APPENDIX A

Section 404(b)(1) Water Quality Evaluation
Port San Luis Harbor O&M Breakwater Repair
Port San Luis County, California

2021

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THE EVALUATION OF THE EFFECTS OF THE DISCHARGE OF DREDGED OR FILL MATERIAL INTO THE WATERS OF THE UNITED STATES IN SUPPORT OF THE ENVIRONMENTAL ASSESSMENT FOR THE OPERATION & MAINTENANCE BREAKWATER REPAIR PROJECT PORT SAN LUIS HARBOR LOCATED IN SAN LUIS OBISPO COUNTY, CALIFORNIA

INTRODUCTION. The following evaluation is provided in accordance with Section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (Public Law 95-217). Its intent is to succinctly state and evaluate information regarding the effects of discharge of dredged or fill material into the waters of the U.S. As such, it is not meant to stand alone and relies heavily upon information provided in the environmental document to which it is attached. Citation in brackets [] refer to expanded discussion found in the Environmental Assessment (EA), to which the reader should refer for details.

I. Project Description [1.0; 2.0-2.4]

a. Location: The proposed project area is the Federal Breakwater, Port San Luis Harbor, San Luis Obispo County, California.

b. General Description: The Los Angeles District of the U. S. Army Corps of Engineers, as part of its Operations and Maintenance (O&M) Program, is proposing to perform repairs to the Port San Luis breakwater. The Proposed Action also includes minor excavation of shoaled, clean sandy sediment (approximately 15,000 cubic yards) adjacent to the leeward side of the breakwater to create adequate depths for barges and other vessels to access the repair area. The excavated sediment would be used to create an engineered eelgrass mitigation site about 1,000 feet north of the leeward side of the breakwater, as the repair work and excavation would impact some eelgrass located adjacent to portions of the breakwater. The proposed excavation would occur to depths of approximately -12 ft MLLW with a 2-foot allowable overdepth. Excavation of sandy sea bottom sediment and construction of an eelgrass mitigation site would be typically performed using a crane-equipped barge (a barge with an attached crane). This equipment could be utilized for excavation of shoaled sediment adjacent to the breakwater, and for the breakwater repair work. During excavation of shoaled sediment, the crane will typically be outfitted with a clamshell bucket. During excavation the clamshell bucket will be lowered by the crane operator to the sea floor to excavate sediment. The crane will pivot around and place the excavated sediment onto a storage barge or into a specialized storage barge called a scow to be taken to the eelgrass mitigation site, and deposited there. No dredging, maintenance dredging, or trenching work would be performed elsewhere in the harbor as part of the proposed breakwater repair project.

The breakwater extends southeasterly from Point San Luis into the harbor. The footprint of the breakwater is approximately 2,400 feet in length. The project area is approximately 20 acres. It is estimated that approximately 29,000 tons of existing stone would need to

be reset and 60,000 tons of new stone would be placed to restore the most heavily damaged portion of the breakwater to its original design. Repair work elevations on the seaward side of the breakwater are anticipated to extend down to approximately +4 ft MLLW and to approximately 0 ft MLLW on the leeward side of the breakwater. The footprint of the breakwater would not be changed, but the crest elevation would be raised from +13 feet Mean Lower Low Water (MLLW) to +16 feet MLLW as a consequence of the armor stone size required for hydraulic stability and the breakwater prism.

The area of sediment proposed for minor, sandy sea bottom excavation is similar in kind to previous excavation performed adjacent to the Port San Luis Harbor federal breakwater. In 2005, approximately 10,000 cy of clean sandy sea bottom sediment was excavated and then side cast adjacent to the breakwater to allow for temporary construction access for barges and work boats to repair the breakwater. In 1992, approximately 10,000 cy of clean sandy sea bottom sediment adjacent to the breakwater was also excavated but was placed in a surf zone/nearshore within the harbor.

c. Basic and Overall Project Purpose: The basic project purpose is navigation. The overall project purpose is to repair the breakwater to authorized design to support safe commercial and recreational navigation operations in Port San Luis Harbor.

d. General Description of Dredged or Fill Material: [1992 Corps Final EA on repair of Federal breakwater; 2013 Port San Luis Harbor District's Sediment Sampling and Analysis Report]

(1) General Characteristics of Material (grain size, soil type):

Sediment testing completed in 2013 to support PSL Harbor District's maintenance dredging, showed on two composite (PSL-1; PSL-2) sediment samples collected from the Port San Luis Harbor dredge area and the two samples (DSP-1, Fisherman's Beach; DSP-2, West Beach) collected from the disposal sites (Fishermen's Beach; West Bluff Beach) indicated all of the samples characterized as coarse to medium grained sand. The percentage of fines in the four samples (material of a grain size small enough to pass through a #200 US Standard Sieve) ranged from 1.4 to 4.1 percent. Dredge area composite sample PSL-1 had 94.9 percent sand with 1.0 percent gravel and 4.1 percent silt and clay, and dredge area composite sample PSL-2 had 96.7 percent sand with 0.0 percent gravel and 3.3 percent silt and clay. In comparison, the disposal site sample DSP-1 Fisherman's Beach had 98.0 percent sand with 0.0 percent gravel and 2.0 percent silt and clay, and the disposal site sample DSP-2 West Bluff Beach had 92.6 percent sand with 6.0 percent gravel and 1.4 percent silt and clay.

