by dredging or disposal activities. Dredging causes mechanical destruction of benthic habitats, increases sedimentation that may damage algae and seagrasses, and disposal of dredged materials smothers existing flora and fauna. Some types of dredging also directly kills turtles.

3. Action Area

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area for this project includes Oceanside Harbor, the sediment borrow site offshore Oceanside Harbor, the sediment placement and associated equilibrium footprint at the San Clemente disposal site, and the vessel route between the Oceanside Harbor, sediment borrow and disposal sites. Figures 1-3 above illustrate the action area. Figure 4, below also helps illustrate the potential extent of project effects. The sediment equilibrium footprint is where sand that has been placed onto the beach is predicted to ultimately end up and result in some degree of rocky reef sedimentation and/or burial.

4. Environmental Baseline

The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the

anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

Status in the Action Area

As described in the *Rangewide Status* section, there are at least three known resident green sea turtle populations in Southern California. Foraging resident populations are found in San Diego Bay, La Jolla Cove, and the San Gabriel River/Anaheim Bay wetland complex. The proposed project lies geographically between these three areas of known green sea turtle residence. Green sea turtle adults and benthic-foraging juveniles generally occupy small home ranges that include foraging resources and underwater refugia. However, some individuals move long distances between foraging areas, including one individual tracked from San Diego Bay to a foraging area near Long Beach, California (SWFSC unpublished data 2016). In 2006, a green sea turtle outfitted with a satellite transmitter was tracked and traveled from Long Beach to the San Onofre nuclear power plant. Hanna *et al.* (2020) documented two green sea turtles leaving the Anaheim Bay area into nearby offshore waters as far south as Dana Point, which is in relative close proximity to the San Clemente sediment placement location.

Green turtle strandings are documented each year along the U.S. West Coast, with most of these strandings occurring in Southern California. Numerous strandings have occurred along the northern San Diego County and Orange County coastlines in the project vicinity. Causes of green turtle strandings in Southern California include power plant entrainment, vessel collisions, fishing interactions, illness, gunshot wounds, and cold stunning. Because not all dead stranded sea turtles are necropsied and causes of death can be difficult to ascertain in many circumstances during the limited evaluations conducted, the causes of the majority of strandings are unspecified or unknown. In the general vicinity of the action area (i.e., Dana Point to Carlsbad), there were a total of 67 green sea turtle strandings (17 dead and 50 alive) reported to NMFS between 1975 and 2021 (NMFS, unpublished stranding data). The largest concentration of stranding observations occurred at the San Onofre Nuclear Generating Station (SONGS) where 43 green sea turtles were entrained over multiple years. Some of these other strandings are from unknown origins, although boat collisions and interactions with recreational fishermen are likely the cause of many of these strandings. Two live green sea turtles were incidentally caught by recreational fishermen off the San Clemente Pier recently; one in 2018, the other in 2020.

In addition to stranding data, NMFS Southwest Fisheries Science Center developed a hotline email address in 2015 for the public to report opportunistic sightings of sea turtles along the West Coast. Forty five green sea turtle sightings have been reported within the general vicinity of the action area. A few sightings have occurred to the south at surfing beaches. In addition, multiple sightings have occurred just to the north at Doheny State Beach and Dana Point. Most

of the strandings and sightings occurred during the relatively warm water months, but some also occurred during the winter and spring months. In addition, most occurrences appear to be juveniles or sub-adults.

The action area has not been a subject of directed green sea turtle study as have some other estuarine/nearshore areas in southern California. Given the relatively high number of strandings and sightings in the action area, green sea turtles are, at a minimum, occasionally using the action area to support seasonal foraging forays and resting behavior. It is also possible that a small resident populations may be present in the general vicinity similar to the recently described La Jolla Cove resident population (Hanna *et al*. 2021). For example, the high number of live strandings at SONGS suggests that green sea turtles were consistently using the area for foraging and/or resting. As observed in San Diego Bay and the San Gabriel River, it is possible the warm water discharge from the power plant previously provided thermal refuge. In addition, there are a variety of rocky reef habitats that support productive algal, seagrass, and invertebrate communities that may serve as high quality foraging resources. Rocky reefs with crevices and/or overhangs may also support resting behavior.

The nearshore marine habitat in the sediment equilibrium footprint at the San Clemente disposal site contains a number of features that may support green sea turtle foraging and/or resting behaviors. The action area contains a variety of rocky habitats that support foraging resources, such as surfgrass, turf algae, macroalgae, and invertebrate communities, and may provide crevices and hard substrate to support resting behavior. Figure 4 is a summary figure provided by the USACE that demonstrates the extent of natural rocky reef habitat in the project vicinity. The light brown areas comprise rocky reef areas within the sediment equilibrium footprint, and the light blue areas are outside the estimated impact footprint. Of the bedrock and cobble substrates, 57.78 acres of those bottom types are within the sediment equilibrium footprint (Howo, personal communication).

The borrow site offshore Oceanside is predominantly soft bottom habitat with limited utility for foraging and resting purposes. However, a relatively small portion of the borrow pit also contains habitat features that may support green sea turtle foraging and/or resting behaviors. Specifically, the borrow site contains artificial reef modules that are part of a larger artificial reef complex established offshore Oceanside. Each reef module was constructed of 10,000 tons of quarry rock arranged over 128 acres in twenty four-modules. Four pairs of modules were constructed along each of three depth contours: shallow (42 ft), mid-depth (57 ft), and deep (72 ft) (Bedford 1993). The borrow site contains two and a half module pairs along the reef complex's shallow contour. A variety of fish, invertebrates, turf algae, and macroalgae were observed on these reef modules. The relatively high productivity of these reef features and the crevices provided by the three-dimensional structure may attract green sea turtles to use this area for foraging and/or resting.

Adjacent to the borrow site is Oceanside Harbor and the Del Mar Boat Basin, which also contains potential foraging and resting habitat. Eelgrass habitat occurs in both of these harbors (Merkel & Associates, Inc. 2023). In addition, the artificial reef structure provided by the jetties

and breakwater may support algae and invertebrate foraging resources, and underwater refugia for resting. For example, elsewhere in the U.S., Renaud *et al.* (1994) found that juvenile green turtles were closely associated with jetty habitat in south Texas and were likely to forage along extensive algal mats that occur there.

Figure 4: Rocky reef and hard bottom benthic habitat offshore San Clemente.

The small foraging population of green sea turtles at La Jolla Cove have been observed foraging and resting in habitat similar to that provided at the San Clemente site. The main prey item consumed by the small resident foraging population at La Jolla Shores was a filamentous species of Rhodophyta, red algae (Hanna *et al.* 2021), which is also found at the San Clemente site. The action area contains a variety of habitat features that support the foraging resources described above. We would expect that any green sea turtle found in the vicinity of rocky reef habitat supporting surfgrass, algae, and invertebrates would likely take advantage of the foraging opportunity, if available, and it is possible that these habitat features along the stretch of coastline where the Project is proposed to occur may attract green sea turtles to the area or increase the likelihood that turtles remain in the area longer than if simply transiting through. After consideration of the available stranding and sighting data, as well as the high quality habitat features at the San Clemente site, NMFS believes the likelihood of frequent occurrence by a number of sea turtles in the action area during significant portions of every year throughout the duration of the project is moderately high.

Coastal Development

In addition to the threats described above associated with turtle strandings, the following additional threats to green sea turtles and their foraging and resting habitat are known to occur in the action area. The USACE conducts maintenance dredging in Oceanside Harbor to support safe commercial, recreational, and military navigation operations. Construction occurs annually each spring, and involves dredging up to approximately 500,000 cubic yards. Dredging and disposal operations have the potential to result in direct interactions with turtles and/or modify green sea turtle foraging and/or resting behavior. City of San Clemente was previously issued a regional general permit for opportunistic beach nourishment activities at the Project sediment disposal location, but it was used only twice. In June 2005, approximately 5,000 cy of sediment was placed in the Project vicinity; and in November 2016, approximately 12,000 cy of sediment was placed in the Project vicinity. Sedimentation associated with beach nourishment has the potential to modify green sea turtle foraging and/or resting behaviors associated with adjacent rocky reef habitat. Military operations in the offshore environment between Oceanside and San Clemente have the potential to result in direct turtle interactions due to the various vessel operations associated with military exercises. In addition, immediately adjacent to Oceanside Harbor, various marina and dock related projects have occurred at the Del Mar Boat Basin. Some projects have resulted in adverse impacts to eelgrass habitat necessitating eelgrass mitigation in the area. These activities have the potential to modify green sea turtle foraging and/or resting behaviors. In addition, a significant artificial reef associated with SONGS's mitigation obligations occurs immediately offshore the action area. Phase 3 of the SONGS project was completed in 2020, which increased the artificial reef to 373 acres of low relief reef with ~45% cover of rock (UCSB 2023). The SONGS artificial reef contains moderately high quality foraging and resting features similar to natural rocky reef habitat.

