Section 3.3
Biological Resources

SECTION SUMMARY

The biological resources analysis evaluates the impacts of the proposed project on terrestrial and marine biological resources in the proposed project site and vicinity. An analysis of potential impacts relative to biological resources associated with the alternatives is detailed in Chapter 4 Analysis of Alternatives.

Section 3.3 Biological Resources provides the following:

- A description of existing biological setting in the project site and surrounding area;
- A discussion on the methodology and thresholds used to determine whether the proposed project would result in a significant impact to biological resources;
- An analysis of the proposed project's impacts to biological resources;
- A description of any Conditions of Approval that the City would impose, or mitigation measures proposed to reduce any potential impacts, and analysis of residual impacts (i.e., impacts remaining after mitigation), if applicable;
- An analysis of potential cumulative impacts associated with biological resources;
- A summary of biological resources impact determinations associated with the proposed project, cumulative growth, and mitigation measures; and
- A description of significant unavoidable impacts associated with biological resources, if any.

Key Points of Section 3.3:

The land area within the project site includes previously developed areas, devoid of any sensitive terrestrial biological resources. Compliance with the Coastal Land Use Plan and City tree trimming and removal ordinances would avoid adverse impacts to terrestrial biological resources, including nesting migratory birds during removal of existing ornamental trees and other landscaping in areas that would be altered or modified as a result of the project. Therefore, impacts to terrestrial biological resources from construction or operation of the proposed project would be less than significant.

Construction and operation of the proposed project would result in significant impacts on marine biological resources, as analyzed below.

Special-Status Species

"Special status" species include any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) or U.S. Fish and Wildlife Service (USFWS), or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380. Several special-status species occur in the harbor and use the water surface and shoreline and would be displaced or affected

during construction, if present. Significant impacts to special-status species and sensitive habitats during construction would include the potential for mortality or injury from contact with construction equipment, or behavioral effects and effects on hearing from the noise of pile driving activities if marine mammals are nearby. These impacts would be reduced to less than significant by implementation of mitigation measures (MMs) as follows:

MM BIO-1: Protection of Marine Mammals During Construction

Pile-driving could result in Level B harassment that leads to avoidance behavior by marine mammals. Therefore, a Level B (harassment) safety zone shall be established around the pile-driving site and monitored for marine mammals as shown in Table MM BIO-1 below. The Level B radius is based on the estimated safe distance for installation of piles proposed for use in the project and is adequate to ensure that pinnipeds would not be exposed to Level B harassment sound levels. The safety zone varies by pile size and hammer type. Because the noise levels anticipated under this analysis are based on measured values from multiple different projects, the protective buffer has been increased by 20 percent to address inherent variability. The buffers are to be applied using direct straight line exposure thus barriers that create an acoustic shadow (e.g., a jetty or breakwater) separating the noise generation from mammal receptors would eliminate the buffer requirement.

Table MM BIO-1: Pile Driving Safety Zone Buffer By Pile Type and Pile Driving Method

Project Element Pile Type	Pile Driving Methods	Level B (160 dB_{RMS}) Distance (meters)	Level B Buffer (160 dB_{RMS}) Distance (meters) + 20 Percent
Horseshoe Pier: 18-inch diameter steel piles	Vibratory hammer	>12 and <16	63 ft (19 m)
Pedestrian/Bicycle Bridge: 14-18-inch diameter steel piles	Vibratory hammer	>3 and <16	63 ft (19 m)
Sportfishing Pier: 11-14-inch wood or concrete piles	Impact hammer	10 meters	39 ft (12 m)
Small Craft Boat Launch Ramp: >18-inch diameter concrete pile	Impact hammer	>14 meters	55 ft (17 m)
Marina Reconstruction: 16-inch diameter concrete pile	Impact hammer	13-18 meters	71 ft (22 m)
dB_{RMS} - decibels Root Mean Square ft – feet m – meters			

The pile-driving site will move with each new pile; therefore, the safety zones shall move accordingly. Prior to commencement of pile-driving, a qualified marine mammal observer on shore or by boat shall survey the safety zone to ensure that no marine mammals are seen within the safety zone before pile-driving of a pile segment begins. If a marine mammal is observed within the safety zone during pile-driving operations, pile driving

shall be delayed until the marine mammal moves out of the safety zone. If a marine mammal remains within the zone for at least 15 minutes before pile-driving commences then pile-driving may commence with a "soft start" to warn mobile aquatic species to leave the area.

If marine mammals enter the safety zone after pile driving of a segment has begun, pile driving will continue. The qualified marine mammal observer shall monitor and record the species and number of individuals observed, and make note of their behavior patterns. If the animal appears distressed, and if it is operationally safe to do so, pile-driving shall cease until the animal leaves the area. Prior to the initiation of each new pile-driving episode, the area will again be thoroughly surveyed by the qualified marine mammal observer.

MM BIO-2: California Grunion

Horseshoe Pier construction that could disturb sandy beach under the pier structure shall be scheduled outside of the grunion spawning season (March to August). If construction overlaps the grunion spawning season, grunion monitoring shall be conducted prior to any sandy beach-disturbing activity (check California Department of Fish and Wildlife [CDFW] website for spawning events as spawning events occur bi-weekly). If no grunion are observed, construction may proceed. If spawning occurs within the work area and is of a Walker Scale 2 or higher, work shall not be performed if it would disrupt the high spawning beach used by grunion. Work shall be deferred until after the next spring tide series when eggs would be expected to hatch and larval fish would return to the water. However, construction can continue where work would not overlap with grunion spawning locations.

Temporary effects on water quality such as localized increases in turbidity and sedimentation, along with lowered dissolved oxygen levels associated with disturbance of anoxic sulfidic sediments would be short-term and localized and would be less than significant for special status species.

California least terns are known to forage in the project area during the portion of the year when they are nesting and rearing young, generally between April 1 and September 15. The nearest least tern nesting colony is located at Marina del Rey, approximately nine miles north of Redondo Beach and there is a large area outside of the project site available for foraging, so it is unlikely that least terns would be foraging within the active construction site. Further, foraging in the vicinity of the proposed project could continue with no adverse effects to bird species. Impacts would be less than significant. While impacts are less than significant without mitigation, the City is proposing the following Condition of Approvals as part of its Conditional Use Permit procedures:

COA BIO-1: California Least Tern

If the construction schedule overlaps with the California least tern breeding season of April 1 – September 15, a qualified biologist shall conduct monitoring prior to the initial start of construction within 500 feet of in-water construction activities. ("in water work area"). The contractor shall delay commencing work if terns are actively foraging (e.g. searching and diving) within the in-water work area. If no least terns are actively foraging within 500 feet of in-water construction activities, construction can commence. Monitoring shall continue a minimum of one-hour twice a week during in-water project activities during the breeding season (April 1 – September 15). In-water construction will be halted if least terns are actively foraging within 500 feet of the in-

water construction area, and can resume when least terns have left the area within 500 feet of in-water construction.

COA BIO-2: Permit Compliance

In compliance with the Clean Water Act, it is anticipated that a Section 404 permit would be required for project activities, including placement of permanent fill in jurisdictional waters. A Section 401 Water Quality Certification would also be required. In compliance with the Rivers and Harbors Act, a Section 10 permit would be required for "all work, including structures, seaward of the annual high water line in navigable waters of the United States". Compliance with these permits may include best management practices and construction measures to control turbidity in the water column adjacent to in-water work. The Water Quality Certification would contain water quality monitoring requirements for dissolved oxygen, light transmittance (turbidity), pH, and suspended solids at varying distances from the dredging operations. The permit would also include corrective actions in the unlikely event that construction exceeds any of the monitoring levels, which include silt curtains, which would be implemented if the monitoring data indicate that water quality conditions outside of the mixing zone exceed the permit-specified limits.

An increase in surface coverage would result in a net loss of open water foraging habitat for waterbirds. Elements of the proposed project, including removal and possible replacement of the Sportfishing Pier, Basin 3 dock replacement/reconstruction, and construction of the pedestrian bridge and small craft boat launch ramp would change surface water coverage in the project area. If the Sportfishing Pier is replaced, there would be a net increase in surface coverage, and this impact would be significant. If the Sportfishing Pier is not reconstructed, no net increase in surface coverage would occur and the impact would be less than significant.

If the Sportfishing Pier is reconstructed, the significant impacts from a net increase in surface cover would be reduced to less than significant by implementation of the following mitigation measure:

MM BIO-3: Mitigation for Increase in Surface Coverage

The applicant shall be required to obtain all required permits from appropriate federal and state agencies for in-water work such as a Clean Water Act Section 404 permit, Section 401 Water Quality Certification and/or Rivers and Harbors Act Section 10 permit. Prior to issuance of construction permits for the in-water elements of the proposed project, the applicant shall demonstrate that permits have been obtained and significant impacts related to any net increase in surface coverage of harbor waters that would occur as a result of the proposed project would be mitigated to less than significant through avoidance, impact minimization, and/or compensatory mitigation. Subject to agency coordination and permit requirements, compensatory mitigation may consist of (a) the establishment of an equivalent amount of new open water surface area within King Harbor through the opening of Seaside Lagoon to harbor waters; (b) other marine resource restoration, establishment, enhancement, and/or preservation activity within King Harbor or elsewhere in Santa Monica Bay; (c) obtaining credits from a mitigation bank within the Santa Monica Bay; and/or (d) making a payment to an in-lieu fee program that will conduct wetland, marine, or other aquatic resource restoration, creation, enhancement, or preservation activities within the Santa Monica Bay. Any required compensatory mitigation or other mitigation shall be implemented as set forth in the permits.

There is a growing sea lion population that is expected to continue, and is likely to expand undesirable human-pinniped interactions within King Harbor. This increasing negative condition is likely to occur with or without the proposed project. Seaside Lagoon is expected to be an active land and water public use area, and it would have constrained entrance to the embayment because of the breakwalls; these features are expected to be a deterrent to sea lions use of the site as haul-out. In addition, the proposed project includes a ramp and small breakwater associated with the proposed small craft boat launch ramp, which would be actively used and not expected to be a sea lion haul-out site. Further, alternative locations more conducive for sea lion haul-outs are available within the harbor, such as the existing haul-out floating platform. It is anticipated that with human activity occurring at and near the ramp, as well as with the availability of other potential haul-out locations in the harbor, sea lions would not typically use Seaside Lagoon or the small craft boat launch ramp facility as a haul out. However, whether the proposed project would directly affect sea lion haul-out or increase public-pinniped interactions, this would not result in a substantially adverse impact in comparison to existing conditions by increasing interactions such that there would be a substantial adverse impact on pinnipeds.

Therefore, it is not expected that the opening of Seaside Lagoon or the boat launch ramp and breakwater would have a substantially adverse impact either directly or indirectly on pinnipeds beyond existing conditions. As such, impacts would be less than significant.

COA BIO-3: Marine Mammal Management Program

While impacts are less than significant without mitigation, the City is proposing the following Condition of Approval as part of its Conditional Use Permit procedures:

The City of Redondo Beach shall prepare and initiate implementation of a marine mammal management program prior to the opening of Seaside Lagoon to harbor waters as recommended below to deter pinnipeds from establishing a regular presence in the lagoon or immediate vicinity. The marine mammal management program shall include the following:

1) A formal determination must be made that marine mammals in Redondo Beach threaten public health and welfare, and public and private property. Apply accepted standards and practices for addressing public health, welfare, and nuisances.
2) Determine that under section 109(h)(1)(B) of the Marine Mammal Act the City has the authority to take marine mammals for the purpose of protection of public health and welfare.
3) Designate a chain of authority within the City for the implementation of marine mammal deterrents, including providing department director level controls on program implementation.
4) Establish marine mammal controls including, but not limited to:
    a. Eliminate pinniped haul-outs on public and private structures and vessels within King Harbor, except as designated;
    b. Reduce or eliminate existing colonial haul-outs inside King Harbor;
    c. Prevent the development of new colonial haul-outs or seal nursery aggregations on public beaches, structures or jetties of existing King Harbor facilities or harbor revitalization project facilities;
    d. Design revitalization facilities and uses in a manner that minimizes promotion of pinniped use, including:
        i. avoiding development of areas isolated from public access that support flat surface near the water's edge;

ii. designing public outreach signage regarding marine mammal hazards, not feeding animals or having close interactions, and the presence of a formal deterrent program;
iii. adoption of stringent and enforceable policies on discharges of fish and food wastes in and around the water, feeding animals, and enticing sea lions and seals;

5) Implement a non-lethal marine mammal management program under the following scenarios:
   a. a normal year
   b. an abnormal year (with abnormally high number of starving or sick pinnipeds)
   c. stranding protocol that addresses both healthy and sick/injured animals and provides contact information for marine mammal rescue organizations and the National Marine Fisheries Service (NMFS) Southwest Region Marine Mammal Stranding Network.

The City shall implement a public education campaign that may include the following:

1) Develop and distribute signage and flyers designed to educate the public on elements of the program;
2) Assign an information officer to talk to the public, where deterrents are implemented, for a period of time until public interest dies down; and
3) Have animal control staff implementing the program wear official City attire and incorporate an informational web-site address on shirts where the public may garner additional information on the program.

Construction would result in the temporary loss of the benthic community in these areas directly disturbed by construction. This loss would be less than significant given the small impact footprint, the ephemeral and opportunistic nature of the common organisms present in the area, and since rapid recovery of existing marine species composition and diversity is expected within two years or less. Additionally, the City is proposing the following Conditions of Approval:

COA BIO-4: Eelgrass.

Prior to any in-water construction, the project area would be surveyed per the Southern California Eelgrass Mitigation Policy (SCEMP). The SCEMP is administered by the U.S. Fish and Wildlife Service, National Marine Fisheries Service (NMFS), and California Department of Fish and Wildlife in order to determine impacts to eelgrass resources. In accordance with the requirements of the SCEMP, a pre-construction eelgrass survey shall be completed by a qualified biologist within 60 days prior to initiation of demolition or construction activities at the site. This survey shall include both area and density characterization of the beds. A post-construction survey shall be performed by a qualified biologist within 30 days following project completion to quantify any unanticipated losses to eelgrass habitat. Impacts shall then be determined from a comparison of pre- and post-construction survey results. Impacts to eelgrass, if any, would require mitigation as defined in the SCEMP. If required following the post-construction survey, a mitigation planting plan shall be developed, approved by NMFS, and implemented to offset losses to eelgrass.

COA BIO-5: Caulerpa.

> Prior to initiation of any permitted disturbing activity, a pre-construction survey of the project area shall be conducted to determine the presence or absence of Caulerpa. Per the National Marine Fisheries Service's (NMFS') Caulerpa Control Protocol, this survey shall be conducted at a Surveillance Level, since Caulerpa has not been detected in King Harbor. Survey work shall be completed no earlier than 90 days prior to the disturbing activity and no later than 30 days prior to the disturbing activity and shall be completed, to the extent feasible, during the high growth period of March 1 – October 31. If detected, NMFS and California Department of Fish and Wildlife will be notified within 24 hours of completion of the survey.

Elements of the proposed project include removal and possible replacement of the Sportfishing Pier, Basin 3 dock replacement/reconstruction and bulkhead repair, and construction of a pedestrian/bicycle bridge and small craft boat launch ramp and breakwater; if these elements are all constructed, the proposed project would result in new or expanded overwater structures. However, given the developed nature of the proposed project area, impacts related to overwater structures and alteration of marine habitat on Essential Fish Habitat (EFH) are anticipated to be less than significant. Further, the following Condition of Approval would be implemented:

COA BIO-6: Compliance with NMFS Guidelines for Overwater Structures

> The proposed project shall comply with National Marine Fisheries Service (NMFS) guidelines for overwater structures and Essential Fish Habitat (EFH). The City will cooperate in any consultation process with NMFS regarding impacts to EFH; consultation would be conducted prior to implementation of the proposed project.

During construction, there would be temporary impacts to federally protected waters that may include effects on aquatic vegetation and benthic communities through direct removal/covering or indirect loss or disturbance due to increased turbidity during construction activities. These short-term and localized impacts are anticipated to be less than significant.

Permanent impacts to federally protected waters would include the placement of fill in areas where new pilings and breakwaters are installed. In addition, permanent alteration of marine habitat types would occur with the installation of the proposed in-water project elements. If the U.S. Army Corps of Engineers (USACE) determines that Seaside Lagoon is jurisdictional waters, a net loss of jurisdictional marine habitat would occur, which is considered a significant impact. If the USACE determine that Seaside Lagoon is not jurisdictional waters, the impact would be less than significant.

If Seaside Lagoon is jurisdictional waters, the significant impacts would be reduced to less than significant by implementation of the following mitigation measure:

MM BIO-4: Fill in Waters of the U.S.

The applicant shall comply with U.S. Army Corps of Engineers (USACE) Clean Water Act and Rivers and Harbors Act permitting requirements. Prior to issuance of construction permits for the in-water elements of the proposed project, the applicant shall demonstrate that any required permits such as Clean Water Act Section 404 permit, Section 401 Water Quality Certification, and/or Rivers and Harbors Act Section 10 permit have been obtained. If it is determined that fill of waters of the United States would result from implementation of the proposed project, authorization for such fill shall be secured through the Section 404 and/or Section 10 permitting process. The net amount of Waters of the United States that would be removed during project implementation shall quantified and replaced or rehabilitated in accordance with the USACE mitigation guidelines. If required in compliance with permit requirements, mitigation shall be implemented that includes one of the following: avoidance, impact minimization, and/or compensatory mitigation. Subject to agency coordination and permit requirements, compensatory mitigation may consist of (a) the enhancement of marine habitat associated with the opening of Seaside Lagoon to the waters of King Harbor or other marine resource restoration, establishment, enhancement, and/or preservation activity within King Harbor or elsewhere Santa Moncia Bay ; (b) obtaining credits from a mitigation bank; and/or (c) making a payment to an in-lieu fee program that will conduct wetland, marine, or other aquatic resource restoration, creation, enhancement, or preservation activities. Any required compensatory mitigation or other mitigation shall be implemented as set forth in the permits.

Should the USACE determine that Seaside Lagoon is not jurisdictional waters, the impacts would be less than significant and no mitigation is required.

Due to the lack of eelgrass (which can provide nursery habitat) or other nursery habitat in the project area, there would be no impact to nursery sites. The construction activities associated with the Horseshoe Pier in water near the sandy beach has the potential to disturb the California grunion spawning if the grunion are present (spawning is between March to August). This impact would be reduced to less than significant by implementation of mitigation measure MM BIO-2, listed above.

The proposed project would not conflict with any local policies or ordinances, including protection of eelgrass, preventing invasive Caulerpa taxifolia, or other policies or ordinances protecting biological resources. Further, the City is proposing COA BIO-4 and COA BIO-5 listed above. Impacts associated with compliance with any local policies or ordinances protecting biological resources are less than significant.

3.3.1 Introduction

This section identifies the existing conditions of terrestrial and water biological resources in the proposed project site and vicinity, presents applicable regulations related to biological resources, and identifies potential impacts on biological resources that may result from implementation of the proposed project. As discussed herein, terrestrial biological resources are very limited, and thus the focus of this analysis is on marine biological resources. The biological resources analysis is based on the *Biological Resources Assessment to Support the Waterfront Project* prepared in conjunction with Merkel & Associates (M&A), and the California Natural Diversity Database records search performed for the project site (see Appendices D1 and D2, respectively).

3.3.2 Environmental Setting

3.3.2.1 Regional Overview

The project site is an approximately 36-acre portion of the Redondo Beach waterfront, located within a highly urbanized setting along King Harbor, in the southern part of the Santa Monica Bay. Approximately 31.2 acres of the project site is land, including Seaside Lagoon, and 4.8 acres is water area made up of Basin 3 [3.5 acres] and the proposed boat ramp area near Mole D [1.3 acres]). The project site and surroundings are developed with uses such as retail/commercial, recreational amenities, and surface and structured parking. King Harbor has four marinas, including one within the project site, that total over 1,400 boat slips.