The Eelgrass Mitigation And Monitoring Plan In Support Of The Port San Luis Breakwater Repairs, Port San Luis, San Luis Obispo County, California (July 2020), performed by Corps contractor Merkel and Associates [Appendix B of EA] included a discussion of sampling and test results of 12 grab surface grab samples taken during the April-May 2020 eelgrass surveys. Surface sediment grab samples were collected at 12 locations spread across multiple transects extending through a depth gradient

ranging from -7.4 feet MLLW to -26.7 feet MLLW (Figure 5). Seven of the 12 samples were collected from within eelgrass beds and the remaining five samples were derived from outside of eelgrass. Samples were analyzed for grain size distribution following American Standard Test Method (ASTM). Following analysis, the sediment grain size distribution curves were plotted and the median particle diameter (D50) was estimated (Figure 6). The results of the analysis indicate that fine sand dominates all portions of the study area with the range across samples being 69.4 percent sand in an unvegetated site at -23.2 feet MLLW to 96.7 percent at a site supporting eelgrass in -7.9 feet MLLW. The percent sand and D50 declined with increasing depth. Eelgrass was found in sediment with a D50 ranging between 0.10 and 0.17 mm, although all samples shallower than - 18.5 feet MLLW had D50 values within this same range, irrespective of support of eelgrass. The percent sand and D50 both increased with increasing energy exposure. The results of the sediment size analysis suggest that sediment characteristics are not likely to limit the restoration potential for eelgrass at this location. The observations also suggest that sediment grain size is a likely function of the energetics of the specific areas sampled. The 12 surface sample grain size data collected could not calculate a grain size weighted average however the data could be used to perform a ***discount*** weighted average grain size analysis that would help get at this question. To make use of the surface grab data to estimate the weighted sand percentage it is necessary to consider the energetics of the environment as part of the accumulation process and note that the sand content at depth will be lower than that at the surface of the dredge area. This is because the surface sediments in shallower water are exposed to greater swell and overtopping wave energy than would be the case if the site were deeper. Since the site was deeper and has filled with sand over time, it is expected that grain size and percent sand has risen with accumulation. To develop a volume based average sand content, averaged the surface percent sand for the three samples taken within the dredge footprint (PSL 08, 10, and 11 = 95.83%), and then averaged the westerly sample PSL-12 (-14.65 ft) and the easterly PSL-05 (-14.33 ft) deeper samples as surrogates of what the percent sand may look like at the bottom of the cut (87.71%). This is expected to be a low percent sand estimate for two reasons. First both samples were taken deeper than the design cut and second, PSL-05 is much more protected and within eelgrass that would retain fines than would be the case in the proposed dredge footprint. This results in an estimated (91.77%) for volume weighting [Appendix B of EA].

Five to twenty ton amour stone will be sourced from a quarry and placed on the PSL breakwater to repair the structure.

(2) Quantity of Material: Approximately 15,000 cy of sandy, clean sea bottom sediment would be excavated adjacent to the breakwater. This same 15,000 cy of sand would be used as fill material to create the eelgrass mitigation site. Approximately 60,000 tons of 5-20 ton armour stones will be used for the breakwater repair.

(3) Source Material: Sandy, clean sea bottom sediment adjacent to the leeward side of the breakwater. It will be the contractor's responsibility to locate sufficient quantity and quality of stone from California quarries. The USACE cannot direct the contractor in making this selection, but can only specify size, type, and quality of stone. The Santa

Catalina Island is considered to be the most likely source due to known quantities on hand to start work with and the use of barges to transport stone to the placement site. However, the use of other quarries cannot be ruled out.

e. Description of the Proposed Discharge Site:

(1) Clean, sandy sea bottom excavated sediment would be excavated from the lee of the PSL breakwater and placed to create an engineered eelgrass mitigation site about 1,000 feet north of the leeward side of the breakwater. The characteristic habitat of the excavation site is a combination of sandy bottom benthic habitat and eelgrass habitat. The characteristic habitat type placement site is open-coast sandy benthic habitat. The PSL breakwater structure repair areas receiving new stone are characterized by the side slopes of the structure that create intertidal and subtidal rocky habitat.

