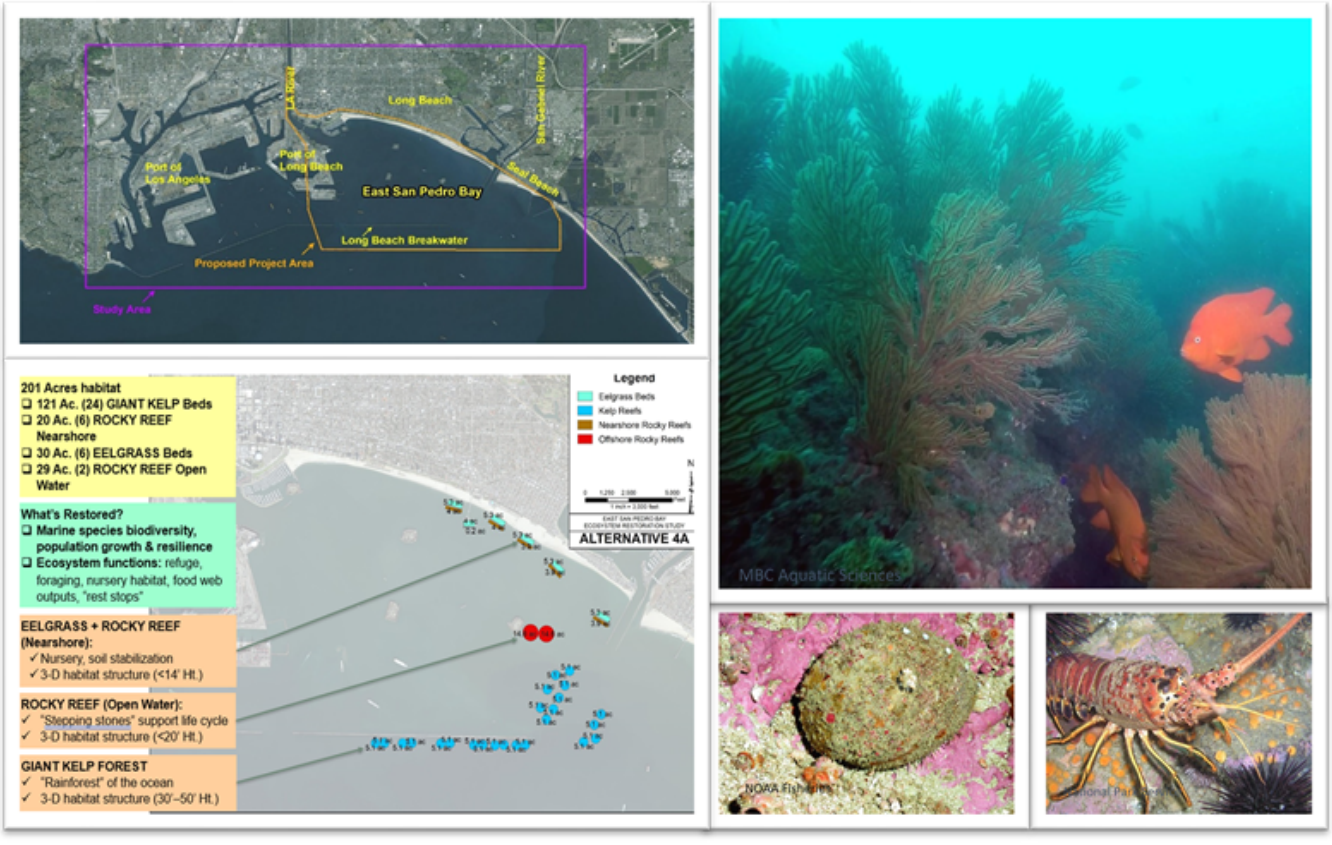
# FINAL INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT / ENVIRONMENTAL IMPACT REPORT (EIS/EIR)

## APPENDIX O: MITIGATION MONITORING AND REPORTING PROGRAM (CEQA)

EAST SAN PEDRO BAY
ECOSYSTEM RESTORATION STUDY
Long Beach, California

January 2022




US Army Corps of Engineers ®

## Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA) requires that when a public agency completes an environmental document which includes measures to mitigate or avoid significant environmental effects, the public agency must adopt a reporting or monitoring program. This requirement ensures that environmental impacts found to be significant will be mitigated. The reporting or monitoring program must be designed to ensure compliance during project implementation (Public Resources Code Section 21081.6).