Terrestrial Resources

The project area lies within a densely developed urban area that is highly disturbed and has been developed and redeveloped several times over during the last 130 years. The majority of the project area has been developed with structures for at least the last 40 years, with some structures dating over 70 years. The area does not contain any ”special status” terrestrial species, including any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380. This information was based on a search of the California Natural Diversity Database (CNDDB, 2015 – Appendix D2 of this Draft EIR) and biological reconnaissance surveys conducted in 2015. Within an urban environment, animal and plant species are generally limited to ornamental plants, common songbirds, and feral and domestic animals.

Marine Resources

Southern California Bight

The Southern California Bight (SCB) is a large and gradual bend in the coastline bounded on the west by the California Current and extends from Point Conception to Cabo Colnett, Baja California, Mexico. The marine life of the SCB is abundant and diverse because of the various habitats, environmental conditions, and persistent upwelling events. Interactions between the physiography, currents, wind, and anthropogenic inputs contribute to the richness of this body of water. The continental shelf within the SCB contains relatively deep nearshore waters and a complex bottom topography resulting in habitats of rapidly changing depths, many hard- and soft-bottom regimes, multiple island outcrops, and deep basins.

Additionally, the SCB is located in a transitional area between Pacific subarctic, Pacific equatorial, and North Pacific central water masses; consequently, the fauna contains representatives from each of these sources. For example, of the 554 species and 144 families of California marine fishes, 481 species (87 percent) and 129 families (90 percent) occur in the SCB. Likewise, the marine benthic invertebrates in the SCB exhibit great diversity, including representatives of nearly all invertebrate phyla. Although, the total number of species in the region is unknown, some researchers estimate there may be more than 5,000 species of invertebrates (infaunal and megabenthic invertebrates) found in the SCB.

Santa Monica Bay

Santa Monica Bay is located within the SCB. Santa Monica Bay bathymetry (underwater terrain) is primarily composed of soft-bottom shelf, punctuated with substantial deep rocky reef (e.g., Short Bank). Two submarine canyons, Redondo and Santa Monica, are prominent features of this otherwise homogeneous setting. Specifically, Santa Monica Bay soft-bottom habitats are a mixture of silt, sand, clay, and gravel. The combination of diverse sediment types and complex bottom topography creates a heterogeneous benthic environment throughout the Bay. The composition of demersal fish and benthic invertebrate populations varies along these heterogeneous gradients.

Water Quality

Water quality within the project area (including the SCB, Santa Monica Bay, and King Harbor) reflects natural seasonal patterns. During late spring through fall, solar heating preferentially warms the ocean surface, resulting in depth-related gradients in water temperature (thermocline). A strong density gradient (pycnocline), related primarily to the water temperature changes with depth, restricts vertical mixing of the water column, which affects the depth distribution of most water quality parameters (Daley et al., 1993). During winter and early spring, the strength of the vertical stratification decreases in response to weaker solar heating, mixing by winter storms, and upwelling.

Upwelling of cold water occurs during periods of equatorward winds when warmer surface waters are moved offshore and replaced by deep water. Local upwelling events are only observed in winter and early spring when nearshore winds within the SCB are comparable in magnitude to those offshore (Dailey et al., 1993). These colder waters have lower dissolved oxygen, but they have higher salinity and, most importantly, are richer in nutrients. Upwelling of nutrient rich, deeper waters is critical to primary production and the productivity of coastal waters. In summer and fall, winds are weak and local upwelling is rarely observed.

El Niño Southern Oscillation (ENSO) is a major source of inter-annual climate variability in the SCB, characterized by a warming of the tropical east Pacific and a rise in sea level that propagates northward into the SCB. The high sea level anomalies in the SCB produce warmer surface water temperatures and a deeper thermocline, while the opposite conditions accompany a cold La Niña event. The ENSO cycle in the Pacific is not regular because of the complex feedback mechanisms between the tropical ocean and the atmosphere, but it occurs on average about every four years and can last a year or more. Major El Niño events can have severe climatic and ecological effects in the SCB.

Additionally, stormwater runoff from coastal rivers and streams adds large volumes of freshwater that can cause turbidity plumes and reductions in near-surface salinity up to many miles from shore. River and stream discharges also add suspended sediments, nutrients, bacteria and other pathogens, and chemical contaminants to nearshore waters. Publicly-owned

treatment works (POTWs) discharge treated sewage effluent to the ocean through subsurface wastewater outfalls, which introduces a low-salinity plume containing suspended solids and pollutants to the marine environment. Historically, municipal wastewaters were the largest source of pollutants to southern California coastal waters. However, more stringent effluent limits have reduced the mass emissions of contaminants from POTWs to the extent that non-point source inputs presently are recognized as the primary source of contaminants to coastal waters of the SCB (Schiff et al., 2000). Wastewater from the City of Los Angeles has been discharged into the waters of Santa Monica Bay since 1894 from the Hyperion Treatment Plant. As the population of Los Angeles grew, so did the flow of sewage, and as a result, treatment practices at Hyperion changed to cope with population growth and the resultant increased sewage flows to the plant. In late 1951, Hyperion initiated full secondary treatment, and by 1957, treatment volume increased to where Hyperion was discharging only partial secondary effluent into Santa Monica Bay through the 5-Mile Outfall. On November 23, 1998, following plant reconstruction and upgrades to the treatment process, Hyperion once again began discharging full secondary-treated effluent into Santa Monica Bay. The plant has a dry weather capacity of 450 million gallons per day (MGD) for full secondary treatment and an 850 MGD wet weather capacity.

Water quality is considered impaired at the Santa Monica Bay Beaches and Santa Monica Bay under the Clean Water Act. Under Section 303(d) of the Clean Water Act, Total Maximum Daily Loads (TMDL) have been adopted for both the Santa Monica Bay Watershed and Santa Monica Bay Beaches to address these impairments. Santa Monica Bay is subject to TMDLs for nearshore debris (trash) and toxics (dichloro-diphenyl-trichloroethane [DDT] and polychlorinated biphenyls [PCBs]). The Santa Monica Bay Beaches are subject to a bacteria TMDL for dry and wet-weather. More detailed information and analysis on existing water quality and the potential impacts from the proposed project can be found in Section 3.8 Hydrology and Water Quality.

Temperature and Salinity

The salinity in the surface waters of the SCB is relatively constant (isohaline) with salinities in the nearshore peaking in July at approximately 33.6 parts per thousand (ppt) and decreasing in late winter and early spring to 33.4 ppt (Dailey et al., 1993). Tide and temperature data are recorded at the National Oceanic and Atmospheric Administration (NOAA) station (Station ID: 9410840) located on the Santa Monica Pier. In 2014, the sea temperatures ranged from a low of 55.8°F in April to a high of 76.1°F in July, with an annual average of 65.3°F.

Located within the project area is an intake to supply once through cooling water to the AES Redondo Beach Generating Station (AES power plant) Units 7 and 8. Approximately 468,000 gallons per minute (gpm) of seawater are supplied to Units 7 and 8 through a 14-foot inside diameter concrete conduit that originates approximately 1,000 feet offshore and draws water from the mouth of the harbor at an approximate depth of 20 feet mean lower low water (MLLW). After passing through the condensers, the temperature of the water is warmed when the units are operating at full load. The temperature increase is less when operating at lower loads. The warmed water is discharged back to the harbor under authorization of National Pollutant Discharge Elimination System (NPDES) permit CA0001201. Cooling water is discharged to Discharge Serial No. 002, which consists of a 14-foot inside diameter concrete conduit that terminates about 300 feet off the beach in King Harbor at a depth of approximately 20 feet below MLLW. Because of this discharge, the waters in the harbor are generally warmer than the offshore waters of Santa Monica Bay. Warmed effluent can usually be detected in the vicinity of the discharge; however, warm waters rarely extend more than a few hundred feet or so out of the harbor into Santa Monica Bay (MBC, 2001).

Beneficial Uses

The existing beneficial uses of Los Angeles County beaches and nearshore areas, as identified in the Basin Plan (RWQCB, 2011) include:

- COMM: includes the uses of water for commercial or recreational collection of fish, shellfish, or other organisms;
- REC-1: includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible;
- REC-2: includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible;
- WILD: includes uses of water that support terrestrial ecosystems;
- MAR: includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds);
- MIGR: includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish;
- SPAWN: includes uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish;
- SHELL: Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes; and
- NAV: includes uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

As discussed previously, it should also be noted that in 1998, Santa Monica Bay was listed under Clean Water Act Section 303(d) as not meeting water quality standards for coliform bacteria. This prevents beaches from attaining REC-1 beneficial use status, and in 2003 the Santa Monica Bay Beaches Bacteria TMDL for wet and dry weather became effective. In addition, a Nearshore and Offshore Debris TMDL is also in effect, and Permittees shall comply with the final water quality-based effluent limitation of zero trash discharged into water bodies within the Santa Monica Bay Watershed Management Area and then into Santa Monica Bay or on the shoreline of Santa Monica Bay no later than March 20, 2020, and every year thereafter. Additionally, Santa Monica Bay is subject to TMDLs for and toxics (dichloro-diphenyl-trichloroethane [DDT] and polychlorinated biphenyls [PCBs]). For additional information on TMDLs, see Section 3.8 Hydrology and Water Quality.

Sediment Quality

In general, sediment quality typically varies in relation to grain size and proximity to input sources. Trace metal and organic contaminants in coastal waters typically have strong affinities for suspended particulates that eventually settle to the bottom where they become incorporated into the bottom sediment. Because of their high surface-to-volume ratio, finer sediments (silts and clays) generally have higher contaminant concentrations than coarser sediments (sands). Once incorporated into bottom sediments, contaminants may be

remobilized through current- or storm induced resuspension, bioturbation, or mechanical disturbance such as dredging.

Within Santa Monica Bay, historic discharges of DDT and PCBs have accumulated in bay sediments and caused contamination of some seafood species. In addition, the Hyperion Treatment Plant, which has been in operation since 1894, discharged raw sewage into the Santa Monica Bay. Prior to 1987, sludge was disposed into Santa Monica Bay from the plant; however, since 1988, full secondary treatment has been used and has resulted in a dramatic reduction in the discharge of solids to the bay.

As part of the NPDES permit for the operation of the Hyperion Treatment Plant and for the discharge of stormwater and urban runoff, sediment samples are collected at 44 offshore stations in Santa Monica Bay. Sediment quality was evaluated using two statistical thresholds. The ERL (Effects Range - Low) test identifies the threshold – or concentration – of metals or organic compounds below which adverse impacts are rarely found. The ERM (Effects Range - Median) identifies the concentration above which adverse impacts are frequently found. Based on their concentrations with respect to ER-L and ER-M, metals were expected to have low biological impact on benthic organisms at the 5-Mile Outfall and other locations sampled in the bay, but total DDT and PCBs were expected to have some biological effects (City of Los Angeles, 2007).

While these findings are important to note, it is unlikely that similar sediment conditions would exist in the project area. Sediment quality in the vicinity of the project area would not be expected to have elevated levels of metals or organics, as the material is primarily coarser sandy material as any fines would be expected to be resuspended and transported due to the high water motion (e.g., surf and littoral currents) present in the nearshore waters. As part of the biennial surveys conducted by Southern California Edison for the Redondo Beach Generating Station, data on sediment chemistry (metals), benthic community structure, and bioaccumulation are collected at monitoring stations primarily located near the area where the power plant discharges cooling water. At the monitoring locations, sediment chemistry concentrations were relatively low, as well as tissue concentrations with the exception of slightly elevated zinc levels. Infaunal and nekton communities were found to be undegraded (SWRCB, 1998).

3.3.2.2 Project Study Area

The study area consists of the project site and the adjacent King Harbor (Figure 3.3-1). Table 3.3-1 details the habitat found within the study area.

Terrestrial Resources

As noted previously, the project area lies within a densely developed urban area that is highly disturbed. There are no special-status terrestrial species, including any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380 in the project area. Within the project boundaries, the terrestrial biology includes approximately 26.1 acres of disturbed urban habitat that is limited to ornamental plants, common songbirds, and feral and domestic animals. This information was based on a search of the California Natural Diversity Database (CNDDB,

Source: City of Redondo Beach, 2008; Noble Consultants, Inc., 2015

2015 - included as Appendix D2 of this Draft EIR) and biological reconnaissance surveys conducted in 2015.

Marine Resources

The project study area is within a working recreational and commercial harbor, and located within the project area is an intake to supply once-through cooling water to the AES power plant Units 7 and 8. Information on the water associated with the AES power plant Units 7 and 8 is presented above under Section 3.3.2.1, under Temperature and Salinity.

Seaside Lagoon

Seaside Lagoon is an excavated and enclosed lagoon located inside King Harbor and was originally built in the 1950s as a recreational amenity. It supports soft-bottom habitat and a sandy beach. The lagoon is a non-tidal saltwater facility fed by a diversion of cooling water from the AES power plant. The lagoon has a storage capacity of approximately 1.5 million gallons of water and a flow-through rate of approximately 200,000 gallons per hour when operating. The lagoon is equipped with both chlorination and de-chlorination facilities. The treatment system consists of adding sodium hypochlorite solution to the influent to maintain a residual chlorine level of approximately 1.0 parts per million in the lagoon. Effluent is dechlorinated with sodium bisulfite to reduce the residual chlorine below 10 parts per billion. The lagoon discharges approximately 3,200 gpm of water through engineered outlet drains into King Harbor when the lagoon is in use and the power plant is operating. The water is discharged through three overflow structures along the northwest edge of the lagoon. From the discharge structures, the water flows by gravity to a vault, then into a conduit that empties into King Harbor at the shoreline embankment. The City of Redondo Beach (City) is required to monitor the water quality as part of the requirements identified in the specified NPDES Permit.

The determination as to whether Seaside Lagoon is a regulated water of the United States (WOUS) is unclear at the present time and would be resolved as a part of the environmental permitting for the proposed project. The Seaside Lagoon is situated in an area that was historically open water and beach face prior to the construction of King Harbor that commenced in 1956. When Seaside Lagoon and the moles in the harbor area were originally constructed, fills were placed in Traditionally Navigable Waters (TNW). Historic photographs and portions of construction plans that have been obtained fail to identify whether Seaside Lagoon was ever completely filled (to the point of being terrestrial as opposed to water or wetland) prior to its being put into the present condition as a drain and fill controlled and seasonally operated sand bottom pool. These sources are not conclusive as to whether, in the 1950s, the area where the Seaside Lagoon is located was entirely filled, and then excavated to construct the lagoon. It is possible that entire area was filled and then subsequently excavated and tied into the cooling water system of the AES power plant for drain and fill purposes; these circumstances may be factors in a jurisdictional determination. The lagoon is operated

seasonally and only by controlled inlet and discharge plumbing. Its water supply is from industrial supply (cooling water), and has been subject to an NPDES permit with a designated receiving water compliance point being within King Harbor. This may indicate that the lagoon has been historically managed as a non-jurisdictional recreational resource. However, the information relating to the early development of the lagoon is not yet definitive and the final determination as to jurisdictional status of Seaside Lagoon rests with the USACE. For purposes of analysis in this EIR, the Seaside Lagoon area is considered potentially jurisdictional.

Marine Survey Results

An interferometric sidescan sonar survey was conducted at the project area in April 2014 and March 2015 to map the existing benthic marine habitat types (for details on the survey methodology, see Appendix D1). The sidescan sonar survey area encompassed approximately 119 acres of King Harbor, including the water portion of the project site (including the areas underneath the Horseshoe Pier and Sportfishing Pier). The habitat types and bathymetry conditions are summarized in Table 3.3-1 and depicted in Figure 3.3-2. Within these habitat types are subclasses including vegetated and non-vegetated habitat, as well as, artificial hard substrate (e.g., rip-rap revetment, piers, and docks). Man-made habitat consisting of rip-rap revetment extends along the majority of shoreline, while a mixture of rip-rap revetment, docks, and concrete bulkhead walls are present along Moles A, B, C, and D, and within Basin 3 (Figure 3.3-2).

Within the survey area, the bottom habitat is primarily unvegetated soft bottom comprised both mud and sand dominated conditions (approximately 83.1 acres). Some vegetated habitat (kelp) occurs in areas with debris or rock to serve as substrate (approximately 7.6 acres) (Table 3.3-1). The slope of the bottom is relatively steep along the rip-rap revetment and reaches depths of approximately -35 feet MLLW within the middle of the basin, and water depths exceeding -60 feet MLLW outside of the breakwater (Figure 3.3-2).

Figure 3.3-2
Marine Habitat Map

Table 3.3-1: Habitats Within the Study Area

Classification	Habitat	Within Project Site Boundary		Marine Survey Area	
		Acres	m^2	Acres	m^2
Upland Habitats	Muted Tidal Lagoon	1.22	4,934.4	1.22	4,934.4
	Pavement	0.34	1,390.6	0.34	1,390.6
	Revetment	0.42	1,700.5	6.16	24,937.4
	Sand Beach	0.93	3,765.3	0.93	3,765.3
	Supratidal Beach	0.11	442.2	1.03	4,174.7
	Urban/Developed	26.13	105,723.8	-	-
Marine: Intertidal: Artificial Substrate	Riprap	0.26	1,051.0	2.80	11,346.6
Marine: Intertidal: Unconsolidated Bottom	Sand Beach	0.16	628.5	3.18	12,877.7
Marine: Subtidal: Unconsolidated Bottom	Soft Bottom	1.97	7,971.7	83.10	336,278.0
Marine: Subtidal: Rock Bottom	Rubble/Cobble	1.14	4,609.0	6.87	27,804.9
	Rubble/Cobble with Kelp	-	-	1.15	4,669.2
	Rubble/Debris	0.02	61.9	0.59	2,389.1
	Scattered Kelp on Rubble and Debris	-	-	6.48	26,233.3
Other: Over Water Structures	Piers and Docks	2.96	11,974.7	4.78	19,362.1
Total (rounded to nearest whole number)		**35.66**	**144,253.60**	**118.63**	**480,163.30**

Source: M&A, 2015 (based on Appendix D1 of this Draft EIR)

Subtidal Unvegetated Habitat

Soft bottom habitats occur throughout most of the project area, with depths ranging from -10 feet to approximately -35 feet MLLW within the harbor, and reaching -65 feet offshore of the Horseshoe Pier. The substrate also ranges from soft muds within the harbor to sand near the mouth of the harbor and extending into the exposed nearshore environment.

Round stingrays (*Urobatis halleri*) and barred sand bass (*Paralabrax nebulifer*) were the only fish observed in the subtidal unvegetated habitat. However, other demersal fish species including spotted sand bass (*Paralabrax maculatofasciatus*), specklefin midshipman (*Porichthys myriaster*), black croaker (*Cheilotrema saturnum*), and gobies (Family Gobiidae) are likely to use this habitat, and in the nearshore waters, other species such as speckled sanddab (*Citharichthys stigmaeus*) are common.

Invertebrates were sparse, although the muds showed numerous signs of burrowing invertebrate activities, likely from bivalves (*Chione* spp., *Macoma nasuta*), the amphipod (*Grandidierella japonica*), ghost shrimp (*Callianassa californiensis*), burrowing anemones (*Harenactis attenuata*), and tube-dwelling anemones (*Pachycerianthus fimbriatus*). Castings from tube dwelling polychaetes were also common on the mud bottom. Invertebrates occasionally seen were the opisthobranch (*Navanax inermis*) and slender sea pen (*Stylatula elongata*). Other invertebrates anticipated to utilize this habitat include gastropods and bivalves such as bubble snail (*Bulla* sp.). In sandier areas, purple olive shell (*Olivella biplicata*), Lewis's moon snails (*Neverita lewisii*), and speckled scallop (*Argopecten circularis*) are expected along with the Pacific sand dollar (*Dendraster excentricus*). Debris found on the bottom supported species more typical of hard substrates, including sponges (*Phylum Porifera*), scale worm (Family *Polynoidae*), golden gorgonians (*Muricea californica*), invasive non-native tunicates (*Styela plicata* and *Botrylloides* spp.), and California spiny lobster (*Panulirus interruptus*). Vegetation on the soft bottom was limited to isolated clumps of the red algae Gracilariopsis sp. and drift algal debris. Occasional small pieces of buried hard substrate were colonized by juvenile giant kelp (*Macrocystis pyrifera*) and feather boa kelp (*Egregia menziesii*).