Climate Change

Increased storm intensity and frequency may increase the rate of disturbance to surfgrass, algae, and invertebrate communities that typically inhabit shallow nearshore rocky reef habitat, which may reduce the quality of foraging resources for green sea turtles throughout their range, including in and around the action area. In addition, increasing ocean temperatures may increase the frequency and duration of green sea turtles in the action area. Green sea turtles are dependent on the ambient ocean temperature to support physiological processes such as digestion and growth (Avery et al., 1993). As sea temperatures increase, we anticipate the thermal properties of the action area to allow for greater foraging access and use, and may allow for higher growth rates, as observed elsewhere in thermal refuges found in southern California (e.g., Eguchi et al., 2012). Increased use of the area may increase the risk of exposure to harmful interactions with dredging operations.

5. Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action (see 50 CFR 402.02). A consequence is caused by the proposed

action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered the factors set forth in 50 CFR 402.17(a) and (b).

Approach to the Effects Analysis

NMFS determines the effects of the action using a sequence of steps. In this analysis, the first step identifies stressors (or benefits) associated with the proposed action with regard to listed species. The second step identities the magnitude of stressors (e.g., duration, extent, and frequency of the stressor and how many individuals of a listed species will be exposed to the stressors; *exposure analysis).* The third step describes how the exposed individuals are likely to respond to these stressors (e.g., behavioral changes or the injury or mortality rate of exposed individuals; *response analysis).* The final step in determining the effect of the action is establishing the risks those responses pose to listed species *(risk analysis).* In this step of our analysis, we will relate information on the number and age (or life stage), if applicable, of the individuals likely to be exposed to the proposed action's effects, along with the likely responses of those individuals to the proposed action, to an expected impact on the populations or subpopulations those individuals represent.

5.5.1. Exposure and Response

The information presented above in Section 2.4 *Environmental Baseline: Status in the Action Area* suggests that green sea turtle occurrence in the action area is likely. Given the limited amount of scientific study of green sea turtle abundance and distribution in the area, we do not have a specific estimate for the number of turtles that may reside within or occasionally visit the action area. Although occurrence may be relatively less likely or frequent during the early spring and winter months when water temperatures are coldest, NMFS has reasonable certainty that green sea turtles could occur within the action area at any time during the year, and the likelihood of frequent occurrence by a number of sea turtles in the action area during significant portions of every year throughout the duration of the project is moderately high. As a result, the effects analysis herein considers the significance of the action area for green sea turtles throughout the entire year, and assumes that presence will occur in varying degrees throughout the year, and during all of the proposed project activities.

Potential effects to green sea turtles from the proposed project would include: (1) direct contact injury associated with dredging, in-water construction, and vessel support operations; (2) general construction disturbance; and (3) impacts to foraging and resting habitat resulting from alteration or disturbance of benthic habitats from sediment disposal activities. Below we describe the exposure of green sea turtles to general construction activity disturbances, direct contact with construction activities, and changes to foraging habitats and the resulting responses of exposed sea turtles to those consequences of the proposed action.

Direct Contact Injury

Dredges, particularly hopper dredges, have the potential to exert significant injuries to sea turtles if they interact during dredging operations. Green sea turtles can become entrained in hopper dredges as the draghead moves along the bottom. Entrainment occurs when turtles cannot escape from the suction of the dredge and they are sucked into the dredge draghead, pumped through the intake pipe, and then killed as they cycle through the centrifugal pump and into the hopper (NMFS 2020). Because entrainment is believed to occur primarily while the draghead is operating on the bottom, it is likely that only those species feeding or resting on or near the bottom would be vulnerable to entrainment. They can also be entrained if suction is created in the draghead by current flow while the device is being placed or removed, or if the dredge is operating on an uneven or rocky substrate and rises off the bottom. Hopper dredge encounters with sea turtles are known to occur in the Southeastern U.S. and have been formally consulted upon numerous times by USACE and NMFS (NMFS 2020). Trailing suction hopper dredge operations in the Atlantic and Gulf of Mexico regions have resulted in more than 112 green sea turtle incidental take occurrences between 1995 and 2017 (Ramirez *et al.* 2017). In 2012, a dead green sea turtle was found near Encinitas in northern San Diego County with injuries consistent with contact from a hopper dredge (Harris 2014). NMFS understands that dredging activities coincident with the Regional Beach Sand Project Phase 2 permitted by the USACE were occurring in the vicinity of Encinitas during that time period, although that project was much larger in geographic scope.

The borrow site offshore Oceanside is predominantly soft bottom habitat with limited habitat value to support foraging and resting behaviors. Thus, NMFS green sea turtle use of that area may not be as frequent as other more preferred habitats in this region. However, a relatively small portion of the borrow pit also contains a few small artificial reef mounds that may support green sea turtle foraging and/or resting behaviors. Although there has been no directed study of green sea turtle distribution and movements within the action area, NMFS believes it is unlikely that green sea turtles routinely utilize the artificial reef modules within the sediment borrow pit given that they are relatively isolated from other significant areas of rocky reef habitat that likely provide more attractive and higher quality foraging and resting support. However, it is possible that occasional visits associated with coastal foraging and/or migratory turtles could occur. If turtles were to utilize the artificial reef modules for occasional foraging and/or resting purposes, the USACE's proposed avoidance of the immediate area by establishing an operational 300 foot buffer zone should help minimize the risk of entrainment or direct contact injury.

The Project includes monitoring and avoidance measures, which should reduce the likelihood of a harmful dredging interaction. However, visual monitoring methods may be limited during nighttime operations and/or heightened sea state. Green turtle dive duration may exceed 60 minutes, and green turtles only require two to three seconds to empty and refill their lungs. During winter months and/or cold water periods, the dive duration typically increases (Madrak *et al*. 2022). Given the potential brief time period at the surface, prolonged submergence time underwater, and the relatively small visual target provided by a surfacing turtle head, visual

monitoring methods may fail to detect green sea turtles in the action area during dredging operations.

Although we do not have an extensive record of mortality and/or injury associated with hopper dredges in southern California, we cannot discount the possibility of such an occurrence given the known presence of turtles in the action area, a previously documented stranding described as consistent with a harmful dredging interaction that was coincident with a similar project in northern San Diego County, and the 50 year time horizon of the Project. Each nourishment event involves dredging approximately 250,000 cy of sediment with 42 days of construction. Thus, green sea turtles in the action area would only be exposed to the risks of dredging interaction during a relatively brief period of time within the year. Therefore, NMFS does not believe the Project would necessarily result in multiple mortalities or injuries associated with the dredging operations. Based upon green sea turtle incidental take information associated with hopper dredging in the Southeast from 2014 through 2018, approximately one turtle was entrained for approximately every 2.7 million cys of dredged sediment (NMFS 2020). The Project anticipates dredging approximately 2.75 million cys over the course of 50 years. Although the data from the Southeast is not directly applicable to southern California given significantly more turtles in the Atlantic and Gulf of Mexico region, it provides some context to estimate entrainment risk to green sea turtles during dredging over the entire 50-year life of this proposed action. Given the available information, we conclude that one harmful green sea turtle interaction that could lead to a significant injury or mortality may occur during the course of this proposed action.

The Project also has the potential to result in direct contact injuries associated with vessel collisions. As described in the Environmental Baseline (section 2.4), vessel collisions are one of the most common sources of injury to sea turtles in southern California. However, the risks of direct contact injury for green sea turtles as a result of Project vessel operations is low given that most project vessels will limit their speed to inside wake zone speeds. The hopper dredge will move at more moderate speeds, up to 13 knots when unloaded. Given the benthic behavioral tendency of green sea turtles and the relatively deep water over which the hopper dredge will be transiting, we do not anticipate a high risk of collision. In addition, a green sea turtle monitor will be onboard the hopper during transit to and from the Oceanside Borrow Site to communicate if there is a need to cease or alter operations to avoid a collision with an observed turtle. The only additional in-water construction equipment associated with beach nourishment is the monobuoy and associated floating section of pipeline extending 1,500 feet to the shoreline at the San Clemente sediment disposal location. As this equipment will be stationary and floating, it is extremely unlikely that any measurable direct contact injury could result from these Project components.

Lastly, the Project has the potential to result in direct contact injuries associated with creation of shallow rocky reef as compensatory mitigation for any burial and/or adverse sedimentation effects. Although no detailed information was provided regarding reef construction, we assume the USACE would utilize a barge capable of transporting and placing reef construction materials (e.g., quarry rock, reef modules) and any necessary support vessels. Such vessel operations

typically operate as low enough speeds to avoid risk of direct contact injury. If green sea turtles were resting on the seafloor at the time of rock placement, turtles could be crushed or injured by the falling rock. However, NMFS believes such an occurrence to be extremely unlikely given the noise and disturbance associated with barge operations and anchoring. In addition, reef placement would occur in soft bottom areas that would be less likely to support resting turtles. We anticipate that turtles would avoid the reef placement area once the construction disturbance commences.