In compliance with Public Resources Code Section 21081.6, Table 1, Mitigation Monitoring and Reporting Checklist, has been prepared for the East San Pedro Bay Ecosystem Restoration Feasibility Study (project). This Mitigation Monitoring and Reporting Checklist is intended to provide verification that all applicable mitigation measures relative to significant environmental impacts are monitored and reported. Monitoring will include: 1) verification that each mitigation measure has been implemented; 2) recordation of the actions taken to implement each mitigation; and 3) retention of records in the City of Long Beach East San Pedro Bay Ecosystem Restoration Feasibility Study Project file.

This Mitigation Monitoring and Reporting Program (MMRP) delineates responsibilities for monitoring the project, but also allows the City of Long Beach (City) flexibility and discretion in determining how best to monitor implementation. Minor administrative refinements have been made to the environmental commitments/mitigation measures provided in the East San Pedro Bay Ecosystem Restoration Feasibility Study to ensure enforceability and effectiveness under CEQA. Monitoring procedures will vary according to the type of mitigation measure. Adequate monitoring consists of demonstrating that monitoring procedures took place and that mitigation measures were implemented. This includes the review of all monitoring reports, enforcement actions, and document disposition, unless otherwise noted in the Mitigation Monitoring and Reporting Checklist (Table 1). If an adopted mitigation measure is not being properly implemented, the designated monitoring personnel shall require corrective actions to ensure adequate implementation.

Minor changes to the MMRP in the future, if required, would be made in accordance with CEQA and would be permitted after further review and approval by the City. No change will be permitted unless the MMRP continues to satisfy the requirements of Public Resources Code Section 21081.6.

| Mitigation Number | Environmental Commitment/Mitigation Measure | Implementation Responsibility | Implementation Timing | Monitoring/ Reporting Action | Monitoring/Reporting Responsibility | Monitoring Timing | VERIFICATION OF COMPLIANCE | | |
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| **AIR QUALITY AND GREENHOUSE GASES** | | | | | | | | | |
| AQ-1 | Diesel engine idle time shall be restricted to no more than ten minutes duration. | Construction Contractor | During construction activities | Monitor contractor use of diesel construction equipment | U.S. Army Corps of Engineers (USACE) | During construction activities | | | |
| AQ-2 | Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units shall be used whenever possible. | Construction Contractor | During construction activities | Monitor contractor use of diesel equipment | USACE | During construction activities | | | |
| AQ-3 | All on-road construction vehicles shall meet all applicable California on-road emission standards and shall be licensed in the State of California. | Construction Contractor | Prior to and during construction activities | Verify construction equipment manufacturer notes | USACE | Prior to and during construction activities | | | |
| AQ-4 | Activities and operations on unpaved road areas shall be minimized to the extent feasible during high wind events to minimize dust. | Construction Contractor | During construction activities in high winds | Monitor construction activities on unpaved road areas | USACE | During construction activities in high winds | | | |
| AQ-5 | Vehicle speeds shall be limited to 15 miles per hour on unpaved surfaces. | Construction Contractor | During construction activities | Monitor construction vehicle speeds | USACE | During construction activities | | | |
| AQ-6 | Dredging equipment utilized during construction and maintenance shall be licensed in California and meet the model year 2010 (Tier 4 Final) or newer emissions standards for sand dredging operations. | Construction Contractor | Prior to and during construction activities | Verify construction equipment manufacturer notes | USACE | Prior to and during construction activities | | | |
| AQ-7 | Diesel catalytic converters, diesel oxidation catalysts, and diesel particulate filters as certified and/or verified by the California Environmental Protection Agency (EPA) or California Air Resources Control Board (CARB) shall be installed on equipment operating onsite. | Construction Contractor | Prior to and during construction activities | Verify installation on construction equipment | USACE | Prior to and during construction activities | | | |
| AQ-8 | Roadways next to the proposed staging area shall be cleaned and daily project-related accumulated silt and debris be frequently removed. | Construction Contractor | During construction activities | Inspect construction staging areas and roadways | USACE | During construction activities | | | |
| AQ-9 | All construction equipment shall be maintained in accordance with manufacturers' manuals. | Construction Contractor | During construction activities | Verify construction equipment manufacturer notes | USACE | During construction activities | | | |
| AQ-10 | Construction equipment shall be shut down if not in use for more than 30 minutes. | Construction Contractor | During construction activities | Monitor contractor use of construction equipment | USACE | During construction activities | | | |
| AQ-11 | Electric equipment shall substitute diesel- or gasoline-powered equipment whenever possible. | Construction Contractor | During construction activities | Monitor contractor use of construction equipment | USACE | During construction activities | | | |
| AQ-12 | If equipment is operating on soils that cling to wheels, a "grizzly" or other such device using rails, pipes, or grates shall be utilized to dislodge mud, dirt, and debris from the tires and undercarriage of vehicles on the road exiting the staging area, immediately before the pavement in order to remove most of the soil from vehicle tires. | Construction Contractor | During construction activities | Verify use of "grizzly" or other such devices | USACE | During construction activities | | | |
| AQ-13 | Contractors will be required to use only heavy-duty trucks or engines from model year 2010 or newer that meet CARB's 2010 engine emission standards of 0.01 g/bhp-hr for particulate matter (PM) and 0.20 g/bhp-hr of NOx emissions. | Construction Contractor | During construction activities | Verify that only heavy-duty trucks or engines with required emission standards and year are used by | USACE | During construction activities | | | |

