Draft Environmental Assessment

Pier 5000 South Side Inner Berth Expansion Dredging

Navy Base Point Loma

San Diego, California

May 2021

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Abstract

Designation:	Environmental Assessment
Title of Proposed Action:	Pier 5000 South Side Inner Berth Expansion Dredging
Project Location:	Navy Base Point Loma
Lead Agency for the EA:	Department of the Navy
Cooperating Agency:	Not Applicable
Affected Region:	San Diego, California
Action Proponent:	Naval Facilities Engineering Systems Command
Point of Contact:	Pier 5000 South Side Inner Berth Expansion Dredging Project Manager Department of the Navy Naval Facilities Engineering Systems Command Southwest, Coastal 750 Pacific Highway, 12th Floor San Diego, California 92132
Date:	May 2021

Naval Facilities Engineering Systems Command, Southwest, a Command of the United States Navy (hereinafter, jointly referred to as the Navy), has prepared this Environmental Assessment in accordance with the National Environmental Policy Act, as implemented by the Council on Environmental Quality Regulations and Navy regulations for implementing the National Environmental Policy Act. The Proposed Action would dredge approximately 6,365 cubic yards of San Diego Bay bottom material to a depth of -38.6 feet mean lower low water (MLLW) (including the 2 foot over dredge allowance) over approximately 10 days, to support continued Navy submarine fleet operations at Naval Base Point Loma. This Environmental Assessment evaluates the potential environmental impacts associated with two action alternatives (i.e., Proposed Action and the Reduced Dredging Footprint Alternative) and the No Action Alternative on the following resource areas: water resources, air quality, marine biological resources, noise, transportation and circulation, and hazardous materials and wastes.

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EXECUTIVE SUMMARY

ES.1 Proposed Action

The United States (U.S.) Navy (Navy) proposes to dredge sediment in the South Side Inner (SSI) berth of Pier 5000 at Naval Base Point Loma (NBPL) to reach depths of -36.6 feet (ft) mean lower low water (MLLW). The proposal includes the potential disposal of dredge sediments at nearshore replenishment sites, offshore disposal sites, or upland disposal sites. This Environmental Assessment (EA) addresses the potential environmental impacts of the Proposed Action, the Reduced Dredging Footprint Alternative, and the No Action Alternative.

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide adequate deep-water berthing capability at Pier 5000 to satisfy operational requirements for navigation and berthing pursuant to the requirements established in 2015 (Naval Sea Systems Command [NAVSEA] Memo 3120 Ser 39T236/088).

The need for the Proposed Action is to ensure NBPL's capability to berth all classes of submarines in the Pacific Fleet, furthering the Navy's ability to train and equip combat-capable naval forces ready to deploy worldwide.

ES.3 Alternatives Considered

Three alternatives are carried forward for detailed analysis in this EA: (1) the Proposed Action; (2) Reduced Dredging Footprint Alternative; and (3) No Action Alternative. Under Alternatives 1 and 2, options for dredge disposal were also identified and are evaluated herein.

ES.4 Summary of Environmental Resources Evaluated in the EA

The Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) and Navy instructions for implementing NEPA specify that an Environmental Assessment (EA) should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact.

The following resource areas have been addressed in detail within this EA: air quality; water resources; marine biological resources; noise; transportation and traffic; and hazardous materials and wastes. Other resource areas are briefly discussed but dismissed for further analysis as the Proposed Action would have no potential to result in potential impacts.

ES.5 Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigating Actions

Table ES-1 provides a summary of the potential impacts to the resources associated with each of the alternative actions analyzed followed by the respective avoidance and minimization measures for the Proposed Action, Reduced Dredging Footprint Alternative, and No Action Alternative. Chapter 3 provides a detailed discussion of environmental consequences for the six resources that would potentially be subject to project impacts. As described in Table ES-1, implementation of the Proposed Action, Reduced Dredging Footprint Alternative, or No Action Alternative would not result in significant impacts to any of the analyzed resource area.