Subtidal Vegetated Habitat

The most prominent vegetation within the project area consisted of giant kelp beds. The artificial riprap substrate along the breakwater and in the vicinity of the AES power plant structures function as a rocky reef, with understory and canopy forming kelp species present on subtidal boulders. Understory algae on riprap was dominated by coralline algae (*Corallina* spp.), sea lettuce (*Ulva* sp.), and brown and red algae such as *Dictyota flabellata*, *Prionitis lanceolata*, and *Rhodymenia* sp. Canopy forming kelps included giant kelp, feather boa kelp, and sargassum (*Sargassum muticum*). The invasive kelp, *Undaria pinnatifida*, was not observed, but is likely to occur within the harbor. This opportunistic seaweed is able to rapidly colonize new or disturbed substrata and artificial floating structures. When established, *U. pinnatifida* occurs in dense, vigorous stands and forms a thick canopy over the native biota (IUCN Invasive Species Specialist Group, 2007).

Numerous fish and invertebrate species were associated with the kelp beds located along the subtidal riprap, such as several species of bryozoans, along with golden gorgonian (*Muricea californica*). In addition, the rocky substrate supported common kelp forest invertebrates including sea stars (*Asterina miniata, Pisaster giganteus, P. ochraceous*), sea cucumber (*Parastichopus parvimensis*), sea urchins (Strongylocentrotus spp.), and molluscs such as the wavy turbon topsnail (*Megastrea undosa*). Fishes common in southern California kelp forests observed during this survey included opaleye (*Girella nigricans*), sargo (*Anisotremus davidsonii*), senorita (*Oxyjulis californica*), pile surfperch (*Rhacochiluss vacca*), sheephead (*Semicossyphus pulcher*), kelp bass (*Paralabrax clathratus*), zebra perch (*Hermosilla azurea*), garibaldi (*Hypsypops rubicundus*), blacksmith (*Chromis punctipinnis*), black perch (*Embiotica jacksoni*), and kelp surfperch (*Brachyistius frenatus*). One fish species that is not commonly observed in southern California is the broomtail grouper (*Mycteroperca xenarcha*) and several individuals were observed within the kelp forest areas adjacent to the discharge structures.

Along the outer breakwater is scattered hard debris including sunken docks, abandoned mooring anchors, large chain links, railroad track sections, and solitary riprap (M&A, 2013). This debris was colonized by giant kelp and an associated assemblage of kelp bed species, particularly in areas where the debris was frequent enough to support a more dense stand of kelp. Though giant kelp was the dominant species, occasional feather boa kelp and *Sargassum*

were also present. Common red algae on the debris included *Botryocladia* sp. and *Rhodymenia* sp., and similar fish speceis were observed in and around the kelp.

Eelgrass (*Zostera* spp.) is a marine angiosperm that grows on subtidal soft bottom habitats within protected and semiprotected waters. Eelgrass has been reliably recorded in King Harbor at various times over the past decade. This includes mapped observations by M&A in October 2005 of common eelgrass (*Zostera marina*) along the breakwater near the King Harbor Yacht Club (M&A, 2008). An additional second hand information has been received on an occurrence reported by the Vantuna Research Group as occurring in waters approximately 30 feet deep between the bait barge and the mouth of the harbor. This occurrence would have certainly been Pacific eelgrass (*Zostera pacifica*) based on habitat characteristics. Eelgrass is also occasionally found in the wrack along the beach within Redondo Beach, suggesting presence of offshore beds. Knowing of the reports of eelgrass in the Harbor a focused survey for eelgrass was conducted and no beds were located in April 2014 or expanded surveys in March 2015.

Intertidal/Shallow Subtidal Riprap Revetments

Riprap occupies much of the shoreline in the study area, and is generally comprised of boulders found at the outer breakwaters and along the shoreline of many of the basins and channels. Riprap habitat extends from the upper tidal zone (intertidal) to the shallow subtidal zone, extending down to roughly -12 feet MLLW where it transitions to vegetated and/or unvegetated subtidal habitat.

Organisms common to the upper intertidal zone in southern California include periwinkle snails (*Littorina* spp.), barnacles (*Balanus* spp., *Chthamalus fissus*/*dalli*), and limpets (*Lottia* spp.) The mid and low intertidal zones generally support a greater number of organisms due to their greater periods of inundation by the tides. These zones can also be affected by constant surge and wave action. Mussels (*Mytilus* spp.) and gooseneck barnacles (*Pollicipes polymerus*) can form the dominant biomass, while other organisms can include anemones (*Anthopleura xanthogrammica*), snails (*Acanthina* sp.), chitons (*Mopalia muscosa*, *Nutallina californica*), limpets (*Lottia* spp.), and polychaete worms (SAIC, 2010; Appendix D1 of this Draft EIR).

The subtidal riprap had more diversity of flora and fauna. Algal species observed subtidally included coralline algae (*Corallina* spp.), green alga (*Ulva* spp.) and brown algae including *Dictyota flabellata*, *Colpomenia* spp. and the non-native *Sargassum muticum*. Fish and invertebrate species similar to those observed in the vegetated habitats were also observed along subtidal portions of the riprap.

Pier Pilings

Pier pilings provide habitat for an assemblage of organisms known as the fouling community. This community appears to attract schooling fish, which feed on the attached invertebrates and algae, and obtain refuge from predation (Glasby, 1999). The species present and the overall complexity of the fouling community on pier pilings are dependent upon a number of factors including tidal elevation and inundation time, light availability, wave exposure, and size and shape of the pilings themselves (Connell and Glasby, 1999; Connell, 2001). While several studies indicate that man-made marinas do not support the same complexity of organisms as do natural reefs, it is apparent that pier pilings in coastal marinas do provide habitat value for fouling communities and associated fish assemblages (Clynick, 2008). Piles exposed to

greater circulation and higher light levels tend to support the most complex and productive communities.

Piling can support numerous species of sessile species invertebrates. At the highest tidal elevations, the pilings can support barnacles (*Chthamalus* spp., *Balanus* sp.), while at lower tidal elevations, the molluscs (*Ostrea lurida, Mytilus* sp., *Crassostrea gigas*) may be present. Other invertebrates can include sponges (Phylum Porifera), tunicates (*Styela clava, Ciona* spp., and *Botrylloides* sp.), hard and soft bryozoans, and feather duster worms (Family Sabellidae). Mobile invertebrates associated with pilings can include scale worms (Family Polynoidae), and brittle stars (Class Ophiuroidea). Fish species observed around pilings include kelpfish, topsmelt, and barred sand bass. California scorpionfish (*Scorpaena guttata*) are likely to be associated with the pile communities. California scorpionfish is managed by the National Marine Fisheries Service (NMFS) under the Pacific Groundfish Fishery Management Plans (NMFS, 2008). Algal species associated with the piling community included green algae (*Ulva* sp.), coralline red algae (*Corallina* spp.), and brown algae including *Dictyota flabellata*.

Sandy Beach

Sandy beaches are relatively unstable habitats due to daily sand movement associated with waves and currents and larger-scale seasonal cycles of sand movement. The intertidal zone, also known as the littoral zone in marine aquatic environments is the area of the foreshore and seabed that is exposed to the air at low tide and submerged at high tide (i.e., the area between tidemarks).

Most southern California beaches lose sand in the winter and gain sand in the summer. In addition, daily tidal fluctuations affect the distribution of marine organisms. Therefore, marine organisms common in sandy beach habitats are generally mobile and change position with changes in water level and sediment transport (Dailey et al., 1993). Generally, higher abundances and species diversity are found on long, gently sloping beaches, while lower abundances and diversity are present on steep, coarse-grained beaches. Common invertebrates observed on southern California sandy beaches include mole crabs (*Emerita analoga*), beach hoppers (*Megalorchestia* spp, *Orchestodea* spp.), amphipods (e.g., *Eohaustorius* spp.), isopods (e.g., *Excirolana* spp.), and other crustaceans; bean clam (e.g., *Donax gouldii*), Pismo clam (*Tivela stultorum*), and olive snail (*Olivella biplicata*); bloodworm (*Euzonus mucronata*) and other polychaete worms (e.g., *Hemipodus borealis*, *Lumbrineris* spp., *Nephtys californiensis*, *Scololepis* spp.); and nemertean ribbon worms (Dailey et al., 1993).

Sandy beach invertebrates are an important prey base for fish and birds. Nearshore fish forage on the invertebrates when high tides cover the beach. A variety of shorebirds probe the sand in search of worms, crustaceans, and small clams. Gulls are opportunistic feeders on invertebrates they pick from the swash zone or on wrack, as well as trash or debris left by humans. Beaches are important resting areas for shorebirds, gulls, and other seabirds such as terns and the California brown pelican. Terrestrial birds also may forage along the back beach shoreline. Terrestrial insects are also an important ecological component of the sandy beach as they break down kelp wrack (i.e., kelp, algae, and marine plants washed on the shore). The wrack may harbor a variety of insects and invertebrates that are important prey items for gulls and shorebirds.

Fishes known to occur in nearshore sandy beach habitat include California corbina (*Menticirrhus undulatus*), California halibut (*Paralichthys californicus*), topsmelt (*Atherinops affinis*), guitarfish (*Rhinobatus productus*), barred sandbass (*Paralabrax nebulifer*), northern

anchovy (*Engraulis mordax*), Pacific mackerel (*Scomber japonicus*), round ray (*Urobatis halleri*), kelp bass (*Paralabrax clathratus*), walleye surfperch (*Hyperprosopon argenteum*), leopard shark (*Triakis semifasciata*), barred surfperch (*Amphistichus argenteus*), sheephead (*Semicossyphus pulcher*), scorpionfish (*Scorpaena gutatta*), zebra perch (*Hermosilla azurea*), yellowfin croaker (*Umbrina roncador*), spotfin croaker (*Roncador stearnsii*), and white croaker (*Genyonemus lineatus*).

California grunion (*Leuresthes tenius*) may also utilize the sandy beach habitat during certain times of the year. Grunion travel from their habitat in nearshore waters to specific sandy beaches just after certain full and new moons in conjunction with their distinctive mode of spawning. Spawning takes place during nighttime high tides between March and August. Eggs are deposited into the sand of the upper intertidal and then hatch 10 days later following exposure during the next high tide. Given the presence of upper intertidal sandy habitat throughout the year, the beaches within Santa Monica Bay appear to be suitable grunion spawning habitat. Grunion are managed as a game species by the CDFW, who post predicted spawning runs on the internet (www.dfg.ca.gov/marine/grunion.asp).

Epibenthic invertebrates common in shallow subtidal sandy habitats include sand dollars (*Dendraster excentricus*), tube-dwelling polychaete worms (*Diopatra ornata, Pista pacifca*), sea pens (*Sylatula elongata*), sea pansies (*Renilla koellikeri*), crabs (*Heterocrypta occidentalis, Randallia ornata*), snails (*Olivella biplicata*), clams, burrowing anemones (*Haranactis attenuate*), and sea stars (*Astropectin armatus*).

Open Water

Topsmelt were observed in the water column during the survey, and it is likely that Northern and Deepbody Anchovy (*Engraulis mordax* and *Anchoa compressa*) commonly occur in the area. The occurrence of these species in open water is important to several species of piscivorous birds including pelicans, terns, loons, grebes, cormorants, and mergansers, some of which were observed during the survey.

During a 2012 survey conducted in King Harbor, the floating bait barges within the survey area were used for loafing by great blue heron (*Ardea herodias*), double-crested cormorant (*Phalacrocorax auritus*), and western gulls (*Larus occidentalis*). California sea lions also used these structures as haul-outs (M&A, 2013).

3.3.2.3 Special-Status Species

Special-status species including any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, USFWS, or the NMFS, or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380 were evaluated based on a search of the CNDDB (Appendix D2 of this Draft EIR) and species lists provided by USFWS and NMFS. Special-status species that may be expected in the project area at various times include three bird species, one reptile, one fish, and four marine mammals (Table 3.3-2). Several species were observed during the survey and include California brown pelicans (*Pelecanus occidentalis californicus*) double-crested cormorant, Broomtail Grouper, California sea lion (*Zalophus californianus*), and harbor seal (*Phoca vitulina*). California least terns (*Sternula antillarum browni*) are migratory but may forage within the project area during certain times of the year. These species were either observed within the study area or are likely to occur within the project site on a regular basis (Table 3.3-2). None of the avian species nest within the project area, and the nearest least tern nesting colony is located at Marina del Rey, approximately 9 miles north of Redondo

Beach. Harbor seals and sea lions also do not breed at this site but forage and loaf in the area year round. Sea lions are much more common within the harbor than are harbor seals.

Green sea turtles (*Chelonia mydas*) are commonly found in association with warm water discharges from power plants along the southern California coast. This species is expected to be occasionally encountered within the harbor. The nearest consistent population of sea turtles is found within the San Gabriel River approximately 30 shoreline miles to the south. Bottlenose dolphins (*Tursiops truncates*) are not expected to commonly occur in the project area, although there would be a higher likelihood of encountering dolphins outside of the breakwater, while green sea turtle sightings along the open coast would be considered rare.

Table 3.3-2: Special-Status Species with Potential to Occur Within the Project site

Common Name	Scientific Name	Status	Occurrence at Project Site
California Brown Pelican	*Pelecanus occidentalis californicus*	CDFW FP	Present
Double-crested Cormorant	*Phalacrocorax auritus*	CDFW WL	Present
California Least Tern	*Sternula antillarum browni*	SE, FE	Likely*
Green Sea Turtle	*Chelonia mydas*	FT	Infrequent
Broomtail Grouper	*Mycteroperca xenarcha*	CDFW FP	Present
Bottlenose Dolphins	*Tursiops truncates*	MMPA	Not expected
Pacific Harbor Seal	*Phoca vitulina*	MMPA	Likely
Northern Elephant Seal	*Mirounga angustirostris*	MMPA	Not expected
California Sea Lion	*Zalophus californianus*	MMPA	Present

SE – State Endangered; FE- Federally Endangered; FT – Federally Threatened; CDFW SSC- CDFW Species of Special Concern; CDFW-FP – CDFW Fully Protected Species; CDFW-WL- CDFW Watch List; MMPA – species protected by the Marine Mammal Protection Act

*Least terns are a migratory species found in the area from approximately April 1 through September 1 of each year.

Pinnipeds

Between marine industry, tourism, and our shared shoreline habitat, humans are more likely to come into contact with pinnipeds than any other marine mammal. The coast of Redondo Beach and King Harbor are frequented by both the California sea lion (*Zalophus californianus*) and, to a lesser extent, the Pacific harbor seal (*Phoca vitulina richardsi).* The current population trend for California sea lions is on the rise. According to data collected by NOAA and summarized in the 2014 U.S. Stock Assessment Report for the California Sea Lion, pup counts have increased at an annual rate of 5.4 percent between the years of 1975 and 2008 (NOAA, 2015). Populations of harbor seals have also increased, although, population growth appears to have slowed or stabilized in recent years. For multiple reasons, including

the fact that there are ten times fewer harbor seals than sea lions in California, there are far fewer areas of direct public conflict with seals than with sea lions.

Redondo Beach has an established group of sea lions that have become habituated enough to occupy docks and boats, wander the parking lots at the marina and, on occasion display aggressive behavior. Within King Harbor, damage to boats and docks from hauling out sea lions has occurred. Until it sank in 2013, the sea lions used an old bait barge in the main channel of the harbor to haul-out. In June 2015, the City completed a 21-foot by 32-foot floating platform anchored out in King Harbor to support sea lions. The placement of the sea lion haul-out float to draw animals from the docks and boats in the marinas is expected to provide some temporary relief from excessive hauling out in marina and boat locations. There is no indication that the factors leading to expanding occurrence of sea lions within the harbor are changing and it is anticipated that the expanding numbers of human habituated sea lions may move into other available haul out locations. Increasing habituated animals results in increasing aggression, damage to structures, and accumulation of animal wastes in water and haul out areas.

Pinnipeds generally prefer areas where there is less noise and activity (in response to sudden or unusual activity, such as a loud noise or rapid movement, sea lions retreat to the water), and prefer jetties and platforms that keep them up out of the water; therefore, it is expected that the sea lions would prefer the platform and jetties to an area with a lot of people/activity and commotion.

King Harbor has a growing population of sea lions but not harbor seals. In southern California, harbor seals are more likely to haul-out on soft shorelines such as beaches, sand bars, and mudflats than sea lions and sea lions are more likely to haul out on hard structures such as rocks, docks, and boats. However, on island rookeries, sea lions do make extensive use of beach environments. Because of the preference of low elevation hard surfaces for haul-outs, mainland sandy beach environments typically do not support substantial sea lion haul out activity until the nearby hard structures are already occupied by sea lions. The use of beach haul outs typically begins with subordinate male sea lions that are ejected from more desirable locations by dominant bulls. Once occupied, beach haul outs will generally begin to accumulate additional animals comprised of other immature animals. Examples of sea lion populations overflowing from docks and rocky areas on to beaches are beginning to emerge more commonly with the most recent well known example in Southern California being at La Jolla Cove where the popular swimming beach has become a regular use area by hauling out sea lions as they have spread from adjacent rocky bluffs and now also utilize the sand beach as a haul out location. Other examples of smaller sea lion haul-out on public beaches include a berm at the end of a slip fill site on Terminal Island in Los Angeles Harbor, the launch ramp beach within the Del Mar Boat Basin at Oceanside, and Kellogg Beach in San Diego Bay. Conversely, there are also many examples of similar protected recreational beaches that do not have a history of sea lions habitually hauling out on the sand. These include Mothers Beach in Newport Harbor, Mothers Beach in Marina del Rey, Kiddie Beach at Channel Islands, Baby Beach in Dana Point, an even a number of beaches with very low pedestrian traffic such as beaches within the Bolsa Chica Wetlands and Batiquitos Lagoon, State Ecological Reserves.

3.3.2.4 Essential Fish Habitat

Under the provisions of the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, the amendments require the delineation of “essential fish habitat” for all managed species. Essential fish habitat (EFH) has been designated over all tidal marine

waters in southern California. Federal action agencies, which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the NMFS regarding the potential effects of their actions on EFH, and respond in writing to the NMFS's recommendations.

The entire coastal area ranging from the mean high tide line to offshore depths represents EFH, and are managed through two applicable plans, the Pacific Groundfish and Coastal Pelagic fishery management plans (FMPs). The habitat designations associated with those plans are defined below.

EFH for species in the Pacific Groundfish FMP (NMFS, 2008), which applies to over 90 fish species (e.g., flatfish, rockfish, sharks) is identified as all waters and substrate within the following areas:

- Depths less than or equal to 3,500 meters (1,914 fathoms) to mean higher high water (MHHW);
- Water level (MHHW) or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 ppt during the period of average annual low flow;
- Seamounts in depths greater than 3,500 m as mapped in the EFH assessment GIS; and
- Areas designated as Habitat Areas of Particular Concern (HAPC) (e.g., seagrass, kelp canopy, estuaries, rocky reef).

EFH for species in the Coastal Pelagic FMP (NMFS, 1998b), which applies to four fish and one invertebrate species (e.g., anchovy, sardine, Pacific mackerel, jack mackerel, and market squid) is identified as all waters and substrate within the following areas:

- All marine and estuarine waters from the shoreline to the limits of the Exclusive Economic Zone (EEZ), which extends approximately 200 nautical miles offshore; and
- Water surface boundary, which is the water column between the thermoclines where temperatures range from 10 to 26 degrees Centigrade.

The ichthyofauna of King Harbor has been studied intensively and continually since 1974 (Stephens et al., 1994; Pondella et al., 2012), and identified 120 species of fish. Of these species observed in King Harbor, 18 are managed by the NMFS under two Fishery Management Plans (FMPs) – the Coastal Pelagic and Pacific Groundfish Management Plans (Table 3.3-3) (NMFS, 1998a and b).