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| | | | | contractors. | | | | | |
| AQ-14 | Contractors will be required to maintain records of all heavy-duty trucks associated with the project's construction. These records will be kept current and will be made available to the USACE at any time requested within 7 calendar days of request. Additionally, contractors will be required to provide monthly reports of all heavy-duty trucks associated with the project's construction to the USACE along with any requested records of heavy-duty trucks associated with the project's construction within 7 calendar days of request and these records will be reviewed to the maximum extent feasible and practicable. | Construction Contractor | During construction activities | Verify that records of all heavy-duty trucks are kept and are current and available for review upon request | USACE | During construction activities | | | |
| **AESTHETICS AND VISUAL RESOURCES** | | | | | | | | | |
| AV-1 | Prior to initiating construction and staging activities, the USACE shall provide property owners and other persons in potentially affected areas with notice of the construction activities, including information on timing and duration. This notice would help inform viewers of the proposed ecological restoration and point out that proposed eelgrass, kelp, and associated rocky reef restoration would be underwater features not visible from the shoreline. | Construction Contractor | Prior to construction and staging activities | Verify notice is provided | USACE | Prior to construction and staging activities | | | |
| **CULTURAL AND HISTORIC RESOURCES** | | | | | | | | | |
| CR-1 | Project construction activities shall not occur within the avoidance areas included in Appendix K without reconsulting with the State Historic Preservation Officer (SHPO) and Indian Tribes in accordance with Section 106 of the National Historic Preservation Act (NHPA). | USACE | During construction activities | Verify no construction activities occur within avoidance areas without reconsulting with SHPO and Indian Tribes | USACE | During construction activities | | | |
| CR-2 | Prior to the issuance of a notice to proceed for construction, the USACE shall provide a map of the final project enhancement feature locations to the California SHPO to demonstrate that all potential historic features have been avoided. | USACE | Prior to construction activities | Verify map is provided to SHPO | USACE | Prior to construction activities | | | |
| CR-3 | In the event human remains are discovered, all ground-disturbing activities shall be halted immediately within the area of the discovery, and a USACE archaeologist and the Los Angeles County Coroner shall be notified. The coroner shall determine whether the remains are of forensic interest. If human remains, funerary objects, sacred objects, or items of cultural patrimony are located on Federal or Tribal lands, the treatment and disposition of such remains shall be carried out in compliance with the Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 U.S.C. 3001 et seq.) and EP 1130-2-540, Chapter 6. If human remains are located on State or private lands, the USACE shall follow the steps outlined in 36 CFR 800.13, post review discoveries and shall notify the City of Long Beach who shall ensure that the process outlined in California Public Resources Code, Section 5097.98 are carried out. | Construction Contractor/USACE | In the event human remains are discovered | Verify ground-disturbing activities are halted and appropriate parties are notified | USACE | In the event human remains are discovered | | | |
| CR-4 | If previously unknown cultural resources are discovered during the project, all ground-disturbing activities shall immediately cease within fifty meters of the discovery until the USACE has met the requirement of 36 CFR 800.13 regarding post-review discoveries. Work shall not | Construction Contractor/USACE | If previously unknown cultural resources are discovered | Verify ground-disturbing activities are halted within fifty meters of the | USACE | If previously unknown cultural resources are discovered | | | |