ES.6 Public Involvement

The Navy submitted a Notice of Availability (NOA) for the Draft EA to be published in the *San Diego Union Tribune* on May 24, 2021. The Notice described the Proposed Action, solicited public comments on the Draft Environmental Assessment, provided dates of the 15-day public comment period, and announced that due to the ongoing COVID-19 pandemic, a hardcopy of the Environmental Assessment would be available on request, and for electronic review on the Navy Region Southwest website (https://www.cnic.navy.mil/navysouthwestprojects). The Draft Environmental Assessment was made available for public review beginning on May 24, 2021 and ending on June 7, 2021. Public comments can be submitted via electronic mail to [NAVFAC_SW_NBPL_PIER5000_INNER_BERTH_EXPANSION_DREDGE@navy.mil] during the 15-day public comment period.

Table ES-1. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Air Quality	Under the No Action Alternative, no dredging would occur and the current sediment surface depths would not be altered to meet the submarine operational depth requirements. Therefore, there would be no significant impacts to air quality. **Avoidance and Minimization Measures** Under the No Action Alternative, avoidance and minimization measures would not be necessary.	Air quality impacts from dredging and sediment disposal activities would largely be combustion emissions originating from the use of fossil-fuel-powered equipment. Because of the nature of the Proposed Action, earthmoving and grading would not be required; dredging activities would not generate fugitive dust because the marine sediments that would be dredged are wet. Dredging operations would take place during daylight hours for approximately 10 days to remove approximately 6,365 cubic yards. Estimated emissions would be below the *de minimis* thresholds for Clean Air Act conformity. Therefore, implementation of the Proposed Action would not result in significant impacts to air quality. **Avoidance and Minimization Measures** Under the Proposed Action, avoidance and minimization measures would not be required.	The Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action, except that the dredged volume would be approximately 4,950 cy and dredging duration would be approximately 7 days. Therefore, the Reduced Dredging Footprint Alternative would have reduced impacts as compared to those described for the Proposed Action. There would be no significant impacts to air quality. **Avoidance and Minimization Measures** Under the Reduced Dredging Footprint Alternative, avoidance and minimization measures would not be necessary.
Water Resources	Under the No Action Alternative, no dredging would occur and the current sediment surface depths would not be manually altered to meet submarine operational depth requirements. Existing conditions would remain unchanged. Therefore, no impacts to water resources would occur under the No Action Alternative.	Dredging operations would temporarily increase water and sediment movements in the area where dredging would occur, but the effect would be strictly limited to the duration of the dredging period and work area. The minor changes to bathymetry would not be sufficient to affect circulation patterns in San Diego Bay (Bay). Therefore, dredging associated with the Proposed Action would not have a significant impact to bathymetry and circulation.	The Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action, except that the dredged volume and duration would be reduced. Therefore, the Reduced Dredging Footprint Alternative would have reduced impacts as compared to those described for Proposed Action and would not result in significant impacts to water resources.

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Water Resources (continued)	**Avoidance and Minimization Measures** Under the No Action Alternative, avoidance and minimization measures would not be necessary.	Sediment samples from the Pier 5000 SSI berth expansion dredging area were collected in February 2021 and tested in accordance with regulations in Title 40 CFR Parts 220–228. The results of the sediment characterization study were provided to the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) for review and comment on potential sediment disposal options. Agency review determined that the results for the proposed dredging footprint met the allowable parameters for unconfined ocean disposal at the LA-5 Ocean Dredged Material Disposal Site (ODMDS) but not for nearshore beneficial reuse. All of the Pier 5000 SSI berth expansion dredged materials were approved as suitable for unconfined aquatic disposal at the LA-5 ODMDS by the USEPA and USACE in March 2021. Increases in turbidity would likely be limited to the immediate vicinity of the operation. Decreases in levels of light penetration and dissolved oxygen would occur only within a few hundred feet of the dredging site and would end several hours after the cessation of dredging activities, making a permanent decline in aquatic primary productivity unlikely. The material to be dredged contains very low chemical concentrations. Therefore, it is believed that elevated levels of contaminants are unlikely to occur onsite or to potentially cause dredging-induced	**Avoidance and Minimization Measures** Under the Reduced Dredging Footprint Alternative, avoidance and minimization measures would be identical to those associated with the Proposed Action.