Table 3.3-3 Managed Species Observed in King Harbor

Common Name	Scientific Name	Common Name	Scientific Name
Coastal Pelagic Fishery Management Plan			
Northern Anchovy	*Engraulis mordax*	Pacific Mackerel	*Scomber japonicus*
Pacific Sardine	*Sardinops sagax*		
Pacific Groundfish Fishery Management Plan			
Kelp Greenling	*Hexagrammos decagrammus*	Calico Rockfish	*Sebastes dallii*
Lingcod	*Ophiodon elongates*	Vermilion Rockfish	*Sebastes miniatus*
English Sole	*Parophrys vetulus*	Blue Rockfish	*Sebastes mystinus*
Curlfin Sole	*Pleuronichthys decurrens*	Bocaccio	*Sebastes paucispinis*
California Scorpionfish	*Scorpaena gutatta*	Rosy Rockfish	*Sebastes rosaceus*
Cabezon	*Scorpaenichthys marmoratus*	Olive Rockfish	*Sebastes serranoides*
Brown Rockfish	*Sebastes auriculatus*	Treefish	*Sebastes serriceps*
Gopher Rockfish	*Sebastes carnatus*		

Source: M&A, 2015 (based on Appendix D1 of this Draft EIR)

3.3.3 Regulatory Framework

This section provides summary background information regarding the regulations for protecting biological resources.

3.3.3.1 Federal Regulations

Clean Water Act

The federal Water Pollution Control Act Amendments of 1972 (33 United States Code [USC] 1251–1376), as amended by the Water Quality Act of 1987, and better known as the Clean Water Act (CWA), is the major federal legislation governing water quality. The purpose of the federal CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Discharges into waters of the United States are regulated under CWA Section 404. A new Final Rule (effective August 28, 2015)[1] defines waters of the United States to include: 1) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce; including all waters subject to the ebb and flow of the tide; 2) all interstate waters, including interstate wetlands; 3) the territorial seas; 4) all impoundments of waters identified as waters of the United States; 5) all tributaries (which may be natural, man-altered, or man-made) that contribute flow directly or through another

[1] http://www2.epa.gov/sites/production/files/2015-06/documents/epa-hq-ow-2011-0880-20862.pdf

water; 6) all waters adjacent to waters identified in 1) through 5), above; and 7) various types of waters or wetlands (described in the Final Rule) identified on a case-specific basis as having a significant nexus to waters identified in 1) through 3), above; and 8) all waters located within the 100 year floodplain of a water identified 1) through 3), above. Important sections of the CWA are discussed below:

- Section 303 requires states to develop water quality standards for inland surface and ocean waters and submit to the U.S. Environmental Protection Agency for approval. Under Section 303(d), the state is required to list waters that do not meet water quality standards and to develop action plans, called total maximum daily loads, to improve water quality.
- Section 304 provides for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the respective Regional Water Quality Control Board (RWQCB). A Section 401 Water Quality Certification (WQC) from the Los Angeles RWQCB would be required for the Proposed Project if a Section 404 permit were required. The 401 WQC would establish water quality objectives to be met during construction.
- Section 402 establishes the NPDES, a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. The NPDES program is administered by the RWQCB. Conformance with Section 402 is typically addressed in conjunction with water quality certification under Section 401.

  As described in Section 3.5.3.4 (Section 3.5 Geology and Soils), erosion and sediment control best management practices (BMPs) would be required to avoid or minimize construction-related stormwater impacts.
- Section 404 provides for issuance of dredge/fill permits by USACE. Permits typically include conditions to minimize impacts on water quality. Common conditions include: 1) USACE review and approval of sediment quality analysis before dredging, 2) a detailed pre- and post-construction monitoring plan that includes disposal site monitoring, and 3) requiring compensation for loss of waters of the United States. The areas of the Project site that occur below mean higher high water (MHHW) would be subject to regulation under Section 404.

Rivers and Harbors Appropriation Act

The Rivers and Harbors Appropriation Act of 1899 (33 USC 403), commonly known as the Rivers and Harbors Act, regulates the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval.

Section 9 of the Rivers and Harbors Act addresses construction of any bridge, dam, dike or causeway over or in navigable waterways and falls under the authority of the U.S. Coast Guard (USCG). Under Section 10, the USACE is authorized to permit other structures in navigable waters, including piers, wharves, jetties, etc.

When reviewing applications for Section 9 (USCG) and Section 10 (USACE) permits, the permitting agency consults with the USFWS and NMFS under the Fish & Wildlife Coordination Act, the Endangered Species Act (ESA) when a project may affect a federally listed species, and NMFS under the Magnuson-Stevens Fishery Conservation and Management Act.

Endangered Species Act

The ESA protects plants and wildlife that are listed as endangered or threatened by the USFWS and NMFS. ESA Section 9 prohibits the taking of endangered wildlife, where taking is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 USC Section 1532[19]). "Harm" and "harass" in the definition of "take" in the ESA are further defined in regulations. "Harass means an intentional or negligent act or omission which creates likelihood of injury to wildlife by annoying to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding, or sheltering. "Harm" means an act that actually kills or injures wildlife, and may include significant habitat modification or degradation (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land, as well as removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under ESA Section 7, federal agencies are required to consult with the USFWS or NMFS if their actions, including permit approvals or funding, may adversely affect an endangered or threatened species (including plants) or its critical habitat. Consultation may follow an informal, or a formal process. In cases where the federal agency determines its action may affect, but would be unlikely to adversely affect, a federally listed species, the agency informally consults with the USFWS and/or NMFS. This informal consultation typically involves incorporating measures intended to ensure effects would not be adverse. Concurrence from the USFWS and/or NMFS concludes the informal process. Without such concurrence, the federal agency formally consults to ensure full compliance with the ESA. Through formal consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement authorizing take of the species that is incidental to an otherwise lawful activity, provided the action will not jeopardize the continued existence of the species.

Magnuson – Stevens Fishery Conservation and Management Act

Under the provisions of the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Federal Register, 1997), the amendments require the delineation of Essential Fish Habitat (EFH) for all managed species. EFH has been designated over all tidal marine waters in southern California. Federal action agencies, which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the NMFS regarding the potential effects of their actions on EFH, and respond in writing to the NMFS's recommendations.

Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (MMPA) prohibits, with certain exceptions, the take of marine mammals in United States waters and by United States citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. The USFWS and NMFS administer the MMPA with a division of responsibilities existing between the agencies.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits take of birds listed under the MBTA. Birds protected under the MBTA are listed under 50 CFR Section10.13. The list includes nearly all native birds. Under the MBTA, take means "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." (50 CFR Section 10.12.).

3.3.3.2 State Regulations

California Coastal Act

The California Coastal Act (CCA) recognizes California ports, harbors, and coastline beaches as primary economic and coastal resources and as essential elements of the national maritime industry. Decisions to undertake specific development projects, where feasible, are to be based on consideration of alternative locations and designs to minimize any adverse environmental impacts. The CCA is implemented by the California Coastal Commission (Coastal Commission).

California Endangered Species Act

The California Endangered Species Act (CESA) requires the California Fish and Game Commission to establish a list of endangered species, and a list of threatened species and to regulate the taking of these species (California Fish and Game Code [FGC] Sections 2050– et. seq.). The CESA defines endangered species as native species or subspecies whose continued existence in California is jeopardized. State-listed threatened species are those not presently facing extinction, but are likely to become endangered in the foreseeable future, in the absence of special protection and management efforts. FGC Section 2080 prohibits take of species listed as endangered or threatened. When a species is both state- and federally listed, an expedited request for consistency with the USFWS biological opinion may be issued through a request for Section 2080.1 consistency determination.

California Fish and Game Code

The California Fish and Game Commission (Commission) is responsible, under the provisions of Fish and Game Code Sections 200–220, for regulating the take of birds, mammals, fish, amphibian, and reptiles; the Commission's authority does not extend to regulating the taking, processing, or use of fish, mollusks, crustaceans, kelp, or other aquatic plants for commercial purposes. However, the Commission does regulate aspects of commercial fishing, including fish reduction; shellfish cultivation; take of herring, lobster, sea urchins, and abalone; kelp leases; lease of state water bottoms for oyster allotments; aquaculture operations; and other activities. These resource protection responsibilities involve the setting of seasons, bag and size limits, and methods and areas of take, as well as prescribing the terms and conditions under which permits or licenses may be issued or revoked by the CDFW. The Commission also oversees the establishment of wildlife areas and ecological reserves, regulates their use, and sets policy for the CDFW.

California Fish and Game Code also prohibits take of fully protected species listed in Fish and Game Code Sections 3511, 4700, 5050, and 5515; incidental take of fully protected species may be authorized through an approved Natural Community Conservation Plan. (Fish and Game Code Section 2835). Species designated as fully protected or protected may or may not be listed as endangered or threatened.

FGC Sections 3503, 3503.5, 3505, 3800, and 3801.6 protect all native birds, birds of prey, specifically identified bird species, and nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any birds of prey (e.g., hawks, owls, eagles, and falcons), including their nests or eggs.

The CDFW is the state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people. The CDFW oversees the

management of marine species through several programs, some in coordination with NMFS and other agencies. The Southern California Eelgrass Mitigation Policy (SCEMP) is administered by the USFWS, NMFS, and CDFW. In addition, the CDFW jointly manages (with NMFS) the implementation of the Caulerpa Control Protocol (CCP), which calls for performance of a survey for Caulerpa before any bottom-disturbing activities.

3.3.3.3 Local Regulations

Redondo Beach Coastal Zoning

Section 10-5.1900 of the Coastal Land Use Plan Implementing Ordinance (Coastal Zoning), within the Redondo Beach Municipal Code (RBMC), contains tree trimming and tree removal requirements for trees in the coastal zone. This includes prohibiting trimming or disturbance of trees that have been used for breeding and nesting by bird species listed pursuant to the Federal or California Endangered Species Acts, California bird species of special concern, and wading birds (herons or egrets) within the previous five years, as determined by a qualified biologist, unless a health and safety danger exists, and prohibiting tree trimming and removal during the breeding and nesting season (January through September) unless a tree is determined to be a danger to public health and safety. Any breeding or nesting tree that must be removed shall be replaced at a 1:1 ratio.

3.3.4 Impacts and Mitigation Measures

3.3.4.1 Methodology

The analysis of biological resources was based on literature review and a biological resources survey, including an in-water survey (described in Appendix D1). Terrestrial and marine species at risk, including species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, were identified, including species that forage in the harbor or use it as a nursery site. The California Natural Diversity Database (CNDDB, 2015 – Appendix D2 of this Draft EIR) was reviewed to identify sensitive species. Sensitive habitat types, such as wetlands, eelgrass and EFH were identified, as well as resident or migrant species that are dependent upon these habitats. This analysis evaluates impacts of the proposed project and identifies mitigation measures to reduce significant impacts

Criteria for determining the significance of project-related impacts on biological resources are based on the resource's relative sensitivity and regional status, including the proportion of the resource that would be affected relative to its occurrence in the project region, the sensitivity of the resource to activities (e.g., noise or disturbance) associated with the proposed project, and the duration or ecological ramifications associated with the effect.

Intertidal and subtidal marine habitats found within the project area are converted from one habitat to another habitat type through some of the project elements. In some cases, the conversions change the nature of the habitat conditions and functions, but may not result in deleterious long-term effects. In the case of conversion of unvegetated soft harbor bottom to hard harbor bottom within outer portions of King Harbor, the expected short-term effect would be loss of benthic marine organisms in the work footprint, with the rapid recolonization of the area by new organisms adapted to the replacement hard bottom. In general, unvegetated shallow water marine habitats are very dynamic and disturbance adapted. This means that when impacted, the rate of resource recovery is very rapid. A study conducted in San Diego

Bay to evaluate the effects of dredging and rates of recovery for demersal fish, epibenthic invertebrates, and benthic infaunal invertebrates demonstrated that demersal fish took between 14 and 22 months to recover. Benthic infauna recovered within 5 months relative to density and biomass but examination of community indices indicated that full recovery may have taken 17 to 24 months. Epibenthic invertebrates recovered within 29 to 35 months in terms of density and biomass. However, the epibenthic invertebrate community composition was still changing or had achieved an alternate stable state near the end of the three-year study (M&A 2010). Because of the rapid recovery of these marine habitats, disturbance such as that associated with maintenance dredging is not considered significant. Where the complete loss of soft bottom habitats occurs the determination of impact significance is based on the degree of ecosystem function provided by the habitat that replaces it. The King Harbor soft bottom marine communities do not support sensitive species and are not considered rare as a habitat type. However, these habitats do support primary and secondary production, provide a trophic resource, and play low to moderate functional roles in nutrient sequestration and transformation, carbon uptake, and production export relative to other marine habitats. As such, the conversion of non-rare rapidly recovering habitat to another habitat type would typically not be considered a significant impact unless the habitat were fully removed from marine influence (i.e., filled to supratidal elevations) or functions were substantially reduced with respect to productivity or contribution to supporting marine ecosystem functions (e.g., covered by structures, substantially isolated from tidal circulation). For these reasons, marine habitat conversions are generally evaluated on the basis of scale and net change in the resource or functional support. In the case of King Harbor habitats, the typical conversion of marine habitat under the proposed project relate to replacement of unvegetated soft harbor bottom with hard bottom consisting of large rock jetty stone, small rock revetment stone, and a limited extent of concrete ramp. In the case of the soft bottom to hard bottom conversion, the change is expected to result in an increase in primary productivity as a result of expansion of attached macroalgae. The rock also would result in increased structural complexity, enhanced fish utilization and benthic community stability. These changes on a whole would not be considered a significant impact to marine environments.

In some instances, the habitat changes that would occur would remove marine habitat all together by raising the area above the highest tides. In these cases, marine functions are lost rather than substituted with another functioning habitat and impacts are considered to be significant. In the case of marine habitat that is altered covering the surface of the water with docks, piers, or wharves, productivity of the water column and bottom are diminished and habitats are somewhat altered. In addition, the water becomes less available to use by foraging birds. In many instances small structures promote increases functioning due to the generation of edge conditions that favor higher diversity and abundance of fish and invertebrates due to many factors including the blending of water column hard substrate such as piles and docks, with benthic soft bottom substrates. An enriched rain of food and hard substrate (e.g., mollusk shell, stony bryozoans, calcareous worm tubes, sponges) from the structures enhances the diversity of the sediment, resulting in increased complexity of the benthos and epibenthic communities. Conversely, larger structures and those with significant pile densities can result in altering circulation and creating zones of high sediment deposition and poor water quality. Large overwater structures can generate a reversal of the increased community complexity and resource abundance seen along structure edge environments due to a reduction of productivity and trophic complexity beneath large wide structures, especially where circulation is diminished. Under structures with poor circulation, organismal rain from the structure to the bottom can result in the development of an elevated biological oxygen demand and localized anaerobic conditions. Hard structures of piles, docks and piers can provide substrate for recruitment of large numbers of exotic species and can contribute to increased representation

of exotic species in the marine environments. However, there is no indication that the presence of such substrate contributes to introduction or dispersal of exotic organisms. In many ways the role of overwater structures can sometimes influence marine communities in a positive or negative manner, depending much on the scale and context of the structures and environments within which they are placed. From a resource management perspective, resource and regulatory agencies of NMFS, USFWS, and CDFW have generally taken a conservative view with respect to the effects of overwater structures, assuming them to be a negative feature unless otherwise demonstrated on a case-by-case basis. For this reason, this conservative approach has been taken in this analysis. However, structures with high clearance above the water and few piles located within well-flushed environments (e.g., Horseshoe Pier) may have minimal effects.

As described in Section 3.3.3, the determination as to whether Seaside Lagoon is a regulated WOUS is unclear at the present time and would be resolved as a part of the environmental permitting for this project. Under the proposed project, 27,224.3 square feet (2,529.2 square meters) of new marine habitat would be created regardless of the determination if Seaside Lagoon is a jurisdictional WOUS. However, to present the most conservative analysis, this EIR assumes that the Seaside Lagoon is jurisdictional.

Sound transmission in the underwater environment can be affected by local bathymetry, substrates, currents, and stratification of the water column. At high intensity, short-term increases in hydroacoustic energy (noise in the water) during construction could affect the behavior and physiology of some species in the immediate vicinity of work. Specific concerns relate to concussive energies associated with impact pile-driving. Fish kills have been reported in association with very large diameter steel pile driving operations such as the San Francisco-Oakland Bay Bridge Project and the Benicia–Martinez Bridge (Caltrans, 2007). The large bridge projects involve the placement of enormous steel piles driven with tremendous hammer energy generating pressure waves comparable to submerged high explosive detonations. For small piles, there is no evidence that would suggest that the equipment and energy necessary to drive the smaller piles results in substantial adverse effects to marine biota. This analysis considers whether the size, material type, and pile driving method would result in the release of hydroacoustic energy at a scale necessary to result in significant impacts to sensitive marine species receptors.

For non-sensitive, non-listed or protected species, non-lethal or non-maiming effects would not be considered significant. This includes effects that lead to behavior responses such as avoidance or startle. Mobile organisms such as fish would be expected to move away from concussive energy sources where energy was below a level required to result in stunning or killing the fish. Similarly highly mobile invertebrates would also be expected to move away. Fish with swim bladders are more susceptible to percussive sound pressure than fish without swim bladders or invertebrates. As such, these fish should be considered in assessing potential injury to non-sensitive marine life. Within the project area there are no piles of sufficient size that have been known to result in fish kills or stunning.

For listed and protected species, take is defined in a manner that includes harassment of animals, even if the harassment does not result in harm or injury. In order to address the potential effects of pile driving on protected resources, Caltrans in coordination with the Federal Highways Administration (FHWA) and the departments of transportation in Oregon and Washington, established a Fisheries Hydroacoustic Working Group (FHWG) to improve and coordinate information on fishery impacts due to underwater sound pressure from pile driving. In addition to the above transportation agencies, the FHWG included representatives

from NMFS, USFWS, CDFW, and USACE (Caltrans, 2007). The FHWG, supported by a panel of hydroacoustic and fisheries experts developed interim guidelines for assessing impacts to aquatic resources that may result from pile driving sound pressures.

Based on previous cetacean behavioral research on the gray whale, a disturbance threshold (Level B harassment) of 160 dB_{RMS} (decibels Root Mean Square) has been identified broadly for marine mammals (Federal Register, 2005). Exposure to sound at this level would likely cause avoidance, but not injury, for marine mammals. The current Level A harassment (injury) threshold for non-explosive sounds has been set at 180 dB_{RMS} for cetaceans and 190 dB_{RMS} for pinnipeds. Based on the proposed pile size (from approximately 11 to 18-inches in diameter), type (timber, steel, or concrete), and pile driving methods (vibratory hammer or impact hammer), anticipated sound that would be generated by pile driving for the proposed project was compared to Level A (injury) and Level B (avoidance) harassment levels. Caltrans has accumulated a broad compendium of hydroacoustic data on impact hammer driven piles and summarized sound pressure levels by pile size and type (Caltrans 2007, updated 2012). The Caltrans data demonstrate that the type of pile and hammer play major roles in the sound pressure generation from driven piles. In addition the density of the sediment into which the pile is driven, the distance from the pile, and the water temperature and salinity also affect sound pressures. Pressures can further be affected by implementation of impact dampening measures or measures taken to minimize pressure propagation through the water. Prior to examining means to substantively soften acoustic impact, the first step is to determine the unattenuated sound levels and distances to sensitive receptors.

As described in the analysis, piles would be set at a number of locations using a vibratory hammer or impact hammer pile driving methods. The current Caltrans 2012 sound compendium was reviewed to determine the anticipated noise level at a near-source receiver (10-meters). From this information, the distance from the driven pile to the Level A and Level B harassment distance from piles was calculated for water depths of 5-meters (sound drops off more rapidly in shallow water).

3.3.4.2 Thresholds of Significance

The proposed project would result in significant impacts associated with biological resources if it would:

BIO-1 Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for engendered, rare or threatened in CEQA Guidelines Section 15380.

BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

BIO-3 Have a substantial adverse effect on federally protected waters or wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.

BIO-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

3.3.4.3 Impacts and Mitigation

3.3.4.3.1 Proposed Project

The main components of the proposed project include the demolition of approximately 207,402 square feet of existing structures, demolition/renovation of the existing Pier Parking Structure, and construction/renovation of up to approximately 523,939 square feet to include retail, restaurant, creative office, specialty cinema, a public market hall, and a boutique hotel, resulting in approximately 304,058 square feet of net new development. As part of the proposed project, the existing utilities, including water pipelines, wastewater conveyance pipelines, lift stations, and electric and natural gas lines would be upgraded/replaced to ensure adequate capacity is available to serve the project site.