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| | resume in the area surrounding the potential historic property until USACE re-authorizes project construction. | | | discovery | | | | | |
| **MARINE GEOLOGY AND GEOLOGIC HAZARDS** | | | | | | | | | |
| GEO-1 | The USACE shall coordinate with the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Coast Guard to update marine navigation maps after construction is completed. | Construction Contractor/USACE | After construction is complete | Verify maps are updated with NOAA and Coast Guard | USACE | After construction is complete | | | |
| GEO-2 | The USACE (and the non-Federal Sponsor, the City of Long Beach) shall beneficially reuse dredge material from other navigation projects to the maximum extent practicable. The possibility of utilizing dredged material from other navigation projects (*e.g.*, the Port of Long Beach Deep Draft Navigation Project) shall be evaluated during the pre-construction engineering and design (PED) phase and a decision made based on sediment quality and the timing of construction for any such projects. No specific projects have been identified that match construction timing and include results from sediment analyses that show compatibility of dredged sediments to East San Pedro Bay requirements. If beneficial use sites become available, the USACE would consider a supplemental analysis. | USACE/City of Long Beach | During PED phase | Monitor whether dredge material from other navigation projects are compatible and available for the proposed project | USACE/City of Long Beach | During PED phase | | | |
| GEO-3 | The USACE shall conduct detailed bathymetric surveys during the PED phase. Information from these surveys shall guide identification of areas to avoid such as areas with natural cobbles and boulders. | USACE or Construction Contractor | During PED phase | Verify surveys are completed | USACE | During PED phase | | | |
| **BIOLOGICAL RESOURCES: INVASIVE SPECIES** | | | | | | | | | |
| INV-1 | Pursuant to the *Caulerpa Control Protocol* established by National Marine Fisheries (NMFS) and California Department of Fish and Wildlife (CDFW), prior to construction activities that would be expected to disturb *Caulerpa* should it exist within the proposed Project Area, a surveillance level survey of the Area of Potential Effect (APE) shall be performed. In *Caulerp*a-free habitats, this requires 20 percent of the APE to be surveyed for the presence of *Caulerpa*. In the event *Caulerpa* is found, disturbing activities shall be delayed until the infestation is isolated, treated, or the risk of spread is eliminated, and sightings shall be reported immediately to CDFW and NOAA Fisheries. Construction shall not begin until cleared to do so by the NMFS. | Environmental Contractor | Prior to construction activities | Verify surveys are conducted and reported to appropriate parties | USACE | Prior to construction activities | | | |
| **BIOLOGICAL RESOURCES: EVALUATION OF MARINE HABITATS** | | | | | | | | | |
| MH-1 | A pre-construction survey shall be performed to document eelgrass extent in the areas of nearshore reef placement. If eelgrass is present or was previously present at a site according to Merkel *et al*. (2017), alternative locations of rocky reef and sand placement a minimum distance of 50 feet beyond the margin of existing and previously existing eelgrass habitat shall be established during the detailed design phase as well as during construction to avoid impacts to all existing or previously existing eelgrass habitat. Per the NMFS's *California Eelgrass Mitigation Plan* (NMFS, 2014), eelgrass is defined "…as areas of vegetated eelgrass cover (any eelgrass within 1 $m^2$ quadrat and within 1 m of another shoot) bounded by a 5 m wide perimeter of unvegetated area. Unvegetated areas may have eelgrass shoots a distance greater than 1 m from another shoot and may be internal as well as external to areas of vegetated cover." | Environmental Contractor | Prior to construction activities | Verify survey is conducted | USACE | Prior to construction activities | | | |