General construction disturbance

In general, all in-water construction projects present some risk of disturbance to any green sea turtles that may be present in the action area. In particular, proposed project activities that may involve the generation of loud underwater sounds have the potential to create disturbance for any green sea turtles in the vicinity. We expect that any individual turtles in the action area will generally attempt to avoid the immediate area where in-water construction noise is occurring. Avoidance of the immediate project area for relatively short periods of time during the 4 month construction window is not likely to be significant, given the relatively limited spatial scope of in-water construction work compared to available habitat elsewhere in the action area. Although renourishment events will introduce similar temporary disturbances in the future, they do not pose a cumulative effect of concern given the approximate 6 year time interval between events. If reef placement were to occur as compensatory mitigation, we assume that construction window would be similar or less. Therefore, we expect avoidance of the project area due to reef placement is also not likely to be significant.

Impacts to foraging and resting habitat

Sediment from the beach fill project will be redistributed by wave and tidal energy onto nearshore areas, which may bury rocky reef habitat, surfgrass, algae, and benthic invertebrates that support green sea turtle foraging and resting behavior. Sediment is expected to persist within the equilibration footprint for 6 years. The burial impacts will decrease as the fill naturally erodes, which will begin after equilibration is reached. At the end of approximately 6 years, the beach and nearshore profiles are expected to return to existing conditions, which triggers a renourishment event that begins another cycle of burial and/or sedimentation impacts.

Based upon information provided by the USACE, anticipated impacts to nearshore rocky reef habitat cannot be quantified with high temporal or spatial certainty due to modeling constraints. In their previous 2012 response, the USACE estimated one acre of reef burial as a reasonable worst-case scenario, and they used that impact estimate to calculate contingency costs for compensatory mitigation. However, this estimate was based on the assumption that there was only five acres of rocky reef in the sediment equilibrium footprint. Based upon acoustic surveys conducted in 2018, approximately 58 acres of rocky reef habitat (i.e., bedrock and cobble substrate) occurs within the sediment equilibrium footprint (Nearshore and Wetland Surveys 2018; Howo, personal communication). An updated quantitative impact assessment was not

provided by the USACE and the previous environmental documentation did not clearly explain how the USACE determined one acre of reef burial was the worst case estimate. The USACE's original worst case burial estimate is equivalent to 20% of the reef area previously assumed to occur within the sediment equilibrium footprint. In the absence of a more sophisticated sediment transport modeling analysis, NMFS assumes the worst case burial estimate is proportional to the area of reef subject to sedimentation within the equilibrium footprint. Thus, NMFS assumes that up to 11.6 acres (20% of 58 acres) of rocky reef may be adversely affected through sedimentation and burial effects. Sediment may eventually be redistributed by waves and currents outside the sediment equilibrium footprint allowing for some level of recovery, but the renourishment events may subsequently result in similar levels of burial resulting in a persistent cycle of habitat degradation over the course of the proposed action.

As mentioned above, green sea turtles are known to occur and transit within the action area, and may be found in the project area at any time during the year and take advantage of the available foraging and resting habitat in the project area, although NMFS anticipates reduced activity and/or presence during cold water periods. Rocky reef sedimentation and burial would likely reduce the quantity and quality of algae, invertebrates, and surfgrass, which would decrease the availability of foraging resources in the impact footprint. Sedimentation may also reduce the size and/or availability of reef crevices and overhangs that could support resting behavior. This reduction in the quantity and/or quality of rocky reef and associated biological communities would likely disrupt foraging and/or resting behaviors. Although the duration of sedimentation effects is uncertain, the project has a 50 year life span with multiple renourishment events. Based upon the above, NMFS concludes there will be persistent rocky reef habitat degradation and loss of potential green sea turtle foraging habitat as a result of the proposed project. Therefore, NMFS assumes the effects to foraging and resting behaviors would persist throughout the life of the project.

Although disruption of normal behaviors and movements for green turtles in and around the vicinity of the project area is relatively straightforward to anticipate based on the project description and our general understanding of green turtle behavior, it is very difficult to quantify the impacts of this disruption on the health of individual green turtles. A search of the scientific literature suggests that virtually no directed studies of sea turtle health effects resulting from behavior disruption have been conducted, so we do not have available scientific information to directly point to for this analysis. Instead, we must rely upon general biological and ecological principles to understand what the results of these impacts could be. Conceptually, we recognize that disruptions of important functions and behavior such as regular foraging and resting patterns can have adverse effects on the health of individual sea turtles. Possible adverse effects could include increased energy expenditures, reduced nutritional intake, temporary disorientation, or temporary abandonment of preferred habitat. It is possible that disruption could influence behavior patterns such that some individuals may discover or develop new areas of preferred habitat in other locations. Unfortunately, we also do not have any direct scientific information available to inform establishment of any thresholds for exactly how long or intense the disruptions have to be in order to produce some measurable reduction in overall health or fitness.

Currently, general characterizations of the health of individual sea turtles are not understood beyond obvious physical appearance without sophisticated veterinary examinations or laboratory analysis, typically conducted only on deceased individuals. The scale of possible impacts occasional, sustained, or multiple disruptions of normal behavior and life functions over extensive periods could have on the near-term health or fitness of a green turtle is expected to be highly variable and unique to each individual. In other analyses of potential impacts from coastal development projects, disruptions of behavioral patterns in those instances generally would have occurred in areas away from where NMFS expects green turtles typically spend significant portions of their time. Therefore, potential disruptions of behaviors for any period of time in those areas was not likely to significantly impact or disrupt their regular foraging movement and behavior patterns. This expectation supported conclusions that any regular or sustained disruptions of behavior in those areas was unlikely to have any detectable effect on health.

However, for this proposed action we cannot reach the same conclusions. The proposed project occurs in an area where multiple individuals of the species are expected to spend time foraging, resting, and/or migrating. We expect potential sedimentation effects will result in persistent changes to important biological and physical features that support normal foraging and resting behaviors. Therefore, we conclude the project will likely result in adverse effects through a significant disruption of normal behavior patterns that creates the likelihood of injury to the exposed individuals.[2]

The USACE has committed to implementing a rocky reef and surfgrass monitoring and mitigation plan to address sedimentation effects on nearshore reef communities. The USACE confirmed that the monitoring and analytical methods used would be adequate to identify and accurately measure impacts from the beach nourishment effort, and their final monitoring and mitigation reporting plan would ensure that appropriate mitigation sites are available to address potential impacts and that the success criteria and analytical methods used are adequate to demonstrate a difference between impact/mitigation sites and control sites. If adverse effects occur to rocky reef and/or surfgrass habitat, the USACE would create shallow rocky habitat in the Project area at a ratio of 1 acre of rocky reef habitat created for 1 acre of rocky reef habitat buried. If the monitoring determines that surfgrass has been affected by the Project, an experimental surfgrass restoration would be implemented. However, a final detailed mitigation plan and associated construction approach was not provided by the USACE. Therefore, it is uncertain to what extent the USACE's compensatory mitigation approach would specifically benefit green sea turtles. Although the beneficial effects of the compensatory mitigation are difficult to describe given the limited information provided by the USACE, NMFS does not

[2] In 2016, NMFS completed formal ESA consultation with the USACE that concluded disturbance from an eelgrass mitigation project that was proposed to be conducted in an area where high concentrations of green sea turtles were expected to occur in South San Diego Bay resulted in "take" in the form of harassment (NMFS 2016b). In 2019, NMFS completed formal ESA consultation with the U.S. Navy that concluded sustained disturbance and disruption of green sea turtle behaviors in and around Anaheim Bay could diminish the health and fitness of individuals for periods throughout the duration of a proposed action (NMFS 2019).

anticipate that rocky reef creation and/or surfgrass transplants would likely have any long term adverse effects to green sea turtle foraging and/or resting habitat.