The proposed project also includes proposed enhancements to public recreation and open space, including a new boat launch ramp (for small craft) and the opening of Seaside Lagoon to King Harbor as a protected beach and hand launch area (currently the lagoon is not directly connected to the ocean). Because the proposed changes to the Seaside Lagoon would open the lagoon to the Harbor, the biological analysis addresses the lagoon as a marine project element.

In addition, the proposed project includes new and expanded pedestrian and bicycle pathways, as well as new high quality public open spaces. Site connectivity and coastal access would be increased by the establishment of a new pedestrian bridge across the Basin 3 entrance, a new pedestrian promenade along the water's edge from the base of the Horseshoe Pier to Seaside Lagoon, the Pacific Avenue Reconnection, and a new main street flanked by commercial uses and public walkways that would traverse the northern portion of the project site from north to south, approximately parallel to Harbor Drive. Project elements also include operational water quality benefits, measures to accommodate sea level rise projections, and replacement or upgrades to aging infrastructure. Additionally, the timber portion of the Horseshoe Pier would be replaced and the Sportfishing Pier would be demolished and, for the purposes of the analysis below is conservatively assumed to be replaced. Within Basin 3, the dock complex would be rehabilitated (with a similar layout or with fewer slips) and minor bulkhead repairs and replacement of the cap would occur.

As discussed in greater detail in the Project Description (Chapter 2), Section 2.6 Project Construction and Phasing, project construction activities would be implemented within two general areas within the project site: landside (including the northern and southern portions of the project site) and waterside. Each area has distinct construction assumptions associated with the proposed project elements. Construction of waterside elements would involve a combination of land-based and marine-based activities and equipment. For some waterside elements, barges would be used to transport and stage equipment and materials. The timing of the waterfront activities are anticipated to occur within the 27- to 30-month period. The construction sequences (including the seven waterside elements below) and their estimated duration are shown in Table 2-8 in Chapter 2 Project Description. Conservatively, the analysis assumes that construction of up to five of the seven waterside project elements would occur during the same time during the first year of construction (2017) and would overlap with the

landside construction occurring within the northern and southern portions of the site. The proposed project elements that would affect biological resources at the project site the most are the waterside elements, which includes both landside and waterside construction activities. Following is a summary of the construction associated with the seven waterside elements:

Bulkhead Repair: The Bulkhead Repair includes the repair and replacement of the existing deteriorated concrete cap. All work is assumed to be completed within six to eight weeks using conventional land-based equipment. Most of the demolition work would be accomplished using a backhoe. Construction activities would be performed using a skid steer loader and framing crew. The new cap would be formed with pour-in-place concrete methods.

Small Craft Boat Launch Ramp: The Small Craft Boat Launch Ramp includes the development of a two-lane concrete boat ramp, boarding floats, associated parking, and a breakwater. Demolition activities (of the existing site) would be accomplished using conventional land-based construction equipment. Construction activities are anticipated to be completed within eight months and consist of a combination of marine and conventional land-based equipment. All stone to construct the breakwater and launch ramp is anticipated to be delivered via barge. The launch ramp would be finished with a pour-in-place concrete section above the tide level and pre-cast sections for underwater. The parking lot would be paved.

Approximately eight prestressed concrete pilepiles with a less than 18-inch diameter or square section will be driven to position the ramp boarding floats. Piles will be jetted to near full depth and seated to final elevation by impact driver.

Sportfishing Pier: The Sportfishing Pier includes the demolition of the existing pier and possible replacement with a new pier with similar dimensions and footprint. Demolition activities would take approximately three weeks and be accomplished using a derrick crane and barges for the disposal of debris. Reconstruction activities would be completed within nine months using a derrick barge as well as conventional land-based equipment. Approximately 46 treated wood (timber) or concrete piles with an approximate diameter of 11-inches (analyzed as 12-14-inches based on available data) would be driven to support the pier replacement. New wood/timber or concrete piles would be placed/driven by impact hammer from the barge and a land-based crane would be used to install the piles for the first two bents of the pier. Construction of the deck would be completed using a hydraulic crane.

Seaside Lagoon: The Seaside Lagoon includes the conversion of the existing interior swimming lagoon into an embayment directly connected to King Harbor. The existing hand launch and dinghy dock would be removed and excavated to form the lagoon inlet to the Outer Harbor. A two-acre interior area would then be graded to support a semi-circular sandy beach with landscape improvements. Demolition would be completed using conventional land-based earth moving equipment. With the exception of the lagoon's entrance basin, most of the construction activities would use conventional land-based equipment. The lagoon's entrance basin would be constructed using a derrick barge. The dredging of the entrance to the lagoon would generate approximately 6,300 cubic yards of sediment. Past dredging activities in the harbor found the sediment is typically sandy and free of contamination, and the material has historically been found to be suitable to use for beach replenishment south of the harbor (USACE, 2004); therefore, it is likely that the sediment could be re-used within the site/harbor. A sediment characterization study would be conducted to ensure that the dredge material is suitable for reuse. If the material is found to be suitable, the dredged material would be used as new beach fill at the lagoon. It is anticipated that should there be remaining dredge material it would be placed in the harbor; therefore, disposal of the dredge material is assumed to be

beneficially reused and/or disposed of completely within the harbor. Placement of the material within the harbor would require a Section 401 Water Quality Certification permit to address water quality and 404 permit under the Clean Water Act to address discharges associated with dredging and discharge of fill. Stone for slope protection would be brought in as needed. Construction associated with the lagoon is expected to be completed within four months.

Redondo Beach Marina in Basin 3: The marina project includes the demolition of the existing slips, docks, facilities and reconstruction/redevelopment of the entire floating dock complex and appurtenant facilities within the marina. All construction activities would be completed within seven or eight months using a combination of land-based and marine equipment. Demolition of floating docks would be accomplished in sections by towing them to shore and removing them by use of a hydraulic crane. Piles would be removed by crane from a floating barge. Approximately 40 16-inch pre-stressed concrete piles would be delivered by truck and placed from a floating barge using a combination of jetting and an impact hammer. New floating docks would be delivered partially assembled and would be placed by hydraulic crane and outboards. New gangway landings would be constructed by placing piles using a crane on a floating barge and concrete decks would be completed using conventional framework and concrete placement methods.

Horseshoe Pier: The Horseshoe Pier includes the demolition of the existing timber pier (which is constructed of timber piles and pile caps, closely spaced timber stringers, and a thin concrete deck slab) and replacement of the timber constructed portion of the pier with new bents consisting of coated steel pipe piles and concrete pile caps and a thick reinforced concrete deck slab. All work is estimated to be completed within seven months using typical landside construction equipment. Materials would be delivered by truck. A 45-ton land-based crane and vibratory hammer would be used to drive approximately 81 18-inch steel pipe piles. Front end loaders, skid steer loaders, and smaller equipment would be used to ferry equipment and materials to the crew and assist in work tasks.

Pedestrian Bridge: The pedestrian bridge includes construction of a new 12-foot wide, 248-foot long fabricated steel movable bridge crossing the entrance to Basin 3. All construction activities are projected to be completed within six months and assumed to use a combination of marine and conventional land-based equipment. Pier foundations would be built using a floating derrick barge. Bridge sections are assumed to be erected from the land using a 225-ton truck crane. Construction of smaller bridge abutments and underground machinery vaults would be constructed using smaller excavators and loader equipment. Two steel piles of less than or equal to 18-inch diameter would be driven by vibratory hammer. All materials are anticipated to be delivered by truck.

3.3.4.3.2 Impact Determination

Impact BIO-1: The proposed project could have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380.

Terrestrial Resources

Construction and operation of the proposed project would occur in previously developed areas that are devoid of any sensitive terrestrial biological resources, including habitats that support special status species. Therefore, construction and operation of the proposed project would have not have a significant impact, either directly or through habitat modifications, on special status species. See below for a discussion of potential impacts on migratory birds.

Potential Impacts to Nesting Migratory Birds

During construction, tree removal activities would be required to comply with preexisting local tree removal and trimming regulations contained in RBMC Section10-5.1900(h) to avoid disturbance of nesting migratory birds. As described under Section 3.3.3.3 above, the RBMC tree trimming and tree removal requirements for trees in the coastal zone includes prohibiting trimming or disturbance of trees that have been used for breeding and nesting by bird species listed pursuant to the Federal or California Endangered Species Acts, California bird species of special concern, and wading birds (herons or egrets) within the previous five years, as determined by a qualified biologist, unless a health and safety danger exists, and prohibiting tree trimming and removal during the breeding and nesting season (January through September) unless a tree is determined to be a danger to public health and safety. Compliance with the RBMC tree trimming and tree removal requirements would result in less than significant impacts to migratory birds.

Operational impacts would be less than significant because the proposed land uses and intensities in the project area would replace the existing urban habitat, in which birds have demonstrated tolerance to high levels of human activity, and because sensitive species or habitats are absent from the terrestrial portion of the project area. Furthermore, any subsequent operational tree trimming activities would be required to comply with RBMC Section 10-5.1900(h).

Marine Resources

As shown in Table 3.3-2 above, special-status species in the Harbor that would use the water surface and shoreline and would be displaced or affected during construction include California brown pelican, double-crested cormorant, California least tern, broomtail grouper, and marine mammals (such as, harbor seal, and California sea lion). In addition, California grunion may also utilize the sandy beach habitat during certain times of the year.

Of the species in Table 3.3-2, green sea turtles, northern elephant seals, and bottlenose dolphins are unlikely to occur in the project area. Consequently, the proposed project would have no impact to these species. In addition, while California brown pelicans and double-crested cormorants are common in the project area, they do not nest nearby and would not be vulnerable to disturbance while foraging to support young. Furthermore, the amount of

suitable foraging habitat potentially affected by construction is small compared to the amount that is available for these species outside of the project area. Impacts related to construction and operation of the proposed project on other special-status species with potential to occur are described below.

Construction

Impacts to California Least Tern

California least terns are known to forage in the project area during the portion of the year when they are nesting and rearing young, generally between April 1 and September 15. The nearest least tern nesting colony is located at Marina del Rey, approximately nine miles north of Redondo Beach. If nesting California least terns are foraging in the project area during construction, there would be potential for impacts related to mortality or injury from contact with in-water construction equipment. However, given the distance from the nesting area, and because there is a large area outside of the project site available for foraging, it is unlikely that least terns would be foraging within the active construction site. Further, foraging in the vicinity of the proposed project could continue with no adverse effects to bird species. Impacts would be less than significant.

In addition, some adverse effects on water quality would indirectly affect California least terns foraging in the project area. Temporary effects of in-water construction activities may include localized increases in turbidity (which is the cloudiness or haziness of a fluid caused by large numbers of individual particles that are generally invisible to the naked eye) and sedimentation (the tendency for particles in suspension to settle out of the fluid in which they are entrained, and come to rest against a barrier or ocean floor), along with lowered dissolved oxygen levels associated with disturbance of anoxic sulfidic sediments. The greatest potential disturbance of sediment would result from installation of the breakwater associated with the boat ramp, which would disturb approximately 62,000 square feet of soft bottom sediments, 5,800 square feet of rock/cobble bottom, and 980 square feet of intertidal riprap. The opening of Seaside Lagoon would disturb approximately 6,300 square feet of unconsolidated bottom and, 2,000 square feet of rock/cobble/debris bottom, and 5,000 square feet of intertidal riprap. Removal and installation of piles associated with the Horseshoe Pier, Sportfishing Pier, small craft boat ramp, Redondo Beach Marina in Basin 3 dock reconstruction, and pedestrian bridge would result in approximately 500 square feet of bottom habitat disturbance.

In general, such effects can potentially affect least tern foraging ability in the project area: if sufficiently elevated for a sustained period and extended throughout the project area, turbidity would affect the local foraging success of piscivorous avian species (such as the least tern) and displace or lead to mortality of benthic infauna, epifaunal species, and fish. However, these impacts would be short-term and localized to the immediate area where the construction activities are occurring and conditions would return to normal after conclusion of construction activities. Further, the majority of suspended sediments would be expected settle within one hour of dredging or other construction activities (Palermo et al., 2008) or be dispersed by water motion (water currents), thereby avoiding permanent impacts on water quality impacts. Additionally, the amount of suitable foraging habitat potentially affected by construction is small compared to the amount that is available for least terns outside of the project area both elsewhere in King Harbor and within Santa Monica Bay as a whole.

As also discussed in Section 3.8 Hydrology and Water Quality, implementation of BMPs identified by regulatory and resource agencies would be required under the regulatory permits. These BMPs would control the distribution of elevated turbidity in the water column adjacent

to the work area during construction. The BMPs would include measures such as the use of turbidity curtains during the opening of Seaside Lagoon to King Harbor to minimize turbidity drift, use of netting or other debris discharge controls during pier removals and repairs, deployment of debris booms on the water around the demolition area to contain floating debris accidentally discharged, and the skimming of debris off the water surface for upland disposal. The proposed project would be required to obtain a Section 401 WQC from the Regional Water Quality Control Board, which would include water quality monitoring requirements for dissolved oxygen, light transmittance (turbidity), pH, and suspended solids at varying distances from the dredging operations. The dredging permit would include corrective actions in the unlikely event that construction exceeds any of the monitoring levels, such as the use of silt curtains, which would be implemented if the monitoring data indicate that water quality conditions outside of the mixing zone exceed the permit-specified limits.

Therefore, impacts related to turbidity on least terns would be less than significant.

While impacts are less than significant without mitigation, the City is proposing the following Condition of Approvals as part of its Conditional Use Permit procedures:

COA BIO-1: California Least Tern

If the construction schedule overlaps with the California least tern breeding season of April 1 – September 15, a qualified biologist shall conduct monitoring prior to the initial start of construction within 500 feet of in-water construction activities. ("in water work area"). The contractor shall delay commencing work if terns are actively foraging (e.g. searching and diving) within the in-water work area. If no least terns are actively foraging within 500 feet of in-water construction activities, construction can commence. Monitoring shall continue a minimum of one-hour twice a week during in-water project activities during the breeding season (April 1 – September 15). In-water construction will be halted if least terns are actively foraging within 500 feet of the in-water construction area, and can resume when least terns have left the area within 500 feet of in-water construction.

COA BIO-2: Permit Compliance

The applicant shall be required to implement construction measures that include conformance to an approved stormwater water pollution prevention plan (SWPPP) and incorporation of construction-related erosion/sediment control best management practices (BMPs) as appropriate to the specific work. These shall include installation and maintenance of an erosion/sediment barrier in uplands, covering stockpiled material prior to rain events, maintenance of equipment to prevent runoff of grease and oil into adjacent waters, and providing equipment and staff as required to repair and/or implement erosion/sediment control measures. Turbidity curtains will be used during the connection of Seaside Lagoon to King Harbor in order to minimize turbidity drift in the harbor. During pier removals and repairs, netting or other debris discharge controls will be used. On the water, debris booms will be deployed around the demolition area to contain floating debris accidentally discharged. Debris will be skimmed off the water surface and removed for upland disposal.

Compliance with best management practices and construction measures imposed through permit conditions that would be equally or more effective than these measures may be used to satisfy this Condition of Approval.

The applicant shall be required to obtain all required permits from appropriate federal and state agencies for in-water work. In compliance with the Clean Water Act, it is anticipated that a Section 404 permit would be required for project activities, including placement of permanent fill in jurisdictional waters. A Section 401 Water Quality Certification would also be required. In compliance with the Rivers and Harbors Act, it is anticipated that a Section 10 permit would be required for "all work, including structures, seaward of the annual high water line in navigable waters of the United States". Compliance with these permits will include compliance with best management practices and construction measures to control turbidity in the water column adjacent to in-water work. The Water Quality Certification will identify water quality monitoring requirements for dissolved oxygen, light transmittance (turbidity), pH, and suspended solids at varying distances from the dredging operations. The permit will also include corrective actions in the unlikely event that construction exceeds any of the monitoring levels, such as the use of silt curtains, which would be implemented if the monitoring data indicate that water quality conditions outside of the mixing zone exceed the permit-specified limits.

Impacts to Broomtail Grouper

Broomtail grouper are uncommon but may forage in the project area, particularly where kelp is present. As shown in Figure 3.3-2 the primary locations of kelp in the project area are located approximately 660 feet northwest of the pedestrian bridge construction (with the intervening revetment), approximately 450 south and west of the proposed small craft boat launch ramp breakwall, and approximately 380 feet southwest of the Sportfishing Pier.

Grouper and other mobile aquatic species, if present during construction, would be expected to move away from the construction area due to increased noise and human activity. A primary concern with the installation of in-water piles is the hydroacoustic effect of pile driving on fish. Potential impacts to fish from pressure waves generated during impact pile driving include auditory tissue damage (resulting in hearing loss), injury to swim bladders, general tissue rupture and damage, as well as behavioral disturbances and possible injury to eggs and larvae (ICF Jones and Stokes, 2009). Other types of effects associated with pile installation could include temporary impacts on managed fish species due to the unavoidable direct loss/mortality of fishes, larvae, and potential prey items, as well as to behavioral modification of fish including avoidance of areas with increased turbidity and construction activity. Losses to eggs or larvae would be very small scale. Although fish kills have been reported in association with very large diameter steel pile driving operations such as the San Francisco Oakland Bay Bridge Project and the Benecia Martinez Bridge, such impacts would not be expected to result from the pile driving associated with the proposed project. As noted above, in-water construction activities associated with the proposed project would include various types of pile driving, which would create underwater sound. The placement of the 18-inch diameter coated steel piles for the reconstruction of the southern portion of the Horseshoe Pier would require a vibratory hammer for a period of approximately 18 days. The proposed pedestrian bridge is also anticipated to require a vibratory hammer for a period of approximately 12 days to install foundation piles for the two bridge piers. Under the

Sportfishing Pier replacement option, approximately 46 treated timber piles would be installed in about a 30-day period with a pile hammer. The eight guide piles associated with the proposed small craft boat ramp would be installed in approximately three days, and the 55, 16-inch diameter guide piles associated with the Redondo Beach Marina in Basin 3 dock reconstruction would be installed in about 20 days, both using pre-stressed concrete jetted into place and the last few feet of depth finished with a pile hammer. Because of the underwater ground conditions associated with the Horseshoe Pier and proposed pedestrian bridge, a vibratory hammer would be used for installation of the piles at those locations. The use of a vibratory hammer would be less impactful than a pile driver/hammer because the pressure waves generated by an impact hammer is greater than a vibratory hammer (Swan, 2012).

Unlike the large bridge projects (such as the Oakland Bay and Benecia Martinez bridge projects), which involve the placement of enormous steel piles that are being driven with tremendous hammer energy generating pressure waves comparable to submerged high explosive detonations, the piles associated with the proposed project are small in diameter (18-inches and smaller), and the pile-driving would occur over a short period of time (shortest being approximately three days and longest being approximately 30 days). Based on the limited amount of in-water pile-driving, the size and types of piles, period of time needed to install, and use of a vibratory hammer where appropriate, hydroacoustic impacts to fish are not anticipated to be significant. The sound pressure waves from pile-driving could result in temporary avoidance of the construction areas by fish. Further, it is anticipated that fish would return to the area following construction. Therefore, impacts to fish, including broomtail groupers, from pile-driving activities would be less than significant.

Temporary effects on water quality would adversely affect broomtail grouper foraging in the project area. Temporary effects may include localized increases in turbidity and sedimentation, along with lowered dissolved oxygen levels associated with disturbance of anoxic sulfidic sediments. Foraging by broomtail grouper would be adversely affected due to loss of prey species or inability to find prey. This impact would be short-term and localized as it is expected that any resuspended sediment would quickly settle to the bottom or be dispersed by water motion. As also discussed in Section 3.8, the project would be required to implement BMPs through the permitting process, including obtaining a Section 401 WQC from the Regional Water Quality Control Board, which contains water quality monitoring requirements for dissolved oxygen, light transmittance (turbidity), pH, and suspended solids at varying distances from the dredging operations. The dredging permit would include corrective actions in the unlikely event that construction exceeds any of the monitoring levels, which include silt curtains, which would be implemented if the monitoring data indicate that water quality conditions outside of the mixing zone exceed the permit-specified limits. Therefore, impacts related to turbidity would be less than significant. Further, as described presented above, the City is proposing the COA BIO-2 as part of its Conditional Use Permit procedures that requires obtaining appropriate permits for in-water work and compliance with BMPs to control turbidity.