(2) Size (acres): Shoaled sediment will be excavated from an approximate 1.8 acre excavation template. The suitable excavated sediment would be placed in an approximate 1.05 acre engineered eelgrass mitigation site. The breakwater repair area is approximately 0.7 acres.

(3) Type of Site (confined, unconfined, open water): Unconfined, open water.

f. Description of Disposal Method: Placement of excavated sediment would typically be performed using a crane-equipped barge, to excavate shoaled clean sandy bottom sediment adjacent to the breakwater, which would be used to create an engineered eelgrass mitigation site, approximately 1,000 feet north of the leeward side of the breakwater. The crane would pivot around and place the excavated sediment onto a storage barge or a specialized storage barge called a scow and then transported and placed into the placement site to create the engineered eelgrass mitigation site.

During breakwater repair construction a crane equipped barge will be outfitted with lifting tongs to reset existing stone and retrieve stones from the storage barge, and then place those stones on damaged sections of the breakwater. A boat operator in a skiff, and spotter on the breakwater, would direct the operation of the crane in order to pick and place the stones.

II. Factual Determinations**.**

a. Physical Substrate Determinations:

(1) Substrate Elevation and Slope:

The sandy sea bottom area is relatively flat. The proposed excavation template area depths range from approximately -5 to -10 ft MLLW, sediment will be excavated to a depth of -12 ft MLLW with a 2-foot allowable overdepth. The sediment placement site is currently at approximately -22 ft MLLW, and will be brought to approximately -12 ft MLLW to create the engineered eelgrass mitigation site. The breakwater repair

area elevations range from 0 ft MLLW to the crest elevation +16 ft MLLW, with a slope of 1.5H:1V.

(2) Sediment Type.

Prior sediment sampling and characterization efforts indicate the sediment in the excavation area and eelgrass mitigation site consists primarily of medium to fine grain sand. Suitable sediments for nearshore placement. The excavation material is considered compatible with the eelgrass mitigation site.

(3) Dredged Material Movement.

Sandy, sea bottom excavated sediment adjacent to the breakwater would be used to create an engineered eelgrass mitigation site about 1000 feet north of the leeward side of the breakwater. While some movement is expected to occur as material is redistributed by waves and currents, most of the material is expected to remain within the mitigation site as it would be planted with eelgrass.

(4) Physical Effects on Benthos (burial, changes in sediment type, etc.).

Temporary, short-term adverse impacts would occur. Placement of new stone will result in the crushing of invertebrate and algal organisms within the repair area, although organisms will begin to recolonize the area once repair activities are complete. The slope of the breakwater structure will be remain consistent with the design criteria. Excavation of sediments would result in a temporary depth elevation change (less than 10 ft), over time the currents and littoral transport will naturally accumulate sediments to the area. Excavation will bury, crush, smother and/or displace organisms and directly impact eelgrass growing within the excavation template. Excavation of shoaled clean, sandy sea bottom sediment placed in an engineered eelgrass mitigation site would raise the sea floor depth approximately 10 feet, bury benthic organisms, although it would also provide habitat as the organisms re-establish within the deposition area post-construction. Minor turbidity levels may exist in the immediate vicinity of the excavation and placement operations that may result in minor, temporary reductions in dissolved oxygen. Turbidity, dissolved oxygen, light transmittance, pH, salinity, and temperature would be monitored during sediment excavation and placement activities minimizing impacts. Recolonization would be expected to occur once placement activities cease. Species abundance and productivity would be expected to fully recover within one to five years. No long-term adverse effects are expected.

(5) Other Effects. N/A

(6) Actions Taken to Minimize Impacts (Subpart H).

Needed: X YES _____NO

No measures can be taken to minimize direct impacts to benthic organisms from burial. Monitoring of water quality to control turbidity during excavation and disposal would occur. If turbidity exceeds water quality criteria, excavation and disposal would be evaluated and modifications made to get back into compliance.

If needed, Taken: X YES _____ NO

In accordance with the construction specifications, a water quality monitoring plan would be part of the construction contract to be approved by the Corps' Biologist and/or the Corps' Environmental Coordinator.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Water (refer to 40 CFR sections 230.11(b), 230.22 Water, and 230.25 Salinity Gradients; testing specified in Subpart G may be required). Consider effects on salinity, water chemistry, clarity, odor, taste, dissolved gas levels, nutrients, eutrophication, others.