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| MH-2 | During the creation of eelgrass habitats, no more than 10 percent of the plants from eelgrass donor beds shall be harvested to minimize potential impacts to existing eelgrass beds. | Environmental Contractor | During creation of eelgrass habitats | Verify no more than 10 percent of plants from eelgrass donor beds are harvested | USACE | During creation of eelgrass habitats | | | |
| **NOISE AND VIBRATION** | | | | | | | | | |
| NO-1 | Construction contractors shall use only construction equipment that has noise-reduction features, such as mufflers. | Construction Contractor | During construction activities | Verify construction equipment have noise-reduction features | USACE | During construction activities | | | |
| NO-2 | Construction contractors shall comply with the City of Long Beach Municipal Code and the City of Seal Beach Municipal Code noise ordinances. | Construction Contractor | During construction activities | Monitor construction noise | USACE | During construction activities | | | |
| **PUBLIC HEALTH AND SAFETY, INCLUDING HAZARDOUS MATERIALS** | | | | | | | | | |
| ENG-1 | During placement of all restoration measures, project limits will be established by GPS coordinates and marked by buoys in-place before the start of construction. | Construction Contractor | Prior to construction activities | Verify GPS established project limits are marked by buoys | USACE | Prior to and during construction activities | | | |
| PH-1 | The USACE and City of Long Beach shall coordinate to ensure that recreational and commercial users within the project area are aware of construction equipment at the start and termination of activities to minimize any potential hazards related to construction equipment and activities. | USACE/City of Long Beach | Prior to and during construction activities | Ensure individuals in project area are aware of construction activities | USACE/City of Long Beach | Prior to and during construction activities | | | |
| PH-2 | Publication of advance notice in the U.S. Coast Guard Local Notice to Mariners as another form of public information resulting in enhanced recreation as well as safety notification. | Construction Contractor | Prior to construction activities | Verify notice is provided | USACE | Prior to construction activities | | | |
| PH-3 | All Federal, State, and local regulations regarding the use, transport, and disposal of hazardous materials would be adhered to during construction activities. Human health and safety impacts would be avoided through adherence to these procedures, conditions, and regulations. | Construction Contractor | During construction activities | Verify compliance with existing regulations | USACE | During construction activities | | | |
| **RECREATION** | | | | | | | | | |
| RC-1 | During the Pre-Construction Engineering and Design (PED) phase, USACE shall meet with boating stakeholders to identify practicable design refinements that reduce and minimize impacts to recreation boating, as feasible, while still meeting project objectives and avoiding violating project constraints. | USACE | During PED phase | Verify boating stakeholder meetings are held | USACE | During PED phase | | | |
| **BIOLOGICAL RESOURCES: SPECIAL-STATUS SPECIES** | | | | | | | | | |
| SP-1 | Potential adverse impacts to existing marine habitats shall be minimized by selection of dredging equipment and methods, turbidity control measures for dredging and disposal operations, and monitoring protocols outlined in the *Los Angeles Contaminated Sediments Task Force Long-Term Management Strategy* (2005) and the *Los Angeles Regional Dredged Material Management Plan* (2009). | Construction Contractor | Prior to and during construction activities | Verify adherence to control measures and monitoring protocols | USACE | Prior to and during construction activities | | | |
| SP-2 | An Environmental Protection Plan shall be implemented, including a Green Sea Turtle Monitoring and Avoidance Plan, Marine Mammal Monitoring and Avoidance Plan, and employee training. Monitoring plans shall be prepared by a qualified marine biologist. The plans shall include the following: | Environmental Contractor/Qualified Marine Biologist | Prior to construction activities | Verify Environmental Protection Plan is prepared and implemented | USACE | Prior to construction activities | | | |