Impacts to Marine Mammals

Marine mammals, including harbor seal, and California sea lion, have the potential to occur in the project area. For the present work piles are proposed to be set at a number of locations using a number of driving methodologies.

As previously described, a disturbance threshold (Level B harassment) of 160 dB_{RMS} (decibels Root Mean Square) has been identified broadly for marine mammals and the current Level A

harassment (injury) threshold for non-explosive sounds has been set at 180 dB_{RMS} for cetaceans and 190 dB_{RMS} for pinnipeds. As shown in Table 3.3-4, pile driving associated with the proposed project is not anticipated to result in sound levels that reach an intensity that would result in Level A harassment with the potential to result in injury to marine mammals.

Table 3.3-4: Pile Driving Harassment Distance

Project Element Pile Type	Pile Driving Methods	Average Sound Level (dB_{RMS}) at 10-meters[1]	Level A (190 dB_{RMS}) Distance (meters)	Level B (160 dB_{RMS}) Distance (meters)[5]
Horseshoe Pier 18-inch diameter coated steel piles	Vibratory hammer	>163 and <169[2]	Not expected to be achieved (>185 dB_{RMS})	>12 and <16
Pedestrian Bridge ≥18-inch diameter coated steel piles	Vibratory hammer	>155 and <169[3]	Not expected to be achieved (>185 dB_{RMS})	>3 and <16
Sportfishing Pier ~11-inch diameter treated timber or concrete piles	Impact hammer	~160[4]	Not expected to be achieved (~176 dB_{RMS})	10 meters
Small Craft Boat Ramp >18-inch diameter prestressed concrete pile	Jetted and impact hammer to set	>166	Not expected to be achieved (>182 dB_{RMS})	>14 meters
Basin 3 Marina 16-inch diameter square prestressed concrete pile	Jetted and impact hammer to set	165-173	Not expected to be achieved (≥189 dB_{RMS})	13-18 meters

Notes:

[1] Reference sound data from Caltrans (2007 updated 2012)

[2] sound data are from bracketing pile sizes of 16-inch and 20-inch steel piles. RMS calculated by L_{eq} 1-sec for vibratory noise sources

[3] sound data are from bracketing pile sizes of 13-inch and 20-inch steel piles. RMS calculated by L_{eq} 1-sec for vibratory noise sources

[4] sound data is for 12-14" dia. piles

[5] distances are calculated assuming water depth of 5 meters

Abbreviations:

dB_{RMS} - decibels Root Mean Square

The calculated distances from hammer driven piles at which Level B harassment take may occur is very limited for all piles being driven and the methods being used. However, as shown in Table 3.3-4, above, Level B harassment take could occur if marine mammals are within the immediate area from piles being driven (within 32 to 59 feet [10 to 18 meters] depending upon the pile type and driving method) at the time full hammer energy is released. This harassment take is anticipated to result in avoidance behavior rather than injury to the animals. During construction, marine mammals would be expected to voluntarily move away from the area due to the presence of noise and human activity. However, if they are present during construction, there would be potential for impacts related to mortality or injury from contact with construction equipment. In addition, potential effects, including behavioral effects and effects on hearing, could occur from the noise of pile driving activities if marine

mammals are nearby. Vibration from pile-driving could result in disturbance (Level B harassment) to marine mammals (particularly harbor seals and sea lions), in the vicinity of pile-driving operations. This would be a significant impact.

Impacts to California Grunion

Construction of Horseshoe Pier within sandy beach habitat could result in direct impacts, including mortality or injury, to grunion if they are present in the project area during their spawning season (March to August). In addition, construction within spawning areas would result in physical harm or disturbance of eggs during the 10-day incubation period following spawning. This would be a significant impact.

Operation

Impacts to California Least Tern, Broomtail Grouper, California Brown Pelican, and Double-crested Cormorant

Operational impacts to California broomtail grouper would not be expected. Broomtail grouper would continue to forage in suitable habitat within the project area following completion of project construction. Similarly, least tern would continue to forage for fish in the project area during certain times of year following completion of project construction. The proposed project would alter the amount of square footage of overwater structures that provide surface cover. While the aquatic habitat still exists below an overwater structure (such as a bridge or a pier), surface cover reduces the amount of available open water foraging habitat for waterbirds, including special-status species such as California least tern, California brown pelican, and double-crested cormorant. Structures with high clearance above the water and few piles located within well-flushed environments (e.g., Horseshoe Pier and pedestrian bridg) would have less effects on limiting foraging habitat that structures that are at or near the water surface (small craft boat launch ramp).

Some of the individual project elements would result in an increase of surface cover, while others would result in a decrease. An increase in surface coverage is considered to be an adverse environmental change, and a decrease of surface coverage is viewed as a benefit (i.e., surface coverage is removed to re-expose waters and create new foraging habitat). Table 3.3-4 below shows the amount of surface water that would be re-exposed through decrease in surface coverage and amount of increase in new surface coverage that would occur under the proposed project. This amount would vary depending on the number of docks established in the rehabilitated Redondo Beach Marina in Basin 3 and if the Sportfishing Pier is reconstructed. The change in surface cover is presented for each project element along with a net change for the entire project site. A plus symbol (+) in the table indicates an increase in surface cover (equating to a loss of open water foraging habitat), whereas a minus symbol (-) indicates a decrease of surface cover (equating to a gain of open water foraging habitat).

As shown in Table 3.3-5, an increase in surface cover would occur from the small craft boat ramp and pedestrian bridge elements; while the reconfiguration of Redondo Beach Marina in Basin 3, would result in a decrease of surface cover if it developed with fewer slips. If the Sportfishing Pier is not replaced, an additional decrease of surface coverage would occur. However, if the Sportfishing Pier is replaced, under either option for the Redondo Beach Marina in Basin 3 and the Sportfishing Pier, there would be a net increase in surface coverage, and this impact would be significant. If the Sportfishing Pier is not reconstructed, no net increase in surface coverage would occur and the impact would be less than significant.

Table 3.3-5: Summary of Exposure of Water or Increase in Surface Cover for Each Project Element Under Various Redondo Beach Marina in Basin 3 and Sportfishing Pier Options

Project Element	Surface Cover Net Change ft^2 (m^2)	
	With Basin 3 – Fewer Slips	**With Basin 3 – Similar Slips**
With Replacement of Sportfishing Pier		
Bulkhead Repair	0	0
Small Craft Boat Launch Ramp (ramp/floats only)	+2,734.7 (+254.1)	+2,734.7 (+254.1)
Sportfishing Pier (Remove/Replace)	0	0
Seaside Lagoon[a]	0	0
Basin 3 – Fewer Slips than Existing	-4,573.9 (-424.9)	NA
Basin 3 – Similar Slips to Existing	NA	-1,427.7 (-132.6)
Horseshoe Pier	0	0
Pedestrian Bridge	+4,065.6 (+377.7)	+4,065.6 (+377.7)
Total (with Removal/Replacement of Sportfishing Pier)	**+2,226.4 (+678.6)**	**+5,372.6 (+1,637.6)**
Total with Removal and No Replacement of Sportfishing Pier		
Sportfishing Pier Removal	-7,290.0 (-677.3)	-7,290.0 (-677.3)
Total (With Removal of Sportfishing Pier)	**-5,063.6 (-1,543.4)**	**-1,917.4 (-584.4)**

Notes:
a. The opening of Seaside Lagoon would result in the creation of 8,107.6 square feet of new open water by the removal of a portion of the existing breakwater, and it is not included in the table because it is not considered exposure of surface water (i.e., it is not considered a reduction of surface coverage).

The proposed project would include reflective lighting along the pedestrian bridge. This lighting would not affect any sensitive biological resources and would not differ substantially from existing lighting conditions, such as reflective lighting that exists from the Sportfishing Pier, Redondo Beach Marina in Basin 3, and Horseshoe Pier. Other lighting along the water's edge, including the promenade would be located along the railing and pointed away from water. Therefore, lighting would not have a significant impact on sensitive species.

Pinnipeds

Redondo Beach has an established group of sea lions that occupy docks and boats. Because of the high level of water and near-shore activity (e.g., use of hand launch ramp and tourist excursions and craft rentals), as well as the constrained entrance as compared to other locations within the harbor, the sea lions are more likely to be found in the marinas outside of the project area than Redondo Beach Marina in Basin 3.

In addition, the floating platform (discussed above) serves the existing sea lion population by providing an area for them to haul-out away from the human activity. The platform is anticipated to reduce the numbers of sea lions using the docks within King Harbor.

As discussed in Section 3.3.2.3, it is also expected that sea lion numbers in the harbor will continue to rise and the provided platform will not be enough and that the sea lion population would expand onto the rocks and available shoreline and other structures over time as dominant alpha male animals begin to establish an effective hierarchy and subordinate beta challengers must relocate. This would likely escalate the need for increasingly severe deterrent measures on other harbor structures as beta males are forced off the sea lion platform and move to a new haul-out to stake an alpha claim (M&A, 2015).

The proposed project includes a number of actions to expand connectivity of land and water facilities for the public. Some of these actions will bring the visiting public into greater contact with the growing coastal populations of pinnipeds, particular California sea lions. The growing sea lion population and reduction in offshore forage conditions is expected to continue to expand undesirable human-pinniped interactions within King Harbor. This increasing negative condition is likely to occur with or without the proposed project. However, some of the elements of the proposed project may support the expansion of sea lion populations and conflicts within the harbor. These include the provision of expanded sheltered haul-out locations within outer portions of the harbor that are generally more attractive to sea lions for hauling out than inner harbor areas (e.g. addition of launch ramp boarding floats, construction of a breakwater, and the connection of Seaside Lagoon to create a protected cove).

The opening of Seaside Lagoon to harbor waters would make the lagoon and beach area accessible to pinnipeds. Seaside Lagoon is expected to be an active land and water public use area, and would have constrained entrance to the embayment because of the breakwalls. Additionally the Turning Basin has a high level of watercraft activity, which is expected to increase with the proposed boat launch ramp; these features are expected to be a deterrent to sea lion use of the site as haul-out. Furthermore, under existing conditions there are alternative locations, which are more conducive for sea lion haul-outs within the harbor, such as the floating platform. Therefore, it is not anticipated that sea lions would use the beach at the modified Seaside Lagoon as a haul out in substantial numbers. However, the sea lion population within southern California is increasing, and under certain conditions, such as years with higher populations of sick and malnourished animals, small open lagoons such as the proposed opening of Seaside Lagoon, have been used by sea lions to haul-out. As previously described, there are examples of sea lions using sandy beaches as haul out locations in southern California, such as La Jolla Cove and Kellogg Beach in San Diego. Also, there are other sandy protected beaches that do not have a history of being used as haul outs, such as Mother's Beach in Marina del Rey and Baby Beach in Dana Point.

Although it is not anticipated sea lions would move into the lagoon during the peak of the summer season (particularly due to high public use in the lagoon), during low use periods of winter sea lions may try to make use of the protected area as a haul-out, especially during high surf and storm periods when the protected beach area provides increased protection against weather. Therefore, the use of areas in the harbor by the sea lions, including a lagoon open to harbor waters, is relatively unpredictable, but low flat areas near the water surface that are accessible would be expected to be used.

As discussed above, sea lions prefer areas away from human activity and thus, high public use within the lagoon would be a detractor from sea lion occupancy as a haul-out. Therefore, it is expected that the floating platform, breakwaters, and docks elsewhere in the harbor that are currently used by sea lions would be the first choice for sea lion haul-out.

Should the platform and other preferable areas be overwhelmed, the lagoon beach might be found to be desirable by the sea lions. However, whether the opening of the lagoon as part of the proposed project would directly affect sea lion haul-out preferences or increase public-pinniped interactions, this would not result in a substantial change in the level of human-pinniped interactions in comparison to existing conditions, such that there would be a substantial adverse impact on pinnipeds.

The proposed small craft boat launch ramp and associated breakwater would result in new structures within the harbor that could potentially be used as a sea lion haul-out. Similar to Seaside Lagoon discussed above, while it is anticipated that with human activity occurring at and near the ramp, as well as with the availability of other potential haul-out locations in the harbor (such as the floating platform installed in June 2015), sea lions would not typically be present at the small craft boat launch ramp or breakwater. However, whether the new breakwater and small craft boat launch ramp would directly affect sea lion haul-out or increase public-pinniped interactions, this would not result in a substantially adverse impact in comparison to existing conditions by increasing interactions such that there would be a substantial adverse impact on pinnipeds.

The amount of dock space within the reconstructed Redondo Beach Marina at Basin 3 would be similar or reduced compared to existing conditions, and the level of waterside activity is expected to remain similar as types of activities and number of vessels occurring at Basin 3 would remain similar, therefore, no increase in human-pinniped interactions over existing conditions would be likely to occur at the Redondo Beach Marina in Basin 3 under the proposed project.

The other water elements that would be implemented under the proposed project, new pedestrian bridge, demolition and potential replacement of the Sportfishing Pier, and replacement of the timber portion of the Horseshoe Pier, would not provide new haul-out sites for sea lions and would not increase the potential for human and pinniped interactions such that there would be a substantial adverse impact on pinnipeds.

As described above, implementation of the opening of Seaside Lagoon and the small craft boat launch facility would not result in a substantial adverse impact on a sensitive species (pinnipeds) in comparison to existing conditions; therefore, impacts would be less than significant. However, given that under existing conditions, the potential of undesirable human-pinniped interactions is growing, it would be appropriate to monitor sea lion activities and respond early with deterrents prior to the development of more serious problems. Therefore, while impacts of the proposed project are less than significant, the City is proposing the following Condition of Approval as part of its Conditional Use Permit procedures:

COA BIO-3: Marine Mammal Management Program

While impacts are less than significant without mitigation, the City is proposing the following Condition of Approval as part of its Conditional Use Permit procedures:

The City of Redondo Beach shall prepare and initiate implementation of a marine mammal management program prior to the opening of Seaside Lagoon to harbor waters as recommended below to deter pinnipeds from establishing a regular presence in the lagoon or immediate vicinity. The marine mammal management program shall include the following:

1) A formal determination must be made that marine mammals in Redondo Beach threaten public health and welfare, and public and private property. Apply accepted standards and practices for addressing public health, welfare, and nuisances.
2) Determine that under section 109(h)(1)(B) of the Marine Mammal Act the City has the authority to take marine mammals for the purpose of protection of public health and welfare.
3) Designate a chain of authority within the City for the implementation of marine mammal deterrents, including providing department director level controls on program implementation.
4) Establish marine mammal controls including, but not limited to:
    a. Eliminate pinniped haul-outs on public and private structures and vessels within King Harbor, except as designated;
    b. Reduce or eliminate existing colonial haul-outs inside King Harbor;
    c. Prevent the development of new colonial haul-outs or seal nursery aggregations on public beaches, structures or jetties of existing King Harbor facilities or harbor revitalization project facilities;
    d. Design revitalization facilities and uses in a manner that minimizes promotion of pinniped use, including:
        i. avoiding development of areas isolated from public access that support flat surface near the water's edge;
        ii. designing public outreach signage regarding marine mammal hazards, not feeding animals or having close interactions, and the presence of a formal deterrent program;
        iii. adoption of stringent and enforceable policies on discharges of fish and food wastes in and around the water, feeding animals, and enticing sea lions and seals;
5) Implement a non-lethal marine mammal management program under the following scenarios:
    d. a normal year
    e. an abnormal year (with abnormally high number of starving or sick pinnipeds)
    f. stranding protocol that addresses both healthy and sick/injured animals and provides contact information for marine mammal rescue organizations and the National Marine Fisheries Service (NMFS) Southwest Region Marine Mammal Stranding Network.

The City shall implement a public education campaign that may include the following:

4) Develop and distribute signage and flyers designed to educate the public on elements of the program;

5) Assign an information officer to talk to the public, where deterrents are implemented, for a period of time until public interest dies down; and
6) Have animal control staff implementing the program wear official City attire and incorporate an informational web-site address on shirts where the public may garner additional information on the program.

Mitigation Measures

The following mitigation measures would be implemented to address construction impacts on special status species:

MM BIO-1: Protection of Marine Mammals During Construction

Pile-driving could result in Level B harassment that leads to avoidance behavior by marine mammals. Therefore, a Level B (harassment) safety zone shall be established around the pile-driving site and monitored for marine mammals as shown in Table MM BIO-1 below. The Level B radius is based on the estimated safe distance for installation of piles proposed for use in the project and is adequate to ensure that pinnipeds would not be exposed to Level B harassment sound levels. The safety zone varies by pile size and hammer type. Because the noise levels anticipated under this analysis are based on measured values from multiple different projects, the protective buffer has been increased by 20 percent to address inherent variability. The buffers are to be applied using direct straight line exposure thus barriers that create an acoustic shadow (e.g., a jetty or breakwater) separating the noise generation from mammal receptors would eliminate the buffer requirement.

The pile-driving site will move with each new pile; therefore, the safety zones shall move accordingly. Prior to commencement of pile-driving, a qualified marine mammal observer on shore or by boat shall survey the safety zone to ensure that no marine mammals are seen within the safety zone before pile-driving of a pile segment begins. If a marine mammal is observed within the safety zone during pile-driving operations, pile driving shall be delayed until the marine mammal moves out of the safety zone. If a marine mammal remains within the zone for at least 15 minutes before pile-driving commences then pile-driving may commence with a “soft start” to warn mobile aquatic species to leave the area.

Table MM BIO-1: Pile Driving Safety Zone Buffer By Pile Type and Pile Driving Method

Project Element Pile Type	Pile Driving Methods	Level B (160 dB_{RMS}) Distance (meters)	Level B Buffer (160 dB_{RMS}) Distance (meters) + 20 Percent
Horseshoe Pier: 18-inch steel piles	Vibratory hammer	>12 and <16	63 ft (19 m)
Pedestrian/Bicycle Bridge: 14-18-inch steel piles	Vibratory hammer	>3 and <16	63 ft (19 m)
Sportfishing Pier: 11-14-inch wood or concrete piles	Impact hammer	10 meters	39 ft (12 m)
Small Craft Boat Launch Ramp: >18-inch concrete pile	Impact hammer	>14 meters	55 ft (17 m)
Marina Reconstruction: 16-inch concrete pile	Impact hammer	13-18 meters	71 ft (22 m)

dB_{RMS} - decibels Root Mean Square
ft – feet
m – meters

If marine mammals enter the safety zone after pile driving of a segment has begun, pile driving will continue. The qualified marine mammal observer shall monitor and record the species and number of individuals observed, and make note of their behavior patterns. If the animal appears distressed, and if it is operationally safe to do so, pile-driving shall cease until the animal leaves the area. Prior to the initiation of each new pile-driving episode, the area will again be thoroughly surveyed by the qualified marine mammal observer.

MM BIO-2: California Grunion

Horseshoe Pier construction under the pier structure shall be scheduled outside of the grunion spawning season (March to August). If construction overlaps the grunion spawning season, grunion monitoring shall be conducted prior to any sandy beach-disturbing activity (check California Department of Fish and Wildlife [CDFW] website for spawning events as spawning events occur bi-weekly). If no grunion are observed, construction may proceed. If spawning occurs within the work area and is of a Walker Scale 2 or higher, work shall not be performed if it would disrupt the high spawning beach used by grunion. Work shall be deferred until after the next spring tide series when eggs would be expected to hatch and larval fish would return to the water. However, construction can continue where work would not overlap with grunion spawning locations.