Excavation and placement of clean, sandy sea bottom excavated sediment to create an engineered eelgrass mitigation site approximately 1,000 feet north of the leeward side of the breakwater is not expected to significantly affect water circulation, fluctuation, salinity, water chemistry, clarity, odor, taste, dissolved gas levels, nutrients, and/or eutrophication. Only clean, compatible sands from the project would be utilized for placement operations in the engineered eelgrass mitigation site. These sands are not a source of contaminants. Minor turbidity levels may exist in the immediate vicinity of the placement operations that may result in minor, temporary reductions in dissolved oxygen. Sands would not be a source of nutrients, thus eutrophication is not expected to result. Water used to entrain sands would be sea water as is water in the engineered eelgrass mitigation site; thus there would be no effect on salinity levels. Placement of amour stone may result in minimal localized increases in turbidity from soil or dust adhered to the stones surface resulting in minor temporary decreases in clarity. The turbidity would be minimal, localized, and dissipate quickly. No other impacts to water circulation, fluctuation, salinity, water chemistry, odor, taste, dissolved gas levels, nutrients, and/or eutrophication are expected.

(2) Current Patterns and Circulation (consider items in sections 230.11(b), and 230.23), Current Flow, and Water Circulation.

The placement of new armour stone, excavation of sediment and placement of excavated sediment would not significantly affect current patterns and circulation, current flow, and/or water circulation. Excavated sediment would be placed at sufficient depth within the engineered eelgrass mitigation site that it would not significantly affect circulation or current patterns. The currents are not expected to change in magnitude or direction.

(3) Normal Water Level Fluctuations (tides, river stage, etc.) (consider items in sections 230.11(b) and 230.24)

The placement of new armour stone, excavation of sediment, and placement of clean, sandy sea bottom excavated sediment in the engineered eelgrass mitigation site is not expected to have a significant impact on normal water level fluctuations. There would no change to tidal elevations, which is determined by access to the open ocean, which would not be changed.

(4) Salinity Gradients (consider items in sections 230.11(b) and 230.25)

The placement of new armour stone, excavation of sediment, and placement of clean, sandy sea bottom excavated sediment in the engineered eelgrass mitigation site is not expected to have any impact on normal water salinity nor is it expected to create salinity gradients. Sands and water used to entrain sands would be sea water as is water in the engineered eelgrass mitigation site; thus there would be no creation of salinity gradients.

(5) Actions That Will Be Taken to Minimize Impacts (refer to Subpart H)

Needed: X YES _ NO
If needed, Taken: X YES __ NO

Sediment excavation and placement operations would be monitored for effects on water quality, including turbidity, dissolved oxygen, light transmittance, pH, salinity, and temperature. If turbidity and/or dissolved oxygen exceeds water quality criteria, a Best Management Practice (BMP) would be implemented during placement activities to evaluate such exceedances and make modifications to placement activities to reduce and minimize impacts and to get back into compliance, in accordance with the construction contract specifications.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site (consider items in sections 230.11(c) and 230.21)

Excavation and placement of excavated clean, sandy soft bottom sediment to create an engineered eelgrass mitigation site would cause a temporary increase in suspended sediments and turbidity. The impact is expected to be highly localized within the immediate vicinity of the excavation and placement sites. The areas are expected to return to background levels within one to several hours after excavation and placement activities cease. Water quality monitoring during placement activities will allow USACE to modify operations (such as by slowing rate of discharge) until any water quality problems abate. Placement of amour stone may result in minimal localized increases in turbidity from soil or dust adhered to the stones surface

resulting in minor temporary decreases in clarity. The turbidity would be minimal, localized, and dissipate quickly.

(2) Effects (degree and duration) on Chemical and Physical Properties of the Water Column (consider environmental values in section 230.21, as appropriate)

Only clean, sandy sediment would be excavated and placed in the engineered eelgrass mitigation site. Minor turbidity levels may exist in the immediate vicinity of the placement operations that may result in minor, temporary reductions in dissolved oxygen. Only clean, quarry stones for breakwater repairs would be used to construct the project. These rocks are not a source of contaminants. Minor increased turbidity levels may exist in the immediate vicinity of the stone placement operations. The turbidity would be minimal, localized, and dissipate quickly thus it is unlikely reductions in dissolved oxygen would occur.

(3) Effects on Biota (consider environmental values in sections 230.21, as appropriate).

Biota disturbed during stone placement, sediment excavation or buried during sediment placement operations are expected to recolonize and re-establish productivity rates within one to five years. Impacts will be adverse, but temporary and not significant.

(4) Actions taken to Minimize Impacts (Subpart H)

Needed: X YES _ NO
If needed, Taken: X YES _ NO

Monitoring of water quality to control turbidity will occur. If turbidity exceeds water quality criteria, excavation and disposal would be evaluated and modifications made to get back into compliance.

In accordance with the construction contract specifications, a water quality monitoring plan would be part of the construction contract to be approved by the Corps' Biologist and/or the Corps' Environmental Coordinator.

d. Contaminant Determinations (consider requirements in section 230.11(d)): The following information has been considered in evaluating the biological availability of possible contaminants in excavated or placement sediments. (Check only those appropriate.)