Risk

As described in Section 5.5.1 *Exposure and Response*, we conclude that direct injury and disruption of normal behaviors resulting from the Project is likely to occur and result in adverse health effects to any individual sea turtles that reside or visit the action area where the proposed dredging and beach nourishment will occur. In particular, exposure to hopper dredging operations during multiple nourishment events over a 50 year time horizon may injure or kill green sea turtles at the sediment borrow site location. In addition, potential disruption of foraging and resting from loss and/or avoidance of rocky reef habitat at the nourishment site is anticipated to occur. The effects to turtles associated with rocky reef sedimentation impacts are uncertain, but disruption of normal foraging and resting patterns can have adverse impacts on the relative health of individuals. The definition of "take" under the ESA includes the term "harass," but that term is not further defined in the ESA. As described in Section 2.1. *Analytical Approach* in this biological opinion under our Interim Guidance (NMFS 2016a), we interpret harassment under the ESA to equate to significant disruption of normal behavior patterns (e.g., foraging) that could reasonably be expected, alone or in concert with other factors, to create or increase the risk of negatively affecting an ESA-listed animal's growth, health, reproductive success, and/or ability to survive (i.e., an effect that results from a more than inconsequential behavioral response). For the purposes of this analysis, we conclude that the proposed actions are expected to create or increase the risk of adversely affecting ESA-listed green sea turtles in the action area through significant disruption of normal behaviors patterns associated repeated sedimentation effects that will last throughout the duration of the Project.

In Section 2.4 *Environmental Baseline: Status in the Action Area*, we reviewed the available information regarding the abundance of green sea turtles in the area. Given the limited amount of scientific study in the area, we do not have a specific estimate for the number of turtles that may reside within or occasionally visit the action area. We assume that all individuals and demographic types that may occur in the action area are equally vulnerable to exposure to the effects of the Project. Although we do not have an extensive record of mortality and/or injury associated with hopper dredges in southern California, we cannot discount the possibility of such an occurrence. As a result, we concluded that up to one green sea turtle may be killed by the proposed action. Assuming a worst case scenario that the killed turtle is a reproductive female, such a loss would only result in a 0.005% reduction (one out of more than 20,000 nesting females) in the current estimated female green sea turtle nesting population of the East Pacific DPS, at most.

We also expect green sea turtles to be disrupted by project sedimentation effects, and/or be forced to move around or away from the project area. We acknowledge that the overall impact of these behavioral disruptions on the growth, health, fitness, or reproduction of an individual sea turtle is very uncertain, and likely to vary by individual. Ultimately, we conclude that the likely

responses for at least some exposed individuals would be reflective of adverse effects to health and behavior as a result of harassment due to expected project activities and impacts.

The adverse effects identified are relevant to dredging operations at the sediment borrow site offshore Oceanside Harbor and the beach nourishment site at San Clemente, and may begin as early as fall 2023. Although there are risks of detectable impacts to individuals associated with nearshore rocky reef sedimentation, we do not expect any significant long-term impacts that would result in the actual death or injury of any individual green turtles. The area affected by project activities is relatively small compared to amount of rocky reef and associated biological communities elsewhere in the action area and general vicinity. Based on our general understanding of green sea turtle behavior, we expect turtles may avoid the sediment borrow site area during dredging operations and the affected nearshore reefs at San Clemente, and utilize other parts of the action area, as well as other locations closer to the known resident populations. While physical or physiological impacts associated with increased stress levels or reduced nutritional intake as a result of disruption in normal behaviors are likely to occur to some degree, we expect these affects to be temporary. Given that the affected reef area is relatively small compared to reef available elsewhere in the general vicinity, we conclude that adequate habitat exists beyond the project area with sufficient carrying capacity to support green sea turtles without any risks of long-term reduction in their overall fitness.

Following the completion of the proposed project, we expect the green sea turtles will adjust and/or resume their normal and preferred behavior and movement patterns within the action area. Although the short-and-long term impacts of disturbance to sea turtles are not well documented, the available evidence suggests that the anticipated level of disturbance would not trigger significant long-term changes in behavior patterns on a large scale. Regardless of the exact extent of disturbance, avoidance, disruption, or displacement that occurs for any individual turtle during the proposed project, we expect the adverse effects associated with disruptions of important foraging and resting behaviors to be confined within the relatively small action area and duration of project construction and repeated nourishment events. As a result, there should be no detectable long-term impact of the proposed project on green sea turtles beyond disruptions that may occur during the proposed action.

In this opinion, we acknowledged that climate change could influence green sea turtle occurrence and their movement patterns, and the distribution of important habitat features within the action area. NMFS believes the recovering east Pacific green turtle population will likely result in more turtles entering the action area in the future (*e.g.*, Eguchi *et al.* 2020). In addition, NMFS anticipates that increasing sea surface temperature associated with climate change may increase the frequency and duration of green sea turtle use of nearshore marine areas in southern California. The increasing population and sea surface temperature trends may increase the number of green sea turtles exposed to Project impacts over the life of the proposed action.

6. Cumulative Effects

"Cumulative effects" are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation [50 CFR 402.02 and 402.17(a)]. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Most of the projects that are expected to continue over time require Federal permits (e.g., USACE) or are Federal actions which are expected to be subject to future consultation under the ESA and are therefore not Cumulative Effects. After considering the available information, we have determined that current and continuing non-Federal actions that may continue to occur in the action area and may be affecting green sea turtles in the action area are already addressed in the *Environmental Baseline* section.

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

7. Integration and Synthesis

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

NMFS has determined green sea turtle occurrence in the action area is likely given the relatively high number of stranding and sighting observations, as well as the abundant nearshore rocky reef habitat which likely supports foraging and resting behaviors. However, we do not have a specific estimate for the number of turtles that may reside within or occasionally visit the action area given the lack of scientific study of green sea turtle distribution and abundance in the area. At a minimum, green sea turtles from adjacent resident populations are occasionally using the action area to support foraging forays and resting behavior. It is also possible that a small resident populations may be present in the general vicinity similar to the recently described La Jolla Cove resident population (Hanna *et al*. 2021).

Based on the analysis of potential effects considered in this biological opinion, we determined the Project may result in direct contact injury or death associated with hopper dredging operations. NMFS believes the recovering east Pacific green turtle population will likely result in more turtles entering the action area in the future (*e.g.,* Eguchi *et al.* 2020). In addition, NMFS anticipates that increasing sea surface temperature associated with climate change may increase the frequency and duration of green sea turtle use of nearshore marine areas in southern California. Given the current understanding of exposure risk and likely increased exposure into the future, we were unable to conclude such effects are discountable, but we do not anticipate multiple occurrences of injury or death. As a result, we assume that up to one green sea turtle mortality may occur, which would be a negligible reduction to the population of East Pacific DPS green sea turtles.

We have also determined that some green sea turtles that may occur in the action area would be incidentally harassed through significant disruption of normal behavior patterns over the duration of the proposed project due to burial and/or sedimentation effects on nearshore rocky reef habitat. We have determined that affected turtles could be of any age or sex in this population.

Although we conclude that some turtles will experience adverse effects from disruption of normal behavior and movement patterns, we have also concluded that there is adequate habitat in the vicinity outside of the impact footprint to support green sea turtles during this time, and that all individual green turtles affected by sedimentation related effects will ultimately survive the disturbance and resume normal behavior and movement patterns outside the localized impact footprint and/or after the project is complete. As a result, we have concluded the effects associated with nearshore reef sedimentation and/or burial are ultimately not likely to have a detectable impact on the reproduction, numbers, or distribution of the foraging population of ESA-listed green sea turtles in the action area or Eastern Pacific DPS green turtle population structure and diversity. Given the expected lack of any significant long-term impacts on the population, we conclude that the proposed action is not likely to produce any detectable reduction in the ability of ESA-listed green sea turtles to adapt or be resilient to climate change in any way.

When considering the effects of the Project to the status, environmental baseline, and cumulative effects of other activities, and the anticipated effects of climate change over the foreseeable future, NMFS anticipates a negligible reduction in the numbers, reproduction, or distribution of green sea turtles and therefore no appreciable reduction in the likelihood of survival and recovery of the East Pacific DPS green sea turtles.

8. Conclusion

After reviewing and analyzing the current status of the listed species, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and the cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of East Pacific DPS green sea turtles.

No critical habitat has been designated or proposed for this species; therefore, none was analyzed.

9. Incidental Take Statement

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

As described earlier, NMFS has interpreted “harass” to mean creating the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering."

1. Amount or Extent of Take

In the biological opinion, we described incidental take of green sea turtles residing and/or transiting through the action area through injury or death associated with hopper dredging operations. In addition, we described harassment as a result of disruption of normal foraging and behavior patterns due to the Project. Given the limited amount of scientific study of green sea turtle distribution and abundance in the area, we do not have a specific estimate for the number of turtles that may reside within or occasionally visit the action area. Therefore, it is difficult to quantify the number of turtles that would be exposed to Project effects. We expect that affected individuals comprise an unknown mix of male and female juveniles and adults.

Ultimately, because we were unable to discount the possibility of direct contact injury or death associated with hopper dredging operations based on the available information, we have determined that up to one green turtle is expected to be killed or injured through a harmful interaction with a hopper dredge over the course of the proposed action. If any green sea turtles are observed stranded within the vicinity of the action area at any time during the proposed construction activities, or within 60 days following conclusion of proposed construction, NMFS will evaluate the likely cause of the stranding and the overall health of the individual. Based on those results, we may determine if take will have occurred as a result of the proposed action. If

Project monitoring and stranding observations indicate more than one green sea turtle is determined to have received an injury or be killed through direct contact with the proposed action, then take will have occurred in excess of what has been considered in this biological opinion.