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| | • Procedures for monitoring marine mammals and sea turtles, and specifications for Marine Wildlife Observers;<br>• Methods for communicating with contractors to stop work if there is a risk that any marine mammals or sea turtles active in the area may move closer to construction sites;<br>• Procedures for Marine Wildlife Observer monitoring of barge transport, if necessary;<br>• Contractor personnel training;<br>• Reporting procedures including in the event of potential take; and<br>• Methods for communicating with ship captains if there is a risk of collision with a marine mammal or sea turtle. | | | | | | | | |
| SP-3 | The following measures shall be implemented to avoid or minimize impacts to the Federally-listed threatened East Pacific distinct population segment (DPS) of Green Sea Turtle (*Chelonia mydas*; GST) and marine mammals protected under the Marine Mammal Protection Act**.**<br>• The USACE shall utilize a clamshell dredge for all dredging associated with the project because this type of equipment has been determined to be well suited based on the quantity and the location of the work.<br>• Dredging is expected to occur on a 24-hour per day basis. The USACE shall attempt to sequence dredging activities during winter months (November 1 – March 31) when GST are generally expected to be located within the warm waters of the San Gabriel River adjacent to and downstream of power plants (Crear *et al*., 2016). However, due to the exposure of the work area to open ocean wave conditions, adverse wave and inclement weather may preclude safe working conditions during winter months, necessitating that dredging activities extend into the non-winter months.<br>• When dredging and nearshore placement operations occur, a qualified biologist with experience monitoring GSTs and marine mammals shall be on site to monitor for the presence of GSTs and marine mammals. The monitor shall have the authority to cease or alter operations to avoid impacts to GSTs and marine mammals.<br>• Adequate lighting shall be provided during nighttime operations to allow the monitor to observe the surrounding area effectively.<br>• During dredging and placement operations, the USACE shall designate 30-meter monitoring zones around both the dredge site and nearshore placement sites.<br>• All vessels associated with the project shall not exceed eight (8) knots inside the breakwater.<br>• Daily visual monitoring within the designated 30-meter monitoring zones shall commence prior to the start of in-water construction activities and after each construction work break of more than 30 minutes. | USACE/Environmental Contractor/Qualified Marine Biologist/ Construction Contractor | Prior to and during construction activities | Verify avoidance and minimization measures are implemented | USACE | Prior to and during construction activities | | | |

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| | • If a GST is observed within the vicinity of the project site during project operations, all appropriate precautions shall be implemented to avoid or minimize unintended impacts. These precautions include, but are not limited to:<br>o Cessation of operation of any moving equipment that is observed within 30 meters of a GST;<br>o Immediate cessation of operation of any mechanical dredging equipment if a GST is observed within 30 meters of the equipment; and<br>o Operations shall not resume until the GST has departed the monitoring zone by its own accord or has not been observed for a 15-minute period of time.<br>• Biological monitors shall maintain a written log of all GST and marine mammal observations during project operations. This observation log shall be provided to the USACE and NOAA Fisheries as an attachment to the post-construction report for the project. Each observation log will contain the following information:<br>1. Observer name and title;<br>2. Type of construction activity (maintenance dredging, etc.);<br>3. Date and time animal first observed (for each observation);<br>4. Date and time observation ended (for each observation). An observation will terminate if (1) an animal is observed exiting the monitoring zone or (2) after a 15-minute period of no observation (assumption is that animal has exited, but was not observed to do so);<br>5. Location of monitor (latitude/longitude), direction of animal in relation to the monitor, and estimated distance (in meters) of animal to the monitor;<br>6. Nature and duration of equipment shutdown.<br>• Any observations involving the potential "take" of GSTs or marine mammals shall be reported to the USACE within 10 minutes of the incident and to the NMFS stranding coordinator immediately.<br>• The USACE and its contractors shall inform all personnel associated with the construction work of the potential presence of GSTs and marine mammals and the requirement to monitor a 30-meter designated monitoring zone around all in-water equipment and vessels to avoid interactions with, or "take" of GSTs and marine mammals. Prior to the commencement of on-site construction work, all contractor personnel (including sub-contractor personnel) shall be trained by a USACE biologist (or qualified biologist approved by the USACE) on GST and marine mammal identification and observation protocols to be followed in the event that GSTs or marine mammals are sighted. All construction personnel are responsible for observing and reporting the presence of | | | | | | | | |