(1) Physical characteristics _X_

(2) Hydrography in relation to known or anticipated sources of contaminants _X_

(3) Results from previous testing of the material or similar material in the vicinity of the proposed project _X_

(4) Known, significant sources of contaminants (e.g. pesticides) from land runoff or

percolation _____

(5) Spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances _____

(6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources _____

(7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man- induced discharge activities _____

(8) Other sources (specify) X

The 2013 PSL Harbor sediment chemistry concentrations appear to be low to non-detect for most constituents performed on the two dredge area composites (PSL-1; PSL-2). Of the metals that were detected, the concentrations present were well below the effects range-low (ERL) levels. No poly aromatic hydrocarbons (PAH's) were detected in any of the samples. The samples were also free of sulfides. No organo-pesticides were detected in any of the samples. The test for organo-pesticides (EPA 8081) was performed several days after the normal hold time after the laboratory contracted to perform the test (Babcock Laboratories) initially performed the wrong test (EPA 8082) on a portion of the sample. Neither FGL Laboratories nor Babcock Laboratories believe that this delay affected the outcome of the test. Also, no organo-pesticides were detected in the previous Port San Luis Harbor District's sediments collected and tested in 2003 or 2009. Non-polar and total oil and grease were tested using the EPA method 9071B recommended for sediments and solids that measures all oil and grease including that occurring naturally in animal and plant tissues; non-polar and total oil and grease were detected. Based on the 2013 results, the sediments should be compatible for excavation and placement, and contaminant's levels should represent minimal threat to the marine benthic environment. The Eelgrass Mitigation And Monitoring Plan In Support Of The Port San Luis Breakwater Repairs, Port San Luis, San Luis Obispo County, California (March 2021), performed by Corps contractor Merkel and Associates [Appendix B of Draft EA] included sampling and test results of 12 grab surface grab samples taken during the April-May 2020 eelgrass surveys. The results, when coupled with all other factors of littoral sediment source, lack of contaminant sources in the area, a general knowledge of the driver of accumulation being the breakwater, and the planned immediate area reuse, support a Tier 1.

e. Aquatic Ecosystem and Organism Determinations (use evaluation and testing procedures in Subpart G, as appropriate).

(1) Plankton, Benthos and Nekton

Stone placement, sediment excavation and placement operations would result in short-term turbidity impacts that would affect plankton in the area. Organisms could stifle in the immediate vicinity as these small organisms are impacted by turbidity. However, these effects would be small in both area and time and the plankton would be expected to recover quickly once excavation and placement is completed. Benthic organisms would be crushed, buried, smothered, and/or displaced by sediment excavation and placement activities, but the areas would be minor in comparision to total benthic habitat available in San Luis Obispo Bay (project area would be less than 1% of benthic habitat) and would recolonize and re-establish productivity rates within one to five years. Larger organisms in the nekton would be expected to avoid placement operations and would not be impacted.

(2) Food Web

Impacts to the bottom of the food chain (plankton and nekton) due to stone placement, sediment excavation and sediment placement would be short term and occur in a small area. Recovery would be quick once excavation and placement operations are concluded.

(3) Special Aquatic Sites

The estimated direct impact to Pacific eelgrass (*Zostera pacifica*) due to shoal excavation is 1.8 acres. The estimated worst case potential direct and indirect impacts to Pacific eelgrass due to shoal excavation and breakwater repair construction activities within the entire work area is 4.39 acres. The estimated impact to surfgrass due to breakwater repair activities within the entire project area ranges from no impact (0 m^2) to 31 m^2. The Corps has a fully developed eelgrass and surfgrass mitigation plan to address minimization measures to reduce eelgrass and surfgrass impacts and to mitigate the anticipated impacts to eelgrass in accordance with the California Eelgrass Mitigation Policy (CEMP) at a 1.2:1 mitigation ratio. Pacific eelgrass is a woody, more robust, slower growing species than the common eelgrass, *Zostera marina,* found in harbors and marinas along the California coast. Due to the slower growth rates of Pacific eelgrass it is anticipated in combination with the mitigation efforts the ecosystem functions of the impacted Pacific eelgrass habitat would recover in five years (Keith Merkel, personal communication, March 25, 2021). Restoration of the Pacific eelgrass in anticipated to commence in the optimal time for transplantation of the 2021 growing season, one year ahead of construction, to reduce temporal effects and support an adaptive management restoration plan. For a complete analysis of impacts to seagrass species present within the project area, minimization measures, and detailed plan for mitigation see Appendix B, Eelgrass Mitigation and Monitoring Plan in Support Of The Port San Luis Breakwater Repairs (Merkel & Associates Jan 2021).

No impacts to special aquatic sites are anticipated due to sediment placement activities.