MM BIO-3: Mitigation for Increase in Surface Coverage

The applicant shall be required to obtain all required permits from appropriate federal and state agencies for in-water work such as a Clean Water Act Section 404 permit, Section 401 Water Quality Certification and/or Rivers and Harbors Act Section 10 permit. Prior to issuance of construction permits for the in-water elements of the proposed project, the applicant shall demonstrate that permits have been obtained and significant impacts related to any net increase in surface coverage of harbor waters that would occur as a result of the proposed project would be mitigated to less than significant through avoidance, impact minimization, and/or compensatory mitigation. Subject to agency coordination and permit requirements, compensatory mitigation may consist of (a) the establishment of an equivalent amount of new open water surface area within King Harbor through the opening of Seaside Lagoon to harbor waters; (b) other marine resource restoration, establishment, enhancement, and/or preservation activity within King Harbor or elsewhere in Santa Monica Bay; (c) obtaining credits from a mitigation bank within the Santa Monica Bay; and/or (d) making a payment to an in-lieu fee program that will conduct wetland, marine, or other aquatic resource restoration, creation, enhancement, or preservation activities within the Santa Monica Bay. Any required compensatory mitigation or other mitigation shall be implemented as set forth in the permits.

Residual Impacts

Mitigation measure MM BIO-1 would reduce to less than significant the potential for noise and vibration from pile-driving associated with the in-water construction of the proposed project to negatively affect marine mammals. In addition, although impacts to fish, including broomtail groupers, from pile-driving activities would be less than significant, mitigation measure MM BIO-2 would further reduce the likelihood of impacts to fish (as well as marine mammals) as a result of pile-driving as a soft start would warn mobile aquatic species to leave the area as pile-driving is commenced.

Mitigation measure MM BIO-2 would reduce to less than significant the potential for construction associated with the Horseshoe Pier at or near the sandy beach habitat of Horseshoe Beach to result in direct impacts (including mortality or injury) to grunion if they are present in the project area during their spawning season (March to August).

Mitigation measure MM BIO-3 would reduce to less than significant the increase in surface coverage if the Sportfishing Pier is reconstructed. If the Sportfishing Pier is not reconstructed, impacts would be less than significant and no mitigation is required.

With implementation of mitigation, significant impacts to special-status species during construction and operation would be reduced to less than significant.

Impact BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Terrestrial Resources

Landside construction would occur in previously developed areas that are devoid of any sensitive terrestrial biological resources. The terrestrial portion of the project area does not include sensitive terrestrial biological resources such as riparian habitat, native grassland, wildlife corridors, vernal pool habitat, freshwater marsh, or other sensitive or critical natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS. Therefore, there would be no impacts to these resources.

Operational impacts would also result in no impact due to the current and proposed land uses and intensities in the project area and lack of sensitive biological resources in the terrestrial portion of the project area.

Marine Resources

Construction

The benthic community is made up of organisms that live within or are attached to bottom sediments, forming an important part of the marine ecosystem. Increased turbidity would affect benthic infauna and epifaunal species. However, these impacts would be short-term and localized as it is expected that any resuspended sediment would quickly settle to the bottom or be dispersed by water motion.

In addition, the benthic community would be directly affected from in-water construction activities such as installation or removal of piles or riprap for the project elements. Table 3.3-6 shows the amount of bottom surface area that would be disturbed during construction of each of the project elements. The worst-case scenario is shown, which includes the option to reconstruct the Sportfishing Pier. The amount of disturbance would be reduced by 36.1 square feet (3.4 square meters) if the Sportfishing Pier is not reconstructed. Construction would result in the temporary loss of the benthic community in these areas. Further, while the entire invertebrate and algal community would be temporarily impacted, it is anticipated that recolonization would occur immediately following the completion of construction and a similar community would develop within one to two years. Given the small impact footprint, the ephemeral and opportunistic nature of the common organisms present in the area, and that rapid recovery of existing marine species composition and diversity is expected within two years or less, this temporary loss would not be significant.

Table 3.3-6: Approximate Amount of Marine Bottom Surface Area and Benthic Habitat Disturbed during Construction

Project Element	Temporary Impacts to Marine Bottom Surface area and Benthic Habitat ft^2 (m^2)
Small Craft Boat Launch Ramp (and breakwater)	68,641.5 (6,377)
Sportfishing Pier (Removal and Replacement)[1]	72.2 (6.8)
Opening Seaside Lagoon[2]	13,212.6 (1,227.5)
Redondo Beach Marina in Basin 3[3]	113.4 (10.5)
Horseshoe Pier[4]	286.2 (26.6)
Pedestrian Bridge[5]	24.7 (2.3)
Total	**82,350.60 (7,651)[6]**

Notes:

ft^2 – square feet, m^2 – square meters

1. Assumes 46, 12-inch piles will be removed or cut below the mudline, and a similar amount but different area would be affected during pile installation. Should the pier not be replaced, impacts would be 36.1 square feet (3.4 square meters)

2. The disturbance area consists of the existing riprap and harbor. It does not include the lagoon.

3. Assumes 57 piles will be removed or cut below the mudline, and 40 piles will be installed in a slightly different location. Area impacted would be the same under either Redondo Beach Marina in Basin 3 vessel slip options.

4. Assumes 81, 18-inch piles will be removed or cut below the mudline, and a similar amount but different area would be affected during pile installation.

5. Assumes 14, 18-inch piles will be installed.

6. This total assumes the Sportfishing Pier is replaced. If the Sportfishing Pier is not replaced, the total area impacted would be 82,314.50 square feet (7,648 square meters) (see note #1 above).

Eelgrass (*Zostera marina*) is a type of seagrass that provides valuable nursery habitat for juvenile fish and other aquatic species. No eelgrass was detected during the baseline survey of the project area. Therefore, adverse effects on eelgrass habitat are not anticipated to occur. Further, in compliance with the SCEMP, the City is proposing the following Conditions of Approval as part of its Conditional Use Permit procedures:

COA BIO-4: Eelgrass.

Prior to any in-water construction, the project area would be surveyed per the Southern California Eelgrass Mitigation Policy (SCEMP). The SCEMP is administered by the U.S. Fish and Wildlife Service, National Marine Fisheries Service (NMFS), and California Department of Fish and Wildlife in order to determine impacts to eelgrass resources. In accordance with the requirements of the SCEMP, a pre-construction eelgrass survey shall be completed by a qualified biologist within 60 days prior to initiation of demolition or construction activities at the site. This survey shall include both area and density characterization of the beds. A post-construction survey shall be performed by a qualified biologist within 30 days following project completion to quantify any unanticipated losses to eelgrass habitat. Impacts shall then be determined from a comparison of pre- and post-

construction survey results. Impacts to eelgrass, if any, would require mitigation as defined in the SCEMP. If required following the post-construction survey, a mitigation planting plan shall be developed, approved by NMFS, and implemented to offset losses to eelgrass.

Caulerpa taxifolia is a green alga native to tropical waters that typically grows in limited patches. This species is invasive, forming thick mats that can displace native aquatic plants and animals and pose a substantial threat to marine ecosystems in California. Caulerpa taxifolia was not detected during the baseline survey of the project area and therefore, an adverse impact associated with spreading of the alga would not occur. Further, as part of the Conditional Use Permit process, the City is proposing the following Condition of Approval as part of its Conditional Use Permit procedures:

COA BIO-5: Caulerpa.

Prior to initiation of any permitted in-water construction activity, a pre-construction survey of the project area shall be conducted to determine the presence or absence of Caulerpa. Per the National Marine Fisheries Service's (NMFS') Caulerpa Control Protocol, this survey shall be conducted at a Surveillance Level, since Caulerpa has not been detected in King Harbor. Survey work shall be completed no earlier than 90 days prior to the disturbing activity and no later than 30 days prior to the disturbing activity and shall be completed, to the extent feasible, during the high growth period of March 1 – October 31. If detected, NMFS and California Department of Fish and Wildlife will be notified within 24 hours of completion of the survey.

Operation

The project area is designated EFH for several species of Pacific groundfish and coastal pelagic organisms. Compliance with the Magnuson-Stevens Fishery Conservation and Management Act, including evaluation of adverse effects to marine habitats in consultation with NMFS, would be required.

As described under Impact BIO-1 and shown in Table 3.3-4 above, if the Sportfishing Pier is not replaced, no net increase in surface coverage would occur and thus, impacts on EFH would be less than significant. The net surface coverage would increase if the Sportfishing Pier is replaced, as described under Impact BIO-1 and shown in Table 3.3-4 above, as, elements of the proposed project, including replacement of the Sportfishing Pier, Basin 3 dock replacement/reconstruction and bulkhead repair, and construction of the pedestrian bridge, would result in a net increase in overwater structures that would adversely affect EFH. These impacts include increased shade and alteration of substrate that can affect aquatic vegetation, benthic communities, and other important aspects of nearshore food webs that support the key ecological functions of fish spawning, rearing and refugia. Given the developed nature of the proposed project area, significant impacts to EFH are not anticipated. Furthermore, the creation of rocky subtidal habitat from the proposed project elements would benefit groundfish species and potentially enhance ecological function within King Harbor. The species most benefited by the rocky subtidal habitat is the California scorpionfish, which would be positively affected by increased habitat availability. Impacts on EFH would therefore be less than significant.

Further, although impacts on EFH are less than significant, as part of the Conditional Use Permit process, the City is proposing the following Condition of Approval as part of its Conditional Use Permit procedures:

COA BIO-6: Compliance with NMFS Guidelines for Overwater Structures[2]

> The proposed project shall comply with National Marine Fisheries Service (NMFS) guidelines for overwater structures and Essential Fish Habitat (EFH). The City will cooperate in any consultation process with NMFS regarding impacts to EFH; consultation would be conducted prior to implementation of the proposed project.

The proposed project would also result in alteration of jurisdictional marine habitats including unvegetated soft bottom habitat, rubble/cobble habitat, riprap habitat, and rocky intertidal and subtidal habitat. These habitat alterations are described under Impact BIO-3 below.

Mitigation Measures

No mitigation would be required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-3: The proposed project could have a substantial adverse effect on federally protected waters or wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.

Terrestrial Resources

Construction would occur in previously developed areas that are devoid of any sensitive terrestrial biological resources. The project area does not include sensitive biological resources such as coastal wetlands, native grasslands, wildlife corridors, vernal pool habitat, riparian wetlands, freshwater marshes, natural animal habitat, or any terrestrial plant or animal species listed in local or regional plans, policies, or regulations, or as state or federally threatened or endangered. Therefore, there would be no impacts to these sensitive terrestrial habitat resources.

Operational effects would have no impacts to sensitive terrestrial habitat resources because the proposed land uses and intensities in the project area would replace existing urban habitat, which does not support sensitive biological resources.

[2] The NMFS Guidelines for Overwater Structures is provided as Appendix D3 of this Draft EIR.

Marine Resources

Construction

During construction, there would be temporary impacts to federally protected waters. Temporary impacts would include effects on aquatic vegetation and benthic communities through direct removal/covering or indirect loss or disturbance due to increased turbidity during construction activities. As described previously, these impacts would be short-term and localized and rapid recovery of existing marine species composition and diversity is expected within two years or less. Additionally, as discussed under Impact BIO-1 above and in Section 3.8 Hydrology and Water Quality, BMPs would be implemented that would control turbidity in the water column adjacent to the work area during construction. Therefore, impacts are anticipated to be less than significant.

Further, as presented under Impact BIO-1, the City is proposing Condition of Approval COA BIO-2 as part of its Conditional Use Permit procedures, which requires the proposed project to implement BMPs and comply with requirements of permits, including the Section 401 WQC and CWA 404 permit, and which would include measures to control turbidity.

Operation

Similar to water surface coverage discussed under Impact BIO-1, individual elements of the proposed project that would result in impacts to federally protected harbor (i.e., jurisdictional waters of the U.S.) may be offset by gains in jurisdictional waters generated by other elements within the project site. A net loss of federally protected waters and associated habitat through implementation of the project would be considered a significant impact. Permanent impacts to federally protected waters would include the placement of fill in areas where new pilings and breakwaters are installed, and other permanent alteration of marine habitat types that would occur with the installation of the proposed project features. Table 3.3-7 below presents a summary of permanent jurisdictional habitat gains and loss that would occur under the proposed project.

The greatest permanent alteration of habitat would occur with construction of the small craft boat launch ramp and breakwater. As detailed in Appendix D1 of the Draft EIR, alteration of a total of approximately 68,898.2 square feet (6,400.9 square meters) of jurisdictional waters would occur. The specific habitat alterations would include unvegetated soft bottom habitat, rubble/cobble habitat, and riprap habitat. Within the project footprint, the entire soft bottom invertebrate and algal community would be lost; however, this loss would not be considered significant due to the ephemeral and opportunistic nature of the common organisms present in soft bottom habitat in the harbor. The placement of riprap would be expected to provide an increase in site structure over the bare bottom conditions and would result in increased productivity and biological diversity compared to mud bottom habitat. Of approximately 68,898.2 square feet (6,400.9 square meters) of habitat alternatives, it is estimated that approximately 67,669.2 square feet (6,286.7 square meters) of rocky intertidal and subtidal habitat will be created and 15,315 square feet (1,422.8 square meters) of marine habitat loss (fill) would occur, because the crest area of the breakwater would extend above the high tide line.

Approximately eight prestressed concrete piles with a less than 18-inch diameter or square section would be driven to position the boat launch ramp boarding floats. The placement of piles would provide an increase in site structure over the unvegetated bottom conditions and the pilings alone would not be expected to result in significant impacts due to the trade-off of low relief mud bottom communities for communities dominated by hard structure pile

communities. Installation of piles for the pedestrian/bicycle bridge would result in the fill of approximately 24.7 square feet (2.3 square meters) of jurisdictional waters and associated loss of benthic habitat.

As previously discussed, for purposes of this analysis, Seaside Lagoon is considered jurisdictional waters of the U.S.[3] Therefore, although, 27,224.3 square feet (2,529.2 square meters) of marine habitat would be established with the opening of Seaside Lagoon; based on regulatory definitions, the amount of new soft bottom intertidal and subtidal habitat within jurisdictional waters would be approximately 8,107.6 square feet (753.2 square meters). As shown on Table 3.3-7, there would not be sufficient new marine habitat created by the opening of Seaside Lagoon within areas that are not federally protected waters that would offset habitat loss that would occur under the proposed project, and therefore, impacts associated with removal, filling, hydrological interruption, of federally protected waters would be significant. However, whether or not Seaside Lagoon is jurisdictional, the functional improvements associated with connecting the lagoon to the harbor would be an ecological benefit.

Table 3.3-7: Summary of Permanent Jurisdictional Habitat Loss/Creation

Project Element	Habitat Type	Habitat Converted ft^2 (m^2)	Habitat Created ft^2 (m^2)	Habitat Loss ft^2 (m^2)
Small Craft Boat Launch Ramp	Conversion of soft bottom to hard bottom habitat	67,669.2 (6,286.7)		
	Loss of open water habitat from fill due to construction of breakwater			-15,315 (1,422.8)
Pedestrian Bridge	Conversion of soft bottom to hard structure pile community	24.7 (2.3)		
Seaside Lagoon if jurisdictional	Conversion of upland habitat to intertidal and subtidal soft bottom habitat		+8,107.6 (753.2)	
Seaside Lagoon if not jurisdictional	Conversion of upland habitat to intertidal and subtidal soft bottom habitat		+27.224.3 (2,529.2)	
Net Change[a,b] if Seaside Lagoon is Jurisdictional				**-7,207.4 (669.6)**
Net Change[a] if Seaside Lagoon is Non-jurisdictional			**+11,909.3**	

Notes: ft^2 – square feet, m^2 – square meters

a. Difference between open water habitat lost from creation of a small craft boat launch and open water habitat created from the opening of Seaside Lagoon.

b. For offsetting fills of jurisdictional waters, only the area considered to be non-jurisdictional waters may be applied under a no-net-loss of jurisdictional waters regulatory policy; however, the functional improvements (i.e., improvement associated with the creation of new habitat) would be 27,224.3 square feet and the opening of Seaside Lagoon to King Harbor is an ecological gain, irrespective of jurisdictional waters, due to the controlled hydrology and treated nature of the waters within the lagoon under existing conditions.

[3] If the USACE determines that the existing Seaside Lagoon is not jurisdictional, 27,224.3 square feet (2,529.2 square meters) of new marine habitat would be created, which would offset effects of other fills of jurisdictional water that would occur under the proposed project.

Based on the developed nature of the project area, no long-term adverse impacts to EFH for either coastal pelagic or groundfish species are expected as a result of the proposed project. Furthermore, the creation of rocky subtidal habitat from the proposed project elements would benefit groundfish species and potentially enhance ecological function within King Harbor. The species most benefited by the rocky subtidal habitat is the California scorpionfish, which would be positively affected by increased habitat availability. Therefore, impacts to EFH relative to a change in jurisdictional marine habitat would be less than significant.

Mitigation Measures

Should the USACE determine that Seaside Lagoon is jurisdictional waters, there would be an adverse impact on federally protected waters and the impact would be significant. Mitigation measure MM BIO-4 would be applied:

MM BIO-4: Fill in Waters of the U.S.

> The applicant shall comply with U.S. Army Corps of Engineers (USACE) Clean Water Act and Rivers and Harbors Act permitting requirements. Prior to issuance of construction permits for the in-water elements of the proposed project, the applicant shall demonstrate that any required permits such as Clean Water Act Section 404 permit, Section 401 Water Quality Certification, and/or Rivers and Harbors Act Section 10 permit have been obtained.
> If it is determined that fill of waters of the United States would result from implementation of the proposed project, authorization for such fill shall be secured through the Section 404 and/or Section 10 permitting process. The net amount of Waters of the United States that would be removed during project implementation shall quantified and replaced or rehabilitated in accordance with the USACE mitigation guidelines. If required in compliance with permit requirements, mitigation shall be implemented that includes one of the following: avoidance, impact minimization, and/or compensatory mitigation. Subject to agency coordination and permit requirements, compensatory mitigation may consist of (a) the enhancement of marine habitat associated with the opening of Seaside Lagoon to the waters of King Harbor or other marine resource restoration, establishment, enhancement, and/or preservation activity within King Harbor or elsewhere Santa Monica Bay ; (b) obtaining credits from a mitigation bank; and/or (c) making a payment to an in-lieu fee program that will conduct wetland, marine, or other aquatic resource restoration, creation, enhancement, or preservation activities. Any required compensatory mitigation or other mitigation shall be implemented as set forth in the permits.

Should the USACE determine that Seaside Lagoon is not jurisdictional waters, the impacts would be less than significant and no mitigation is required.

Residual Impacts

Should the USACE determine that Seaside Lagoon is jurisdictional waters, with implementation of mitigation measure MM BIO-4, impacts associated with removal, filling, hydrological interruption, of federally protected waters would be less than significant.

Should the USACE determine that Seaside Lagoon is not jurisdictional waters, no mitigation is required.

Impact BIO-4: The proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Terrestrial Resources

Construction would occur in previously developed areas that are devoid of any sensitive terrestrial biological resources. No established native resident or migratory wildlife corridors, or native wildlife nursery site, exists within the project site or area. The landside portion of the proposed project is not located between natural resource areas that terrestrial wildlife would need to traverse and there are no known terrestrial wildlife migration corridors within the landside portion of the project area. There are migratory bird species, such as the California least tern, that may use the project site. However, the terrestrial portion of project site contains a small amount of non-native vegetation and does not support habitat suitable for nesting or foraging by the California least tern or other migratory bird species. Further, as discussed under Impact BIO-5 below, any removal of existing ornamental trees and landscaped areas would require compliance with a tree trimming/tree removal ordinance specific to the harbor area relative to bird species of special concern and wading birds. Therefore, construction of the proposed project would not interfere substantially with the aerial migration or foraging of bird species, and impacts would be less than significant.

Operational impacts would also result in less than significant impact due to the current and proposed land uses and intensities in the project area and lack of sensitive biological resources in the terrestrial portion of the project area. No established terrestrial native resident or migratory wildlife corridors, or terrestrial native wildlife nursery site, would occur within the project site during operation and any tree trimming would be required to comply with the tree trimming/tree removal ordinance specific to the harbor area.