Harassment as a result of disruption of normal foraging and behavior patterns may occur through changes in turtle movement, foraging, and resting behaviors due to avoidance of the project area, and reduction in habitat usage of affected nearshore rocky reefs and biological communities. We acknowledge that the overall impact of these behavioral disruptions on the growth, health, fitness, or reproduction of an individual sea turtle is uncertain, and likely to vary by individual. We expect all of these individuals to survive, and to eventually resume normal patterns and health after the project is completed.

Given the combined uncertainty associated with the number of exposed turtles and the biological effect of the anticipated behavioral disruptions, and because this harassment is expected to occur through the pathways of disturbed and degraded habitats or avoidance of certain areas, we will quantify anticipated incidental take through the use of surrogate indicators of habitat disturbance or avoidance. NMFS expects that up to 11.6 acres of nearshore rocky reef and associated biological communities in the sediment equilibrium footprint, would be adversely affected by sedimentation and/or burial. If the Project results in greater impacts to nearshore rocky reef habitat in the action area, then anticipated incidental take may have been exceeded. NMFS will also evaluate the results of any research conducted on green sea turtles in the area before, during, and after the proposed project that may inform our understanding of effects associated with reduced foraging and/or resting habitat in the action area to determine if take has occurred in excess of what has been considered in this biological opinion.

2. Effect of the Take

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

3. Reasonable and Prudent Measures

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

1. The USACE shall implement measures to monitor, document, and report all incidental take of green sea turtles resulting from the Project.

2. The USACE shall implement measures to minimize the risk of injury associated with dredging operations, and minimize the extent of disruption of normal foraging and behavior patterns of green sea turtles.

4. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Federal action agency must comply with the following terms and conditions. The USACE has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

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

1A. Prior to initiating the proposed project, the USACE shall provide NMFS WCR an updated schedule for the anticipated start and completion of project activities of in-water work. The updated schedule shall be provided to Dan Lawson via electronic mail (Dan.Lawson@noaa.gov) or the following address:

Dan Lawson, Branch Chief
NMFS West Coast Region Protected Resources Division
7600 Sand Point Way NE, Bldg 1
Seattle WA 98115

1B. The USACE shall monitor the project area as described in section 1.3 and record the presence and behavior of green sea turtles that are observed by project monitors within and around the proposed project. In addition to a monitor onboard the hopper dredge, a qualified biologist or qualified monitor with experience monitoring green sea turtles will be onboard any construction barge used for creating rocky reefs as compensatory mitigation, and will monitor for the presence and behavior of green sea turtles. To the extent possible, biological monitors shall attempt to photograph surfacing sea turtles (typically head photographs) observed in the action area and provide the images to NMFS. The USACE should also summarize all pertinent details regarding the progress and effectiveness of the monitoring and mitigation measures used during the proposed project, along with an assessment of potential impacts that may have occurred as a result of project activities based on what was observed. This information shall be reported to NMFS as outlined in 1C.

1C. Upon completion of each nourishment event and any compensatory mitigation activities, the USACE shall complete a report summarizing all data recorded during all monitoring throughout all phases of the proposed project, including all documentation and summary analysis of the presence and behavior of green sea turtles, effectiveness of the monitoring and avoidance measures, and assessment of any potential impacts that may have occurred throughout the entire proposed action. The summary observation report shall include at least the following information: number(s), estimated size/age class (if applicable), date, locations (latitude and longitude), and behaviors associated with the observations of any ESA-listed species under NMFS jurisdiction (e.g., sea turtles and ESA-listed marine mammals). The report shall be

provided to NMFS WCR within 120 days following completion of all project activities by email to Dan.Lawson@noaa.gov or the address listed above.

1D. Prior to initiating the proposed project, the USACE shall provide NMFS WCR an updated monitoring plan for minimizing and avoiding the impacts of project activities on sea turtles. This plan should specify the project activity monitoring zone and the response of project activities if protected species are observed in this zone for each type of project activity. The plan should be provided to Dan Lawson at the same email address above.

1E. The USACE shall require project monitors, key contractor and USACE project personnel to attend a project briefing prior to starting work the proposed project. The project briefing shall review the protocols for minimization and avoidance of impacts to sea turtles as described in this biological opinion, as well as review the latest scientific information regarding green sea turtle ecology in the action area.

1F. Prior to initiating the proposed project and in coordination with NMFS WCR, the USACE shall develop and provide NMFS WCR a detailed final monitoring and mitigation reporting plan regarding Project effects on nearshore rocky reef habitat and associated biological communities. The USACE shall coordinate with Bryant Chesney (Bryant.Chesney@noaa.gov) prior to final submission. The final plan and any updates shall be provided to Dan Lawson at the email address identified above. The monitoring and mitigation plan shall be developed to address and evaluate:

- the accuracy of key assumptions and expectations regarding the anticipated environmental impacts of the proposed action in comparison to any resulting impacts that do occur;
- the adequacy of the monitoring and analytical methods to identify and accurately measure impacts from the beach nourishment effort.
- physical and biological monitoring of key habitat features throughout the sediment equilibrium footprint, such as the area of bedrock, boulder, cobble, and sand bottom habitat, as well as indicators of habitat quality, such as surfgrass, algae, and invertebrate cover and abundance;
- appropriate mitigation sites for rocky reef creation and/or alternative mitigation activities that could enhance the quantity and/or quality of green sea turtle foraging and resting habitat; and
- reporting timeline and process for documenting the extent of incidental take of green sea turtles through nearshore reef burial and/or sedimentation. At a minimum, the monitoring plan should report the extent of reef habitat within the sediment equilibrium footprint and quantify any reduction in rocky reef area. In addition, the report shall document any reductions in cover of surfgrass, macroalgae, and sessile invertebrates within the sediment equilibrium footprint. A draft report for each monitoring event shall be provided to NMFS WCR within 60 days following completion of habitat monitoring activities by email to Dan.Lawson@noaa.gov, with a final report provided within 90 days.

1G. Prior to initiation of any future beach renourishment events, the USACE shall develop, in coordination with NMFS WCR, a standardized and consistent protocol for assessing impacts to nearshore rocky reef communities for future events based upon consideration of any deficiencies identified in development of the final monitoring and mitigation reporting plan described in 1F above, information collected from monitoring during the initial nourishment event, and other relevant impact assessment approaches used for similar types of projects. The protocol and any updates shall be provided to Dan Lawson at the same email address listed above.

1H. The USACE shall report any incidents or observations of injuries and/or mortalities of green sea turtles to the NMFS West Coast Region Stranding Coordinator, Justin Viezbicke, at 562-980-3230 or Justin.Viezbicke@noaa.gov, as soon as practicable. In the event an injury or mortality of a green sea turtle occurs at any time during the proposed project, the USACE shall cease any activities that may have resulted in the injury or mortality until such time as they evaluate the cause of the harm and consider application of additional protective measures to address those circumstances, in consultation with NMFS.

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

2A. Hopper dredge requirements

During all hopper dredging operations, a qualified biologist will monitor for the presence of ESA-listed green sea turtles. The dredge operator will maintain a safe working environment for the biological monitor to access and effectively monitor inflow screening, overflow screening, and dragheads for incidental take of ESA-listed green sea turtles after every load.

Draghead observation**:**

Upon completion of each load cycle, dragheads will be monitored as the draghead is lifted from the seafloor and placed on the saddle in order to ensure that any ESA-listed species that may be impinged within the draghead are observed and accounted for. The qualified biologist, or designated crew member under the guidance and supervision of the qualified biologist when safety is of concern, must physically inspect dragheads for evidence of any ESA-listed green sea turtle interaction after every load.

Inflow screening Observation:

Inflow screening must be designed to capture and retain material for the qualified biologist to monitor for the presence of ESA-listed species. The screened area must be accessible to the biological monitor to ensure 100% observer coverage. The biological monitor must inspect the contents of all inflow screening boxes after every load, including opening the box (where applicable and safely accessible) and looking inside at all contents for evidence of ESA-listed species entrainment. If the contents are not clearly visible and identifiable from a location

outside of the box, then in limited instances, the biological monitor may be required to enter the inflow box to identify contents for evidence of ESA-listed species take.

All hopper dredges are required to have 100% inflow screening unless they must be removed for safety due to clogging as outlined below.

- Inflow screening size will start at 4-inch by 4-inch, but may be gradually adjusted to a larger screen size if clogging reduces the ability for the qualified biologist to monitor the inflow for the presence of ESA-listed species or if clogging reduces dredging production and thereby expands the time dredging is required. Scenarios that may result in the clogging of inflow and overflow screens are dredge and project specific.