(4) Threatened & Endangered Species

Federally listed species and critical habitat are present in the vicinity of the breakwater, including federally threatened Southern Sea Otter (*Enhydra lutris nereis*), federally endangered California least tern (*Sterna antillarum browni*), federally endangered black abalone (*Haliotis cracherodii*), and black abalone designated critical habitat.

Southern Sea Otter. It is expected that with the presence of active construction equipment and the associated noise during the stone placement, sediment excavation and sediment placement, otters will avoid the immediate work area. The proposed actions are not expected to have a consequential impact to foraging or feeding of Southern sea otters because the small footprint of the total project area accounts for only a small fraction (less than 1%) of the available foraging area within San Luis Obispo Bay and this area has not been identified or observed as an area Southern sea otters are commonly or frequently present in. With the implementation of avoidance and minimization measures, the Corps has determined the proposed project "may affect, but would not likely adversely affect" the Southern sea otter. Informal consultation pursuant to Section 7 of the Endangered Species Act will be initiated with the US Fish and Wildlife, the agency responsible for managing Southern sea otters.

California least tern. Based on the small impact area (less than 1% of available foraging habitat within San Luis Obispo Bay) around the active construction site during breakwater repair construction activities, the water quality monitoring (including turbidity monitoring) that would occur, and the distance between the breakwater site and nearest nesting colony, least tern foraging is not expected to be impacted by the proposed project. The Corps has determined the proposed project would have "no effect" on California least tern.

Black Abalone and its Designated Critical Habitat. Due to the documented observations of black abalone within the San Luis Obispo County region, and the habitat assessment's conclusion that the PSL breakwater provides suitable habitat to support juvenile and adult black abalone, the Corps has determined there is potential for black abalone to occur within the project area. Impacts to designated critical habitat for black abalone due to stone placement and shoal excavation activities would be temporary, as it is anticipated the repair areas would retain characteristics required to support black abalone once construction is complete. The Corps will implement the following avoidance and minimization measures;

- An additional black abalone survey will be conducted when adequate low tides and safe sea state conditions allow during 2021 or 2022 prior to breakwater repair construction commencing to confirm no black abalone are present.
- A qualified black abalone biologist will be on-site during construction to periodically survey the breakwater structure as new sections are repaired and core interstitial spaces are exposed to ensure no black abalone are present or are in harm's way. Approximately, one 75 – 100 ft section of breakwater will be repaired per week.

- Should black abalone be observed within the PSL breakwater repair area, work will cease in that immediate area and initiation of Section 7 consultation would be immediately initiated with the National Marine Fisheries Service.

With the implementation of the avoidance and minimization measures, the Corps has determined the proposed project "may affect but would not likely adversely affect" the black abalone and black abalone designated critical habitat. Informal consultation pursuant to Section 7 of the Endangered Species Act will be initiated with the National Marine Fisheries Service, the agency responsible for managing black abalone.

(5) Other fish and wildlife:

Birds would generally avoid the breakwater repair site, excavation site and placement site due to visual and auditory disturbances. Although placement operations could attract birds to the benthic organisms coming out of the clamshell, bucket, or storage barge/scow, as an alternate food source. Fish species are also expected to avoid the immediate areas during these activities due to auditory and turbidity disturbances.

Marine mammals are present on the breakwater and may be affected by the stone placement, excavation and placement activities that would occur immediately adjacent to this haul out area. The Corps has requested an incidental take authorization under section 101(a)(5) of the Marine Mammal Protection Act of 1972, as amended, for the take of marine mammals incidental to conducting repairs of the PSL breakwater. Because the Corps activities have the potential to cause Level B Take of marine mammals, the Corps has requested an Incidental Harassment Authorization from the National Oceanic and Atmospheric Administration (NOAA) Fisheries Office of Protected Resources. Three pinniped species may be present in the affected area during breakwater repair construction. Two species of pinnipeds were observed utilizing the PSL breakwater as a consistent haul-out site when weather permitted, the California sea lion and Steller sea lion. While harbor seals were not observed hauled out on the PSL breakwater, they were observed within the vicinity of the breakwater and have the potential to transit the waters near or within the project area. For a complete analysis of impacts to the marine mammal species present within the project area see Appendix for the submitted Incidental Harassment Authorization (IHA) Application for Operations and Maintenance (O&M) Port San Luis Harbor Breakwater Repairs (February 2021).

(6) Actions to Minimize Impacts (refer to Subpart H)

Needed: X YES NO

Minimization and avoidance measures are needed to minimize impacts to marine resources, minimization and avoidance measures are noted in previous sections.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination (consider factors in section 230.11(f)(2))

Is the mixing zone for each disposal (placement) site confined to the smallest practicable zone?
__X_ YES_NO

Sediments do not require a mixing zone in order to remain in compliance with water quality standards. As such, the mixing zone is considered to be the smallest practicable.