Marine Resources

Due to the lack of eelgrass (which can act as nursery habitat) or other nursery habitat in the project area, there would be no impact to nursery sites. In regards to fish migration, there are only a few species in southern California with true migrations. At the project site, there is the potential for California grunion spawning. The construction activities associated with the Horseshoe Pier in water near the sandy beach has the potential to disturb the California grunion spawning if the grunion are present (spawning is between March to August). This impact would be significant.

Once operational, in-water project elements (e.g., small craft boat launch ramp and breakwater, opening of Seaside Lagoon to the harbor, piles for pedestrian bridge) are similar to the type of in-water structures currently within the project site and adjacent harbor; therefore, the proposed project would not interfere substantially with the movement of migratory birds, fish, mammals, or other species, and not impede the use of a native wildlife nursery. No substantial changes in harbor configuration or barriers would be constructed in a manner as to affect fish and wildlife movement patterns. In addition, larval and planktonic species that are dependent upon dispersal through water circulation are not expected to be

substantially affected by the proposed work since no change in water circulation due to construction are anticipated. Impacts from operation would be less than significant.

Mitigation Measures

Implementation of mitigation measure MM BIO-2 (described under Impact BIO-1), which requires grunion monitoring should Horseshoe Pier construction that could disturb sandy beach occur during the grunion spawning season.

Residual Impacts

With implementation of mitigation measure MM BIO-2, impacts related to the movement of migratory birds, fish, mammals, or other species, and the use of a native wildlife nursery would be less than significant.

Impact BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Terrestrial Resources

Construction would occur in previously developed areas that are devoid of any sensitive terrestrial biological resources. During removal of existing ornamental trees and landscaped areas, compliance with the City's Coastal Land Use Plan, which includes landscaping policies and a tree trimming/tree removal ordinance specific to the harbor area relative to bird species of special concern and wading birds (RBMC Section 10-5.1900(h)), would be required. Compliance with the Coastal Land Use Plan and City tree trimming and removal ordinances would result in less than significant impacts.

Operational impacts would be less than significant because any operational tree trimming activities would be required to comply with RBMC Section 10-5.1900(h).

Marine Resources

As detailed in Impact BIO-2 above, no eelgrass or Caulerpa taxifolia have been identified with the project study area and the proposed project would not conflict with any local policies or ordinances protecting biological resources. Therefore, impacts are less than significant. Further, the City is proposing COA BIO-4 and COA BIO-5, presented under Impact BIO-2, which require compliance with policies related to eelgrass and Caulerpa taxifolia as part of the Conditional Use Permit process.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.3.4.4 Cumulative Impacts

The evaluation of cumulative impacts on biological resources considers the anticipated population growth within the City, and associated plan buildout of the harbor area first and then effects to biological resources in the adjacent Santa Monica Bay, as applicable. The

City's Coastal Zoning Ordinance sets a development cap of 400,000 net new square feet of floor area based on existing land use on April 22, 2008 in the entire harbor area (CC coastal commercial zones). With implementation of the proposed project, there would be 72,876 square feet of allowable new development for future projects. Given the limit on the allowable development within the harbor area, and the fact that the project site is devoid of any sensitive terrestrial biological resources, the proposed project would not contribute to a significant cumulative impact relative to terrestrial biological resources during construction or operation.

No foreseeable in-water construction projects in the harbor have been identified other than the proposed project. In-water construction impacts associated with the proposed project, include increased turbidity that would affect water quality, noise associated with pile driving, and disruption of grunion spawning; these effects would be temporary and localized, and, with implementation of mitigation, the proposed project would not make a cumulatively considerable contribution to a significant cumulative impact. Further, as with the proposed project, any future projects would be required to comply with federal, state, and local laws, regulations, and policies regarding protection of biological resources.

Development of new in-water structures is not limited by the 400,000 square foot development cap; however, the harbor is currently developed with existing in-water structures and facilities, including marinas, floating barge, and breakwaters, and there are no foreseeable future waterside projects. However, under Impact BIO-1, there would be potential impacts to directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species within the harbor. These special-status species include marine mammals (including harbor seal, and California sea lion); and fish such as the Broomtail grouper and California grunion. Mitigation measure MM BIO-1 would reduce to less than significant the potential for noise and vibration from pile-driving associated with the in-water construction of the proposed project to negatively affect marine mammals. In addition, although impacts to fish, including broomtail groupers, from pile-driving activities would be less than significant, mitigation measure MM BIO-1 would further reduce the likelihood of impacts to fish (as well as marine mammals) as a result of pile-driving as a soft start would warn mobile aquatic species to leave the area as pile-driving is commenced. Mitigation measure MM BIO-2 would reduce to less than significant the potential for construction associated with the Horseshoe Pier at or near the sandy beach habitat of Horseshoe Beach to result in direct impacts (including mortality or injury) to grunion if they are present in the project area during their spawning season (March to August). With implementation of mitigation, significant impacts to special-status species during construction would be reduced to less than significant and the proposed project would not result in a cumulatively considerable contribution to an impact, either directly or through, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380.

As it relates to habitat, if the Sportfishing Pier is reconstructed, there would be a net increase in surface coverage, which would result in a decrease in open-water foraging habitat. The impact would be significant. MM BIO-3 would require that should the Sportfishing Pier be reconstructed, the proposed project would be required to comply with any and all mitigation requirements set forth in required resource agency permits established for purposes of addressing a loss of a loss in surface cover, which may include compensatory mitigation to establish new open water surface area at Seaside Lagoon. With implementation of mitigation, or if the Sportfishing Pier is not reconstructed, impacts would be less than significant and the operation of the proposed project would not result in a cumulatively considerable contribution, either directly or through, on any species identified as a candidate, sensitive, or special-status

species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for endangered, rare or threatened in CEQA Guidelines Section 15380.

It is anticipated that with human activity occurring at and near the boat launch ramp, as well as with the availability of other potential haul-out locations in the harbor, sea lions would not typically use Seaside Lagoon or the small craft boat launch ramp facility as a haul out. However, the sea lion population is increasing and should the floating platform and other preferable areas be overwhelmed, Seaside Lagoon and the boat launch ramp facility might be found to be desirable by the sea lions. However, whether the proposed project would directly affect sea lion haul-out preferences or increase public-pinniped interactions, this would not result in a substantial change in the level of human-pinniped interactions in comparison to existing conditions, such that there would be a substantial adverse impact on pinnipeds. The proposed project would not make a cumulatively considerable contribution to a significant cumulative impact.

As related to Impact BIO-2, based on the developed nature of the project area, no long-term adverse impacts to EFH for either coastal pelagic or groundfish species are expected as a result of the proposed project. Furthermore, the creation of rocky subtidal habitat from the proposed project elements would benefit groundfish species and potentially enhance ecological function within King Harbor. The species most benefited by the rocky subtidal habitat is the California scorpionfish, which would be positively affected by increased habitat availability. Therefore, impacts to EFH would be less than significant and the proposed project would not result in a cumulatively considerable contribution to a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

As it relates to Impact BIO-3, during construction, there would be temporary impacts to federally protected waters that include effects on aquatic vegetation and benthic communities through direct removal/covering or indirect loss or disturbance due to increased turbidity during construction activities. As described previously, these impacts would be short-term and localized and rapid recovery of existing marine species composition and diversity is expected within two years or less. Therefore, impacts are anticipated to be less than significant.

During operation, individual elements of the project that result in fills of the jurisdictional harbor waters may be offset by gains in jurisdictional waters generated by other elements. A net loss of jurisdictional waters through implementation of the project would be considered a significant impact. Permanent impacts to federally protected waters would include the placement of fill in areas where new pilings and breakwaters are installed, and other permanent alteration of marine habitat types that would occur with the installation of the proposed project features. The greatest permanent alteration of habitat would occur with construction of the small craft boat launch ramp and breakwater. Within the project footprint, the entire soft bottom invertebrate and algal community would be lost; however, this loss would not be considered significant due to the ephemeral and opportunistic nature of the common organisms present in soft bottom habitat in the harbor. The placement of riprap would be expected to provide an increase in site structure over the bare bottom conditions and would result in increased productivity and biological diversity compared to mud bottom habitat. Similarly, the placement of piles would be expected to provide an increase in site structure over the unvegetated bottom conditions and the pilings alone would not be expected

to result in significant impacts due to the trade-off of low relief mud bottom communities for communities dominated by hard structure pile communities.

Permanent impacts to federally protected waters would include the placement of fill in areas where new pilings and breakwaters are installed. In addition, permanent alteration of marine habitat types would occur with the installation of the proposed in-water project elements. If the USACE determines that Seaside Lagoon is jurisdictional waters, a net loss of jurisdictional marine habitat would occur, which is considered a significant impact. If the USACE determine that Seaside Lagoon is not jurisdictional waters, the impact would be less than significant. MM BIO-4 would require that should there be a loss in jurisdictional waters/habitat, the proposed project would be required to comply with requirements of the regulatory permits, including a Section 404 and Section 10 permit, including compensatory mitigation that may involve habitat restoration associated with the opening of Seaside Lagoon or other mitigation requirements. With implementation of mitigation, or if Seaside Lagoon is not jurisdictional, impacts would be less than significant and the operation of the proposed project would not result in a cumulatively considerable contribution to a substantial adverse effect on federally protected waters or wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.

In addition, based on the developed nature of the project area, no long-term adverse impacts to EFH for either coastal pelagic or groundfish species are expected as a result of the change in jurisdictional marine habitat (whether or not Seaside Lagoon is determined to be jurisdictional). Furthermore, the creation of rocky subtidal habitat from the proposed project elements would benefit groundfish species and potentially enhance ecological function within King Harbor. The species most benefited by the rocky subtidal habitat is the California scorpionfish, which would be positively affected by increased habitat availability. Therefore, impacts to EFH relative to a change in jurisdictional marine habitat would be less than significant and the proposed project would not have a cumulatively considerable contribution to a substantial adverse effect on federally protected waters or wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.

As it relates to Impact BIO-4, due to the lack of eelgrass (which can act as nursery habitat) or other nursery habitat in the project area, there would be no impact to nursery sites. In regards to fish migration, there are only a few species in southern California with true migrations. At the project site, there is the potential for California grunion spawning. The construction activities associated with the Horseshoe Pier in water near the sandy beach has the potential to disturb the California grunion spawning if the grunion are present (spawning is between March to August). This impact would be significant. With implementation of mitigation measure MM BIO-2, impacts related to the spawning of the California grunion would be less than significant. Once operational, in-water project elements (e.g., small craft boat launch ramp and breakwater, opening of Seaside Lagoon to the harbor, piles for pedestrian bridge) are similar to the type of in-water structures currently within the project site and adjacent harbor; therefore, the proposed project would not interfere substantially with the movement of migratory birds, fish, mammals, or other species, and not impede the use of a native wildlife nursery. This is based on the fact that no substantial changes in harbor configuration or barriers would be constructed in a manner as to affect fish and wildlife movement patterns. In addition, larval and planktonic species that are dependent upon dispersal through water circulation are not expected to be substantially affected by the proposed work since no change in water circulation due to construction are anticipated. Impacts from operation would be less

than significant. Therefore, the construction and operation of the proposed project would not result in a cumulatively conservable contribution movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Finally, as it relates to Impact BIO-5, as detailed in Impact BIO-2 above, no eelgrass or Caulerpa taxifolia have been identified with the project study area and the proposed project would not conflict with any local policies or ordinances protecting biological resources. Therefore, impacts are less than significant and the construction and operation of the proposed project would not result in a cumulatively conservable contribution to a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Cumulative Mitigation Measures

Implementation of mitigation measures MM BIO-1 and MM BIO-2 would reduce temporary construction impacts associated with noise from pile-driving, and disruption of grunion spawning to less than significant. MM BIO-3 would reduce impacts associated with an increase in surface coverage to less than significant. MM BIO-4 would reduce impacts on waters of the US to less than significant.

Cumulative Residual Impacts

With implementation of mitigation measures MM BIO-1 through MM BIO-3, impacts associated with construction would be reduced to less than significant. Impacts to waters of the US would be less than significant after implementation of MM BIO-4.

3.3.4.5 Summary of Impact Determinations

The following Table 3.3-8 summarizes the impact determinations of the proposed project in addition to adopted growth projections (i.e., potential cumulative impacts) related to biological resources, as described in the detailed discussion above.

Table 3.3-8: Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project and Cumulative Growth

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
BIO-1: The proposed project could have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, or any species that meets the criteria for endangered, rare, or threatened in	Proposed Project: Significant – construction and operation	Proposed Project: Mitigation measures MM-BIO-1 through MM BIO-3	Proposed Project: Less than significant
	Cumulative: Significant (cumulatively considerable contribution) – construction and operation	Cumulative: Mitigation measures MM-BIO-1 through MM BIO-3	Cumulative: Less than significant (not cumulatively considerable)

CEQA Guidelines 15380.			
BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.	Proposed Project: Less than significant	Proposed Project: No mitigation is required	Proposed Project: Less than significant
	Cumulative: Less than significant (no cumulatively considerable contribution)	Cumulative: No mitigation is required	Cumulative: Less than significant (not cumulatively considerable)
BIO-3: The proposed project could have a substantial adverse effect on federally protected waters or wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.	Proposed Project: Significant - operation	Proposed Project: Mitigation measure MM-BIO-4	Proposed Project: Less than significant
	Cumulative: Significant (cumulatively considerable contribution) - operation	Cumulative: Mitigation measure MM-BIO-4	Cumulative: Less than significant (not cumulatively considerable)
BIO-4: The proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Proposed Project: Significant – construction (impacts on grunion spawning site during construction)	Proposed Project: Mitigation measure MM-BIO-2	Proposed Project: Less than significant
	Cumulative: Significant – construction (impacts on grunion spawning site during construction) (cumulatively considerable contribution)	Cumulative: Mitigation measure MM-BIO-2	Cumulative: Less than significant (not cumulatively considerable)
BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Proposed Project: Less than significant	Proposed Project: No mitigation is required	Proposed Project: Less than significant
	Cumulative: Less than significant (no cumulatively considerable contribution)	Cumulative: No mitigation is required	Cumulative: Less than significant (not cumulatively considerable)

3.3.4.6 Summary of Mitigation Measures

Implementation of the following mitigation measures would be required to reduce significant biological resources impacts:

MM BIO-1: Protection of Marine Mammals During Construction

Pile driving associated with the proposed project is anticipated to result in sound levels that reach an intensity that would result in Level A harassment with the potential to result in injury to marine mammals. Pile-driving could result in Level B harassment that leads to avoidance behavior by marine mammals. Therefore, a Level B (harassment) safety zone shall be established around the pile-driving site and monitored for marine mammals. The Level B radius is based on the estimated safe distance for installation of piles proposed for use in the project. The safety zone varies by pile size and hammer type. Because the noise levels anticipated under this analysis are based on measured values from multiple different projects, the protective buffer has been increased by 20 percent to address inherent variability. The buffers are to be applied using direct straight line exposure thus barriers that create an acoustic shadow (e.g., a jetty or breakwater) separating the noise generation from mammal receptors would eliminate the buffer requirement.

Project Element Pile Type	Pile Driving Methods	Level B (160 dB_{RMS}) Distance (meters)	Level B (160 dB_{RMS}) Distance (meters) + 20%
Horseshoe Pier: 18-inch steel piles	Vibratory hammer	>12 and <16	63 ft (19 m)
Pedestrian/Bicycle Bridge: 14-18-inch steel piles	Vibratory hammer	>3 and <16	63 ft (19 m)
Sportfishing Pier: 11-14-inch wood or concrete piles	Impact hammer	10 meters	39 ft (12 m)
Small Craft Boat Launch Ramp: >18-inch concrete pile	Impact hammer	>14 meters	55 ft (17 m)
Marina Reconstruction: 16-inch concrete pile	Impact hammer	13-18 meters	71 ft (22 m)

The pile-driving site will move with each new pile; therefore, the safety zones shall move accordingly. Prior to commencement of pile-driving, a qualified marine mammal observer on shore or by boat shall survey the safety zone to ensure that no marine mammals are seen within the safety zone before pile-driving of a pile segment begins. If a marine mammal is observed within the safety zone during pile-driving operations, pile driving shall be delayed until the marine mammal moves out of the safety zone. If a marine mammal remains within the zone for at least 15 minutes before pile-driving commences then pile-

driving may commence with a "soft start" to warn mobile aquatic species to leave the area.

If marine mammals enter the safety zone after pile driving of a segment has begun, pile driving will continue. The qualified marine mammal observer shall monitor and record the species and number of individuals observed, and make note of their behavior patterns. If the animal appears distressed, and if it is operationally safe to do so, pile-driving shall cease until the animal leaves the area. Prior to the initiation of each new pile-driving episode, the area will again be thoroughly surveyed by the qualified marine mammal observer.

MM BIO-2: California Grunion

Horseshoe Pier construction (or any beach-disturbing activity) shall be scheduled outside of the grunion spawning season (March to August). If construction overlaps the grunion spawning season, grunion monitoring shall be conducted prior to any beach-disturbing activity (check CDFW website for spawning events as spawning events occur bi-weekly). If no grunion are observed, construction may proceed. If spawning occurs within the work area and is of a Walker Scale 2 or higher, work shall not be performed if it would disrupt the high spawning beach used by grunion. Work shall be deferred until after the next spring tide series when eggs would be expected to hatch and larval fish would return to the water. However, construction can continue where work would not overlap with grunion spawning locations.

MM BIO-3: Mitigation for Increase in Surface Coverage

The applicant shall be required to obtain all required permits from appropriate federal and state agencies for in-water work such as a Clean Water Act Section 404 permit, Section 401 Water Quality Certification and/or Rivers and Harbors Act Section 10 permit. Prior to issuance of construction permits for the in-water elements of the proposed project, the applicant shall demonstrate that permits have been obtained and significant impacts related to any net increase in surface coverage of harbor waters that would occur as a result of the proposed project would be mitigated to less than significant through avoidance, impact minimization, and/or compensatory mitigation. Subject to agency coordination and permit requirements, compensatory mitigation may consist of (a) the establishment of an equivalent amount of new open water surface area within King Harbor through the opening of Seaside Lagoon to harbor waters; (b) other marine resource restoration, establishment, enhancement, and/or preservation activity within King Harbor or elsewhere in Santa Monica Bay; (c) obtaining credits from a mitigation bank within the Santa Monica Bay; and/or (d) making a payment to an in-lieu fee program that will conduct wetland, marine, or other aquatic resource restoration, creation, enhancement, or preservation activities within the Santa Monica Bay. Any required compensatory mitigation or other mitigation shall be implemented as set forth in the permits.

MM BIO-4: Fill in Waters of the U.S.

The applicant shall comply with U.S. Army Corps of Engineers (USACE) Clean Water Act and Rivers and Harbors Act permitting requirements. Prior to issuance of construction permits for the in-water elements of the proposed project, the applicant shall demonstrate that any required permits such as Clean Water Act Section 404 permit, Section 401 Water Quality Certification, and/or Rivers and Harbors Act Section 10 permit have been obtained. If it is determined that fill of waters of the United States would result from implementation of the proposed project, authorization for such fill shall be secured through the Section 404 and/or Section 10 permitting process. The net amount of Waters of the United States that would be removed during project implementation shall quantified and replaced or rehabilitated in accordance with the USACE mitigation guidelines. If required in compliance with permit requirements, mitigation shall be implemented that includes one of the following: avoidance, impact minimization, and/or compensatory mitigation. Subject to agency coordination and permit requirements, compensatory mitigation may consist of (a) the enhancement of marine habitat associated with the opening of Seaside Lagoon to the waters of King Harbor or other marine resource restoration, establishment, enhancement, and/or preservation activity within King Harbor or elsewhere Santa Monica Bay; (b) obtaining credits from a mitigation bank; and/or (c) making a payment to an in-lieu fee program that will conduct wetland, marine, or other aquatic resource restoration, creation, enhancement, or preservation activities. Any required compensatory mitigation or other mitigation shall be implemented as set forth in the permits.

3.3.5 Significant Unavoidable Impacts

Potential significant impacts on sensitive species during construction would be mitigated by MM BIO-1 through MM BIO-3. Impacts to waters of the US would be less than significant after implementation of MM BIO-4.

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