- All modifications will be made in close coordination with the dredging contractor, qualified biologist, appropriate USACE project managers, and NMFS. The USACE will provide NMFS with a notification when screen sizes are increased or inflow screens are removed that will include an explanation of what attempts were made to reduce the clogging problem, how long the problem may persist, and how effective overflow screening will be achieved.

- If inflow screens are increased to be larger than 4-inch by 4-inch or are removed due to clogging, the USACE will continue to re-evaluate the risk of clogging on a load by load basis and the inflow screens will be reinstated when clogging is no longer occurring. The USACE will track the number of loads that inflow screens were removed as part of the reporting requirements.

- Hopper dredge operators will not open the hydraulic doors on the inflow boxes prior to inspection by the qualified biologist for evidence of ESA-listed take.

- If the inflow box cannot be observed due to clogging, the box contents cannot be dumped or flushed unless overflow screening that captures contents for observation by the qualified biologist is operational and monitored for evidence of take. Once overflow screening is operational, the qualified biologist shall also visually monitor box contents as they are dumped or flushed into the hopper.

Overflow Screening Observations:

- All hopper dredges are recommended to have operational overflow screening and monitor for take after each load. Overflow screening is required to be installed and monitored after each load if the inflow screening is removed or bypassed due to clogging.

- Overflow screening must be designed to capture and retain material larger than the screen size for the qualified biologist to monitor for the presence of ESA-listed species. The screened area must be accessible to the qualified biologist to inspect for evidence of ESA-listed species take.

- Screen size will start at 4-inch by 4-inch, but may be adjusted to a larger screen size if clogging reduces the ability for the qualified biologist to monitor the screen for the presence of ESA-listed species or if clogging reduces dredging production and thereby expands the time dredging is required. All modifications will be made in close coordination with the dredging contractor, qualified biologist, appropriate USACE project managers, and NMFS. If screen sizes are increased due to clogging, the risk of clogging will be re-evaluated weekly and the overflow screens will be reinstated using the smallest screen size that can be effectively used (preferably 4 inch by 4 inch) when clogging is no longer occurring.

2B. To prevent impingement or entrainment of ESA-listed species within the water column, dredging pumps will be disengaged by the operator when the dragheads are not actively dredging and therefore working to keep the draghead firmly on the bottom. Pumps will be disengaged when lowering dragheads to the bottom to start dredging, turning, or lifting dragheads off the bottom at the completion of dredging. Hopper dredges may utilize a bypass or other system that would allow pumps to remain engaged, but result in no suction passing through the draghead.

2C. Pumping water through the dragheads is not allowed while maneuvering or during travel to/from the disposal or pumpout area. The dredge operator will ensure the draghead is embedded in sediment when pumps are operational, to the maximum extent practicable.

2D. If green sea turtles are regularly seen by project monitors in the action area, especially within the vicinity of hopper dredging operations, the USACE shall contact NMFS to discuss implementation of any additional measures to reduce the risks of direct contact injuries or other adverse effects, along with potential modification of the green sea turtle monitoring plan to more specifically evaluate the impacts of the proposed project within this specific area.

2E. If the USACE's final monitoring and mitigation plan indicates that the currently available pre-construction survey information is inadequate to assess impacts to nearshore rocky reef and associated biological communities, and additional pre-construction physical and biological monitoring is not practicable to implement prior to the first nourishment event, then the USACE should utilize acoustic survey techniques similar to that already obtained for pre-construction purposes (i.e., Nearshore and Wetland Surveys 2018) to assess change in area of rocky reef substrate after completion of sediment placement. In this circumstance, any post-construction reductions in reef area that are measured which exceed a statistically reliable estimate of natural variability within the action area should be assumed to be due to the Project, and the USACE should implement rocky reef creation consistent with the associated environmental commitment in the EIS/EIR, or a functionally equivalent mitigation alternative. In addition, in this circumstance the USACE should assume some reduction in quantity and/or quality of surfgrass habitat, and should implement the test surfgrass transplant as planned for in the EIS/EIR.

2F. During any reef construction operations, a qualified biologist will monitor for the presence of ESA-listed green sea turtles. The barge operator will maintain a safe working environment for the qualified biologist. The green sea turtle monitor will identify and communicate if there is a need to cease or alter operations to avoid impacts to green sea turtles. The biologist or monitor will clear the construction area and confirm no green sea turtles are present 30 minutes prior to the startup of reef placement operations. If a green sea turtle is observed within the vicinity of the project site during project operations, all appropriate precautions shall be implemented to avoid or minimize unintended impacts. These precautions include, but are not limited to:

- Cessation of operations within 100 feet of an observed green sea turtle;
- Operations may not resume until the green sea turtle has departed the monitoring zone by its own accord or has not been observed for a 15-minute period of time; and
- Maneuver the barge to avoid any free-swimming green sea turtles observed during transit.

10. Conservation Recommendations

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

1. Given the current information that suggests green sea turtle movements within and through the action area are more likely to occur during the summer and fall when coastal water temperatures are warmest, the USACE should consider incorporating the anticipated seasonality of green sea turtle presence in the final project execution whenever feasible. Specifically, conducting in-water project activities during the winter/early spring should help lower the risk and/or extent of adverse effects. We also suggest incorporating monitoring and research information gathered

during the proposed project to help further inform how project activities could be scheduled and/or generally conducted to minimize the risk and/or extent of adverse effects.

2. The USACE should evaluate the feasibility of using a rigid sea turtle deflector draghead and/or similar turtle exclusion technology to further minimize the risk of hopper dredging entrainment during dredging activities on the U.S. West Coast. Such mitigation measures have been shown to effectively decrease incidental take for green sea turtles in other parts of the U.S. The USACE should provide a summary of their evaluation and any recommendations to Dan Lawson at the email address listed above. If USACE and NMFS agree that utilizing turtle exclusion mitigation measures are feasible, then they should be implemented in future hopper dredging operations. If any injury or mortality is documented during the course of the proposed project, the USACE should consider implementing the most practicable exclusion technology available to avoid or minimize the risk of take exceedance.

3. During the proposed project and future nourishment events, the USACE should use the information gathered during the proposed project to facilitate outreach to the local community (e.g., fishing/boating communities) regarding the presence of green sea turtles and measures to help avoid harmful interactions with them. The USACE should also use outreach efforts to help enhance the available information during the proposed project by soliciting the City of San Clemente as the non-federal project sponsor to help collect information by reporting sightings of sea turtles to the USACE, NMFS, and/or available hotlines for live turtle observations (e.g., http://www.socalseaturtles.org/west-coast-sea-turtle-sightings.html#/).

4. Given the uncertainty associated with turtle abundance and use of the action area, the USACE should collaborate with NMFS to augment existing satellite tagging efforts of green sea turtles in southern California to improve our understanding of movement patterns in the action area and help understand the extent of impacts of the proposed project on green sea turtles and habitat utilization in the area. For example, the USACE should consider developing a funding transfer agreement to support NMFS's involvement and expertise in the satellite tagging study of green sea turtles in the area.

11. Reinitiation of Consultation

This concludes formal consultation for the San Clemente Shoreline Protection Project.

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

biological opinion or written concurrence; or (4) If a new species is listed or critical habitat designated that may be affected by the identified action."

3. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

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

1. Utility

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

2. Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

3. Objectivity

Information Product Category: Natural Resource Plan

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

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

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

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

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State of California • Natural Resources Agency
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May 4, 2023 In reply refer to: COE_2022_1123_001

VIA ELECTRONIC MAIL

Jodi L. Clifford
Chief, Planning Division
U.S. Army Corps of Engineers, Los Angeles District
Regulatory Division
915 Wilshire Blvd., Suite 1109
Los Angeles, CA 90017-3409

RE: Section 106 consultation for the San Clemente Shoreline Protection Project, San Clemente, Orange County

Dear Jody Clifford,

The U.S. Army Corps of Engineers (COE) is continuing consultation with the State Historic Preservation Officer (SHPO) to comply with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulation at 36 CFR Part 800. By letter received on November 23, 2022, and April 13, 2023, the COE is seeking comments on their area of potential effects (APE), identification efforts, and finding of effect for the above- referenced undertaking.

The COE is proposing to perform dredging and beach renourishment located along the shoreline of San Clemente Beach, west of the Marine Safety Headquarters on the north end, to west of the T Street overpass at the south end in the City of San Clemente, Orange County. Proposed project activities include dredging material offshore of Oceanside, then hauling and depositing the materials offshore of San Clemente Beach via a 24-inch pipeline.