(2) Determination of Compliance with Applicable Water Quality Standards (present the standards and rationale for compliance or non-compliance with each standard)

The project will be in compliance with state water quality standards. Excavation of and placement of clean, sandy sea bottom sediment would result in short-term elevated turbidity levels and suspended sediment concentrations, but no appreciable long-term changes in other water quality parameters, including dissolved oxygen, pH, nutrients, or chemical contaminants. Factors considered in this assessment include the relatively localized nature of the expected turbidity plumes for the majority of the disposal/placement period and rapid diluting capacity of the receiving environment. Water quality monitoring would be required during sediment excavation and sediment placement activities. If monitoring indicates that suspended particulate concentrations outside the zone of initial dilution exceeds permissible limits, placement operations would be modified to reduce turbidity to permissible levels. Therefore, impacts to water quality from placement of sediment at the receiver site would not violate water quality objectives or compromise beneficial uses listed in the Basin Plan. USACE will continue to coordinate with the Central Coast Regional Water Quality Control Board during construction to minimize impacts to water quality.

(3) Potential Effects on Human Use Characteristic

a) Municipal and Private Water Supply (refer to section 230.50)

There are no municipal or private water supply resources (i.e. aquifers, pipelines) in the project area. The project would have no effect on municipal or private water supplies or water conservation.

b) Recreational and Commercial Fisheries (refer to section 230.51)

The breakwater repair area, sediment excavation and placement areas are not subject to commercial fishing. Recreational fishing would move to avoid the breakwater repair area, sediment excavation and placement activities and to allow fish out of these areas.

c) Water Related Recreation (refer to section 230.52)

Construction equipment would be required to maintain ocean access outside of the immediate, designated construction limits for all uses. During the project, proper advanced notice to mariners would occur and navigational traffic would not be allowed within the project area. The displacement of recreational boating and kayaking would be temporary and short-term. The currents are not expected to change in magnitude or direction. Therefore, stone placement, sediment excavation and placement activities are not expected to measurably change currents or change surfing in any discernible way. To minimize navigation impacts and threats to vessel safety, all barges, scows and tugboats would be equipped with markings and lightings in accordance with the U.S. Coast Guard regulations. The location and schedule of the work would be published in the U.S. Coast Guard Local Notice to Mariners.

d) Aesthetics (refer to section 230.53)

Minor, short term effects during stone placement, sediment excavation and placement activities are anticipated. During stone placement, sediment excavation and placement activities, the visual character of the site would be affected by the dredge/crane barge and tugboats; however, these activties are temporary in duration, and as such, would not result in permanent effects to the visual character of the site.

e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves (refer to section 230.54)

The discharge of dredged and fill material into waters of the US associated with the Proposed Action would not have any effect on national and historic monuments, national seashores, wild and scenic rivers, wilderness areas or research sites.

f) Determination of Cumulative Effects on the Aquatic Ecosystem (consider requirements in section 230.11(g))

No other past, present or reasonably foreseeable future projects are ongoing or anticipated within the Proposed Action's area of potential effects that would result in residual or additional cumulative effects to the aquatic ecosystem.

g) Determination of Secondary Effects on the Aquatic Ecosystem (consider requirements in section 230.11(h))

Secondary effects of the discharge of sediment within the excavation site and at the placement site would be negligible. Areas outside the direct impact areas would have only negligible turbidity effects to marine resources, with the exception of eelgrass immediately adjacent to the excavation template which may suffer some losses due to turbidity. Water quality monitoring conducted during excavation and

placement activities will ensure turbidity is controlled and confined to the immediate area, minimizing secondary effects to marine resources within the vicinity.

Secondary effects from breakwater repair could include minor loss of eelgrass associated with shading from barges, anchoring and maneuvering within adjacent eelgrass beds. These effects would be minimized through implementation of controls on work limits and methodologies. Post-construction eelgrass surveys would document any losses to eelgrass beds and ensure that the restoration provided by the eelgrass mitigation plan are sufficient to offset those impacts.

III. Findings of Compliance or Non-Compliance with the Restrictions on Discharge

a. Adaptation of the Section 404(b)(l) Guidelines to this Evaluation

No significant adaptations of the guidelines were made relative to this evaluation.

b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem:

Alternative placement sites would have similar impacts on the Aquatic Ecosystem as the proposed placement site. Alternative sites were not considered practicable alternatives due to the increased cost the project would incur to place sediments at sites further distances from the Port San Luis Harbor breakwater given the limited operations and maintenance funding available. Alternative sites would also not provide the opportunity to support creation of the eelgrass mitigation site, which has specific location requirements based on parameters such as depth and limited wave action.

Impacts of the No Action alternative have been evaluated in the EA, but this would not meet the project's purpose and need. In the absence of breakwater repair, the breakwater would become increasingly susceptible to erosion and structural failure, which would jeopardize safety. Continued disrepair of the structure would eventually require emergency work to avoid public safety hazards, and/or closure of the harbor. Additional damages would also incur additional costs to restore the breakwater with emergency repairs.

c. Compliance with Applicable State Water Quality Standards.