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| | GSTs and marine mammals during all water-related construction activities.<br>• The contractor shall implement an Environmental Protection Plan that includes a GST and Marine Mammal Monitoring and Avoidance Plan and an employee training program on GST and marine mammal observation protocols, avoidance, and minimization measures. | | | | | | | | |
| **GROUND AND VESSEL TRAFFIC AND TRANSPORTATION** | | | | | | | | | |
| TT-1 | The contractor shall mark all associated marine equipment in accordance with U.S. Coast Guard regulations. The contractor shall contact the U.S. Coast Guard two weeks prior to the commencement of construction. The following information shall be provided: the size and type of equipment to be used, names and radio call signs for all working vessels, telephone number for on-site contact with the project engineer, the schedule for completing the project, and any hazards to navigation. The contractor shall move equipment upon request by the U.S. Coast Guard and Long Beach Harbor Patrol law enforcement and rescue vessels. | Construction Contractor | Two weeks prior to construction activities | Verify all marine equipment information is provided to U.S. Coast Guard | USACE | Two weeks prior to construction activities | | | |
| TT-2 | If the inland 3M Quarry in Corona is used, truck traffic shall be scheduled during off-peak travel hours to the extent practicable in order to reduce potential traffic impacts from transporting quarry stone over public roadways. | Construction Contractor | During construction activities if the inland 3M Quarry is used | Verify truck traffic occurs during off-peak travel hours | USACE/City of Long Beach | During construction activities if the inland 3M Quarry is used | | | |
| TT-3 | If the inland 3M Quarry in Corona is used, individual truck trips from 3M Quarry shall be staggered, and trucks shall be assigned to multiple routes instead of one in order to minimize truck travel on public roadways. | Construction Contractor | During construction activities if the inland 3M Quarry is used | Verify truck traffic is staggered and assigned to multiple routes | USACE | During construction activities if the inland 3M Quarry is used | | | |
| TT-4 | If the inland 3M Quarry in Corona is used, trucks hauling stone shall be covered. | Construction Contractor | During construction activities if the inland 3M Quarry is used | Verify trucks hauling stone are covered | USACE | During construction activities if the inland 3M Quarry is used | | | |
| TT-5 | A California Department of Transportation (Caltrans) transportation permit shall be obtained should oversized-transport vehicles be required to travel on State highways. | Construction Contractor | Prior to construction activities if oversized-transport vehicles are required to travel on State highways | Verify permit is obtained | USACE | Prior to construction activities if oversized-transport vehicles are required to travel on State highways | | | |
| TT-6 | If the inland 3M Quarry in Corona is used, a construction traffic management plan detailing expected delays on State facilities shall be developed for Caltrans review. | Construction Contractor | Prior to construction activities | Verify construction traffic management plan is provided for Caltrans review | USACE | Prior to construction activities | | | |
| TT-7 | Every attempt will be made to reduce Vehicle Miles of Travel (VMT) from construction trips. | Construction Contractor | During construction activities | Monitor construction trips | USACE | During construction activities | | | |
| **UTILITES AND PUBLIC SERVICES** | | | | | | | | | |
| UT-1 | The USACE and City of Long Beach public safety agencies shall coordinate prior to and during the construction period. | USACE/City of Long Beach public safety agencies | Prior to and during construction activities | Ensure coordination between agencies | USACE/City of Long Beach | Prior to and during construction activities | | | |
| UT-2 | The USACE shall utilize mapping of underwater utilities to plan the location of rocky reefs in order to avoid utilities and pipelines. | USACE | During PED phase | Ensure underwater utility maps are | USACE/City of Long Beach | During PED phase | | | |