The COE requested a search of the Sacred Lands File from the Native American Heritage Commission (NAHC) for a nearby undertaking which covered the area of the current undertaking, returning positive results on September 19, 2022. The COE contacted Native American entities listed by the NAHC as having cultural ties to the project area on November 23, 2022. The COE states that the COE will provide the SHPO with a summary of all tribal comments and concerns received. In future undertakings, please provide a copy

a copy of the COE's tribal consultation letters. Should the COE use a form-letter for their tribal consultation, please only include a copy of one of the letters.

It is also recommended that in future undertakings the COE conduct follow-up emails and/or phone calls to potentially interested consulting parties to ensure a reasonable and good-faith effort has been made to allow for those parties to comment and consult on the Federal undertaking and provide documentation of those conducted efforts to the SHPO.

The COE submitted the following documents to support its determination of the area of potential effects (APE) for the undertaking, to provide evidence of its efforts to identify historic properties, and to support its finding of effect:

- *Joint Environmental Impact Statement/Environmental Impact Report, Volume I; San Clemente Shoreline Protection Project, San Clemente, California (Chambers Group 2011)*
- *Historic Resources Survey Update, City of San Clemente, California (Historic Resources Group 2006)*
- *Final Mitigated Negative Declaration, San Clemente Beach Replenishment Program (City of San Clemente 2002)*
- *Maps of the Project Location and Areas of Potential Effects*
- *Results of Hydrographic Survey Using Multibeam Echo Sounder*

The COE describes the APE as the areas where dredging and placement of sand would occur, consisting of a 940-acre borrow area offshore of Oceanside Harbor and Camp Pendleton and a materials placement area. The vertical extent of the APE is described as up to 6-feet below sediment surface for dredging, the allowable depth of dredging in the offshore APE, although the COE states it is unlikely that the full depth will be excavated across the borrow site. The COE describes the vertical extent of the onshore APE as up to 2-feet below ground surface from the construction of L-shaped berms and deposition of sand on top of the existing beach sediment. The COE provided a map to display their APE.

Pursuant to 36 CFR 800.4(a)(1), I have no comments on the APE.

Efforts to identify historic properties include a review of a records search from 2002, review of a project from 1997 adjacent to the onshore APE, review of COE internal records, archival research, review of pedestrian survey from 2008, and Native American outreach.

The COE states that beginning in 2002, the onshore portion of the APE was subject to a beach replenishment program sponsored by the City of San Clemente that used materials imported from upland sources to mitigate beach erosion, and therefore much of the onshore APE is within imported materials and updated pedestrian survey was therefore not warranted. The COE states that much of the area where work will be performed onshore is located in the surf zone which is a dynamic environment where the sands are constantly moving, and intact archaeological deposits are unlikely to exist.

Efforts to identify historic properties resulted in the identification of one cultural resource in the APE. This resource is described as the San Clemente Municipal Pier, constructed by William Ayer in 1928, and the city of San Clemente's oldest pier. The resource was last recorded in 2006 by Historic Resources Group.

For the purposes of this undertaking only, the COE is proposing to assume the San Clemente Municipal Pier is eligible for inclusion in the National Register of Historic Places (NRHP) under criteria A and C. The COE states that based upon previous iterations of the dredging project and the nature of the undertaking, the project will not cause harm to the structure and will have no adverse effect on the pier's historical integrity. For the purposes of this undertaking only and due to the nature of the proposed project activities, I do not object to this approach.

By letter received on November 23, 2022, the COE states that they have yet to conduct identification efforts for the offshore portions of the APE. A 2008 records search (Chambers Group, p. 4-66) identified a cluster of seven historic shipwrecks within or in the vicinity of the borrow area. The COE is proposing to conduct remote sensing surveys prior to the dredging, as described in the 2011 Chambers Group report (Mitigation Measures MM-CR-50-1 and MM-CR-50-2, pp. 5-64 through 5-65). If any submerged cultural resources are identified within the borrow area, the COE states they will ensure the resources shall be avoided by dredging activities. The COE states that while the proposed borrow area is approximately 940 acres, the geotechnical evaluation has identified a preferred area of 128 acres within this larger area which would allow for avoidance measures if necessary.

The COE has concluded that the undertaking would have no adverse effect on historic properties and has requested my review and comment on their finding of effect for the proposed undertaking. After reviewing your letter and supporting documentation, I do not object to a finding of *no adverse effect* for this undertaking pursuant to 36 CFR 800.5(c)(1).

If you require further information, please contact Aubrie Morlet at (916) 893-8270 or Aubrie.Morlet@parks.ca.gov

Sincerely,

Julianne Polanco
State Historic Preservation Officer

EJScreen Report (Version 2.11)

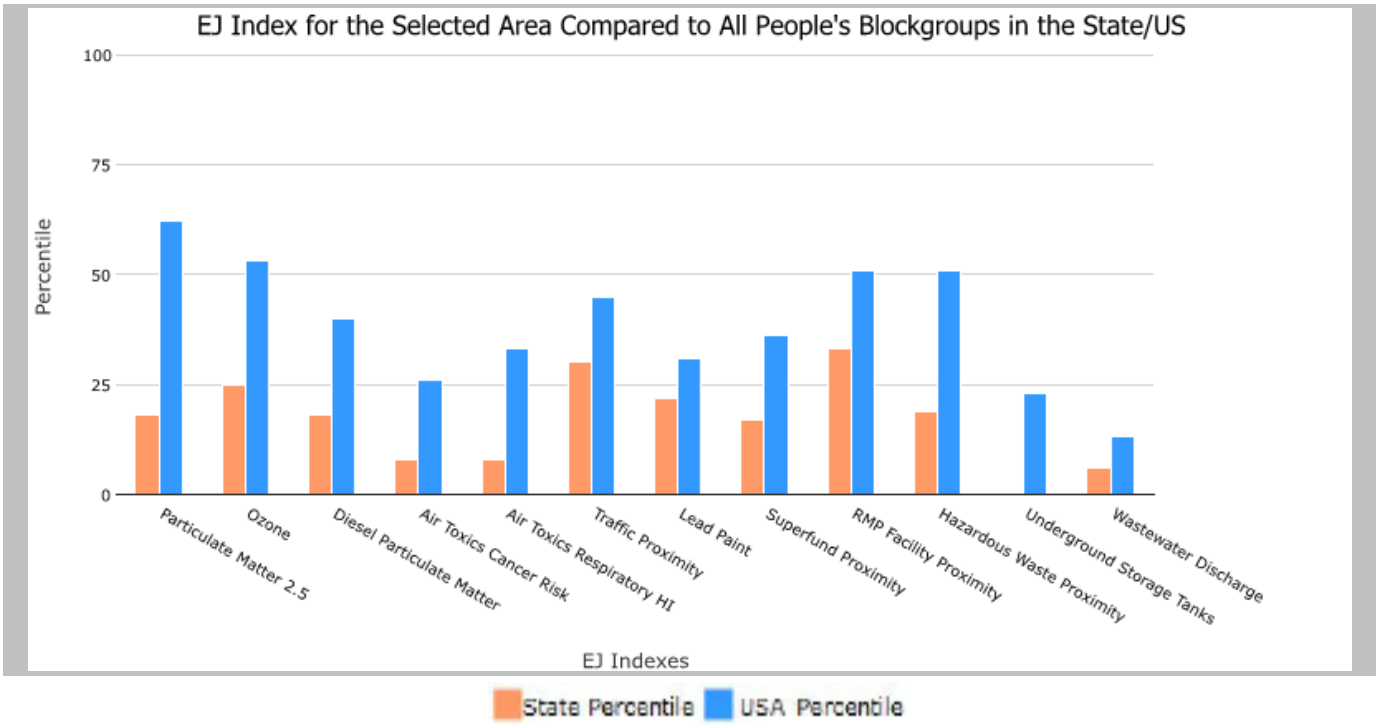
City: San Clemente, CALIFORNIA, EPA Region 9

Approximate Population: 64,678

Input Area (sq. miles): 19.11

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	18	62
Ozone EJ index	25	53
Diesel Particulate Matter EJ index*	18	40
Air Toxics Cancer Risk EJ index*	8	26
Air Toxics Respiratory HI EJ index*	8	33
Traffic Proximity EJ index	30	45
Lead Paint EJ index	22	31
Superfund Proximity EJ index	17	36
RMP Facility Proximity EJ index	33	51
Hazardous Waste Proximity EJ index	19	51
Underground Storage Tanks EJ index	0	23
Wastewater Discharge EJ index	6	13

EJ Indexes - The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.