The proposed project meets State of California water quality standards.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act.

No toxic materials/wastes are expected to be produced or introduced into the environment by proposed discharges of dredged or fill material into waters of the US.

e. Compliance with Endangered Species Act of 1973.

As discussed above, the Corps has determined that the proposed discharges of dredged or fill material into waters of the US will not have an adverse effect on any species Federally-listed as threatened or endangered nor on designated critical habitat. Informal consultation will occur with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to obtain their concurrence with the Corps' determination that the proposed project may affect but would not likely adversely affect Southern Sea Otters, Black Abalone and Black Abalone critical habitat.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972.

No sanctuaries as designated by the Marine Protection, Research and Sanctuaries Act of 1972 will be affected by proposed discharges of dredged or fill material into waters of the US.

g. Evaluation of Extent of Degradation of the Waters of the United States

(1) Significant Adverse Effects on Human Health and Welfare

(a) Municipal and Private Water Supplies

Placement activities will have no effect on municipal and private water supplies.

(b) Recreational and Commercial Fisheries

The proposed project would have minor, short-term impacts, but no significant adverse effects on recreational fisheries. The project area is not subject to commercial fishing. Recreational fishing would move to avoid the project area and to allow fish out of these areas. To minimize navigation impacts and threats to vessel safety, all barges, scows and tug vessels would be equipped with markings and lightings in accordance with the U.S. Coast Guard regulations. The location and schedule of the work would be published in the U.S. Coast Guard Local Notice to Mariners.

(c) Plankton

Placement operations would result in short-term turbidity impacts that would affect plankton in the area. Organisms could stifle in the immediate vicinity as these small organisms are impacted by turbidity. However, these effects would be small in both area and time and the plankton would be expected to recover quickly once placement is completed.

(d) Fish

Larger organisms in the nekton would be expected to avoid excavation, placement operations, and rock placement operations, and would not be impacted.

(e) Shellfish

Benthic organisms, including shellfish, would be buried by excavation and sediment/rock placement activities, but the areas would be minor in area and recolonization would begin once placement activities are complete, re-establishing productivity rates within one to five years.

(f) Wildlife

Birds would generally avoid the placement site, although placement activities could attract birds to the benthic organisms coming out of the clamshell, bucket, barge/scow, as an alternate food source. Marine mammals would avoid the excavation and sediment/rock placement activities, see Appendix B of EA for full analysis of impacts to marine mammals.

(g) Special Aquatic Sites

The estimated direct impact to Pacific eelgrass (*Zostera pacifica*) due to shoal excavation is 1.8 acres. The estimated worst case potential direct and indirect impacts to Pacific eelgrass due to shoal excavation and breakwater repair construction activities within the entire work area is 4.39 acres. The estimated impact to surfgrass due to breakwater repair activities within the entire project area ranges from no impact (0 m^2) to 31 m^2. The Corps has a fully developed eelgrass and surfgrass mitigation plan to address minimization measures to reduce eelgrass and surfgrass impacts and to mitigate the anticipated impacts to eelgrass in accordance with the California Eelgrass Mitigation Policy (CEMP) at a 1.2:1 mitigation ratio. Pacific eelgrass is a woody, more robust, slower growing species than the common eelgrass, *Zostera marina,* found in harbors and marinas along the California coast. Due to the slower growth rates of Pacific eelgrass it is anticipated in combination with the mitigation efforts the ecosystem functions of the impacted Pacific eelgrass habitat would recover in five years (Keith Merkel, personal communication, March 25, 2021). Restoration of the Pacific eelgrass in anticipated to commence in the optimal time for transplantation of the 2021 growing season, one year ahead of construction, to reduce temporal effects and support an adaptive management restoration plan. For a complete analysis of impacts to seagrass species present within the project area, minimization measures, and detailed plan for mitigation see Appendix B, Eelgrass Mitigation and Monitoring Plan in Support Of The Port San Luis Breakwater Repairs (Merkel & Associates Jan 2021).

(2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems: Any adverse effects would be short-term and insignificant. Refer to 4.2 in the EA.

(3) Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability: Any adverse effects would be short-term and less than significant. Refer to Sections 4.2 of the EA.

(4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values: Any adverse effects would be short-term and less than significant. Refer to sections 4.5 and 4.6 of the EA.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

Specific environmental commitments are outlined in the analysis above and in the attached EA. All appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharges on the aquatic ecosystem.

i. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material (specify which) is:

The final 404(b)(1) evaluation and Findings of Compliance will be included with the final EA.

Prepared by: __Kirk Brus _____ Date: _____27 MARCH 2021_____