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Water Resources (continued)		mobilization of significant levels of dissolved-phase contaminants into the water column. **Avoidance and Minimization Measures** Implementation of the Proposed Action would not result in significant impacts to water resources. Therefore, implementation of the Proposed Action would not result in the need to implement avoidance and minimization measures. Normal best management practices (BMPs) would be followed during dredging, such as requiring the dredging contractor to have and deploy, as needed, spill kits and cleanup supplies.	
Biological Resources	Under the No Action Alternative, no dredging would occur and the current sediment surface depths would not be manually altered to meet the submarine operational depth requirements. Existing conditions would remain unchanged. Therefore, there would be no impacts to marine biological resources under the No Action Alternative. **Avoidance and Minimization Measures** Under the No Action Alternative, avoidance and minimization measures would not be necessary.	Implementation of the Proposed Action would result in temporary habitat disturbance from an increase in turbidity and underwater noise generated during dredging activities, which is expected to last approximately 10 days. Physical disturbance would result in the loss of marine benthic organisms. Turbidity would persist throughout dredging activities; however, it would vary spatially based on currents and sediment grain size. Turbidity plumes from dredging are expected to persist for several hours following dredging activities. Additionally, there would be minor effects to essential fish habitat because fish are expected to temporarily leave the project area and the benthic community would be temporarily disturbed. These impacts are not considered significant because the affected areas would be recolonized by benthic and fish communities within 12 months.	The Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action, except that the dredged volume and duration would be reduced. Therefore, there would be no significant effect on marine benthic organisms, marine birds, fish, marine mammals, green sea turtles, and California least tern populations or habitats as a result of the Reduced Dredging Footprint Alternative and would have reduced impacts as compared to those described for the Proposed Action. **Avoidance and Minimization Measures** Under the Reduced Dredging Footprint Alternative, avoidance and minimization measures would be identical to those associated with the Proposed Action.

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Biological Resources (continued)		Dredging activities would result in the temporary displacement of marine birds and minimal alterations to foraging conditions and/or prey availability. These impacts would not be significant because of their limited scale and duration. Further, dredging would occur outside the California least tern *(Sterna antillarum browni)* breeding season. Underwater noise generated during dredging activities would disturb fish and marine mammals within the vicinity. As a result, fish and marine mammals may leave the project area during dredging activities. However, increased underwater noise and activity would not vary substantially from normal levels of activity in the immediate area and would cease when dredging activities ended. Additionally, the implementation of avoidance and minimization measures would prevent impacts to fish and marine mammals. Dredging activities are not expected to adversely affect highly mobile marine mammals following implementation of avoidance and minimization measures listed below, including monitoring during dredging activities. Therefore, there would be no reasonably foreseeable harassment or "take" of marine mammals, as defined by the Marine Mammal Protection Act (MMPA). In summary, implementation of the Proposed Action would result in no significant impacts to marine biological resources.	