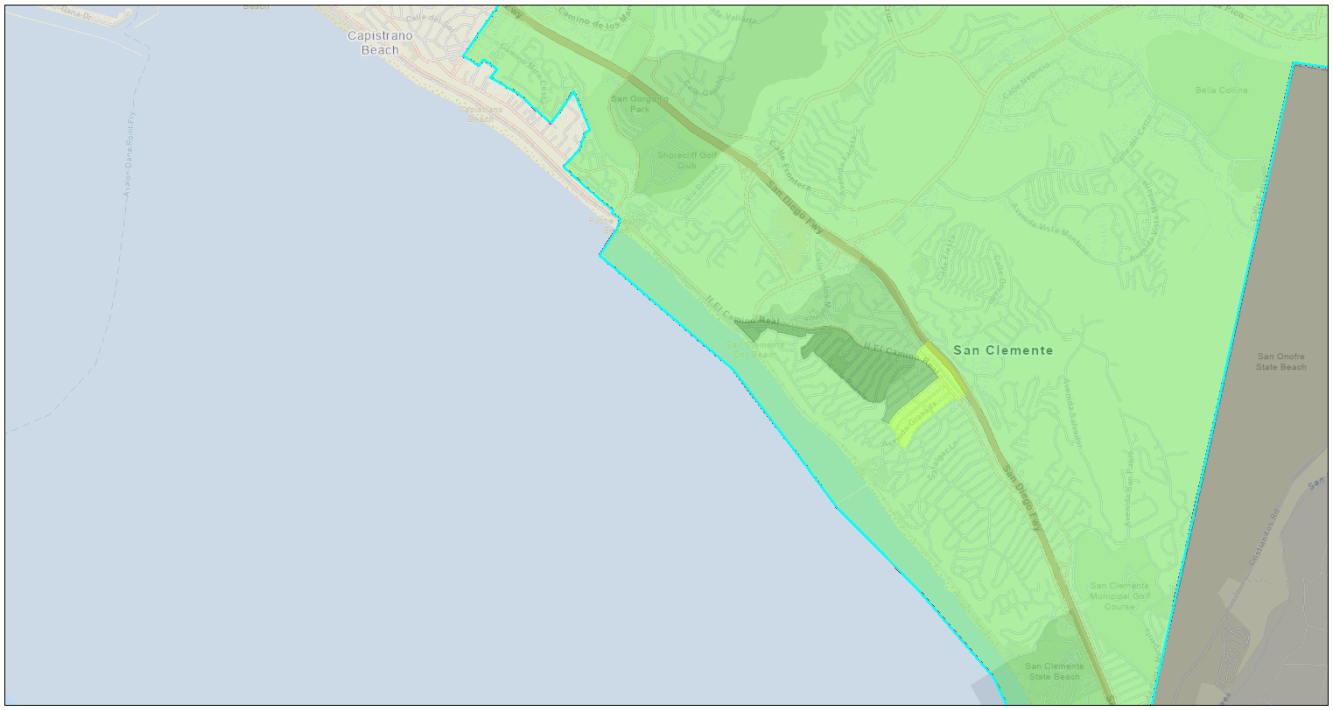
*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

EJScreen Report (Version 2.11)

City: San Clemente, CALIFORNIA, EPA Region 9

Approximate Population: 64,678

Input Area (sq. miles): 19.11



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	3

EJScreen Report (Version 2.11)

City: San Clemente, CALIFORNIA, EPA Region 9

Approximate Population: 64,678

Input Area (sq. miles): 19.11

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (µg/m^3)	10.2	11.7	24	8.67	87
Ozone (ppb)	43.5	47.7	38	42.5	62
Diesel Particulate Matter* (µg/m^3)	0.196	0.33	25	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	22	31	27	28	<50th
Air Toxics Respiratory HI*	0.3	0.43	24	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	1200	1400	73	760	85
Lead Paint (% Pre-1960 Housing)	0.13	0.28	39	0.27	39
Superfund Proximity (site count/km distance)	0.038	0.17	22	0.13	35
RMP Facility Proximity (facility count/km distance)	0.74	1.1	57	0.77	68
Hazardous Waste Proximity (facility count/km distance)	1.7	5.2	26	2.2	66
Underground Storage Tanks (count/km^2)	0.31	1.5	74	3.9	35
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.078	67	57	12	83
Socioeconomic Indicators					
Demographic Index	21%	44%	13	35%	34
Supplemental Demographic Index	8%	15%	23	15%	23
People of Color	27%	63%	15	40%	47
Low Income	14%	29%	30	30%	26
Unemployment Rate	4%	6%	47	5%	55
Limited English Speaking Households	2%	9%	36	5%	65
Less Than High School Education	5%	16%	30	12%	34
Under Age 5	5%	6%	47	6%	49
Over Age 64	19%	14%	70	16%	63
Low Life Expectancy	15%	18%	24	20%	13

EJScreen Report (Version 2.11)

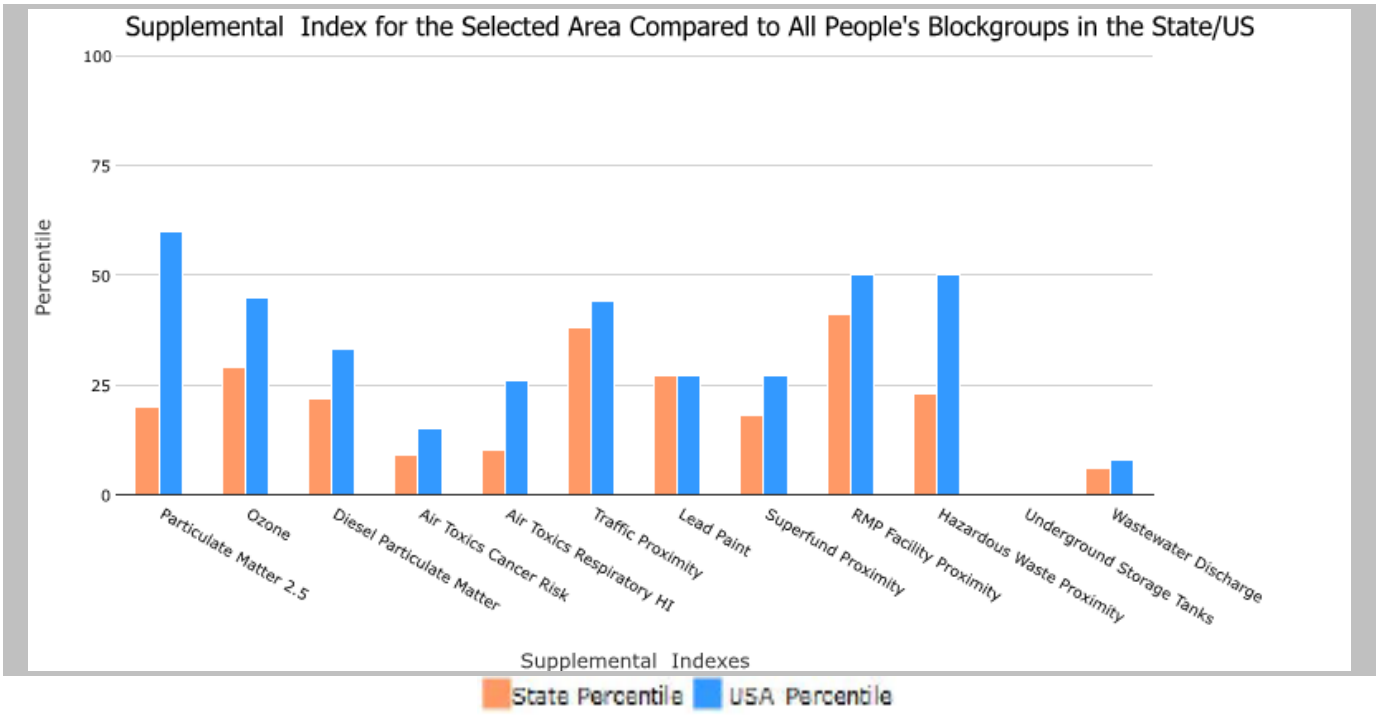
City: San Clemente, CALIFORNIA, EPA Region 9

Approximate Population: 64,678

Input Area (sq. miles): 19.11

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	20	60
Ozone Supplemental Index	29	45
Diesel Particulate Matter Supplemental Index*	22	33
Air Toxics Cancer Risk Supplemental Index*	9	15
Air Toxics Respiratory HI Supplemental Index*	10	26
Traffic Proximity Supplemental Index	38	44
Lead Paint Supplemental Index	27	27
Superfund Proximity Supplemental Index	18	27
RMP Facility Proximity Supplemental Index	41	50
Hazardous Waste Proximity Supplemental Index	23	50
Underground Storage Tanks Supplemental Index	0	0
Wastewater Discharge Supplemental Index	6	8

Supplemental Indexes - The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on low-income, limited English speaking, less than high school education, unemployed, and low life expectancy populations with a single environmental indicator.



This report shows the values for environmental and demographic indicators, EJScreen indexes, and supplemental indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. For additional information, see: www.epa.gov/environmentaljustice.