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| **WATER QUALITY** | | | | | | | | | |
| GEO-4 | Prior to construction, the USACE will perform sediment sampling and analysis to confirm the suitability of dredged material from the surfside-Sunset borrow area for the establishment of eelgrass beds leeward of the proposed nearshore rocky reefs. | Construction Contractor | During PED phase | Ensure that dredged material is suitable for nearshore placement | USACE | During PED phase | | | |
| WQ-1 | Water quality monitoring shall be conducted during dredging or any activities that would result in turbidity plumes. Monitoring parameters shall include percent light transmissivity, dissolved oxygen, water temperature, salinity, and pH. | Construction Contractor | During dredging or any activities that would result in turbidity plumes | Verify water quality monitoring is conducted | USACE | During dredging or any activities that would result in turbidity plumes | | | |
| WQ-2 | For dredging activities, standard water quality monitoring shall be conducted during construction. This consists of weekly monitoring of water quality parameters (salinity, pH, dissolved oxygen, temperature, and percent light transmissivity) with an instrument package at four stations. The four stations shall be sited relative to the dredge and shall be 100 feet upcurrent of the dredge, 100 feet downcurrent of the dredge, 300 feet downcurrent of the dredge, andcontrol station located outside of any dredge plume. Twice monthly water samples shall be taken from the station 300 feet downcurrent of the dredge for analysis of total suspended solids and total recoverable petroleum hydrocarbon. Similar monitoring shall be conducted at the sandy island site during sediment placement activities at that location. | Construction Contractor | During dredging activities and sediment placement activities (weekly and bimonthly monitoring) | Verify water quality monitoring is conducted | USACE | During dredging activities and sediment placement activities (weekly and bimonthly monitoring) | | | |
| WQ-3 | Guidance from the USACE Engineering Manual EM-1110-2-2302 regarding minimal stone quality requirements shall be followed. Quarry materials shall also meet the following:<br>• The materials shall be clean and free of any contaminants, especially those that could dissolve in seawater (e.g., asphalt, paint, oil, or oil stains); and<br>• All stone used for the project must meet the following:<br>○ Purity: The materials shall be free of contamination and foreign materials;<br>○ Specific gravity: The materials specific gravity shall be greater than 2.2.<br>○ Durability: Rocks used must remain unchanged after 30 years of submersion in seawater. | Construction Contractor | During construction activities | Verify compliance with USACE Engineering Manual | USACE | During construction activities | | | |
| WQ-4 | During construction and operation activities, the USACE shall comply with all applicable local, State and Federal regulations with regarding to the transportation, handling, and storage of hazardous substances. | Construction Contractor/City of Long Beach | During construction and operation activities | Verify compliance with existing regulations | USACE | During construction and operation activities | | | |
| WQ-5 | At each work area involving the operation of heavy equipment and handling and storage of hazardous substances, the USACE shall prepare a Hazardous Material Spill Prevention Plan. The Hazardous Material Spill Prevention Plan shall contain contingency plans in the event of an accidental release into the environment. | Construction Contractor | Prior to construction activities involving the operation of heavy equipment and handling and storage of hazardous substances | Verify Hazardous Material Spill Prevention Plan is prepared | USACE | Prior to construction activities involving the operation of heavy equipment and handling and storage of hazardous substances | | | |
| **MONITORING AND ADAPTIVE MANAGEMENT** | | | | | | | | | |

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| | An Adaptive Management Team (AMT) shall be established, which shall include the USACE, City of Long Beach, and interested resources agencies. The AMT shall focus on the ecological function of habitats through related management actions to maintain and provide functional marine habitat for general species and special-status species (threatened and endangered species) within the study area, as outlined in the Monitoring and Adaptive Management Plan (MAMP). | USACE | Prior to construction completion | Verify AMT is established | USACE | Prior to construction completion | | | |