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Biological Resources (continued)		**Avoidance and Minimization Measures** The following avoidance and minimization measures would be implemented during the proposed dredging activities. In addition, the project area would be visually scanned for the presence of marine mammals and sea turtles prior to commencement of in-water dredging activities. Dredging activities would occur outside of the California least tern breeding season (April 1 – September 15). A pre-dredging survey for *Caulerpa* (*Caulerpa taxifolia*), an invasive alga, would be conducted consistent with National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) requirements. If *Caulerpa* is found in the project area during this survey, NMFS-approved *Caulerpa* Control Protocols would be followed. Dredging activities would be regularly monitored to ensure no deviations from the project as described herein. Dredging activities would not employ hydraulic methods.	
Noise	Under the No Action Alternative, no dredging would occur and the current sediment surface depths would not be manually altered to meet the submarine operational depth requirements. Existing conditions would remain unchanged. Therefore, the No	Under the Proposed Action, airborne noise would be produced from dredging equipment, tugboats and barges, and associated human activity. Noise from clamshell grab dredging is relatively quiet in comparison to the Bay's ambient sound levels and duration of the activity would be short-term. Dredging	The Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action, except that the dredged volume and duration would be reduced. Airborne and underwater noise generated under this alternative would be generally consistent with the industrial waterfront

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Noise (continued)	Action Alternative would have no significant impacts related to airborne or underwater noise. **Avoidance and Minimization Measures** Under the No Action Alternative, avoidance and minimization measures would not be necessary.	operations would take place during daylight hours for approximately 10 days. Underwater noise associated with dredging activities would temporarily disturb fish and, if present, marine mammals and sea turtles in the vicinity of the project site. However, impacts would be limited in scale and would be temporary. Therefore, impacts would not be significant. Noise associated with the proposed dredging would be generally consistent with the industrial waterfront area and would not significantly alter the overall airborne or underwater noise environment. Activities associated with the Proposed Action are temporary; therefore, noise generated from dredging would similarly be short-term. As such, implementation of the Proposed Action would not have a significant short- or long-term impact with respect to noise. **Avoidance and Minimization Measures** Under the Proposed Action, avoidance and minimization measures would be necessary	area and would not permanently alter the overall noise environment. Therefore, implementation of the Reduced Dredging Footprint Alternative would have no significant impacts related to airborne or underwater noise. Impacts would be slightly reduced as compared to the Proposed Action due to the reduced duration of dredging activities. **Avoidance and Minimization Measures** Under the Reduced Dredging Footprint Alternative, avoidance and minimization measures would not be necessary.
Transportation and Traffic	Under the No Action Alternative, no dredging would occur and the current sediment surface depths would not be manually altered to meet the submarine operational depth requirements. Therefore, there would be no significant impacts to transportation and traffic.	Under the Proposed Action, one or a combination of the following disposal options would occur. The primary traffic-related impacts would be to vessel transportation in the Bay and Pacific Ocean or between the confined drying facility and either the Otay Landfill or Sycamore Landfill. <u>Nearshore Replenishment – Beneficial Reuse Option</u>	The Reduced Dredging Footprint Alternative would have impacts similar to those described for the Proposed Action, except that the dredged volume and duration would be reduced. Fewer barge or truck trips associated with sediment disposal would be necessary. Therefore, under the Reduced Dredging Footprint Alternative, there would have no significant impacts related to transportation. Impacts would be

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Transportation and Traffic (continued)	**Avoidance and Minimization Measures** Under the No Action Alternative, avoidance and minimization measures would not be necessary.	The primary traffic-related impacts under implementation of the Nearshore Replenishment Option would be to vessel transportation within the Bay and Pacific Ocean. Approximately 10 round trips would be necessary to transport dredged sediment from the dredge site to the disposal site. There would be less than significant impacts to vessel transportation as a result of implementation of the Nearshore Replenishment Option of the Proposed Action. <u>Ocean Disposal Option</u> The primary traffic-related impacts under implementation of the Ocean Disposal Option would be to vessel transportation within the Bay and Pacific Ocean. Up to 10 round trips, at one trip per day, would be necessary to transport the dredged sediment from the dredge sites to the LA-5 ODMDS. There would be temporary and less than significant impacts to vessel transportation as a result of implementation of the Ocean Disposal Option of the Proposed Action. <u>Upland Disposal Option</u> The primary traffic-related impacts under implementation of the Upland Disposal Option would be to truck trips between the designated confined drying facility and either the Otay Landfill or Sycamore Landfill. Approximately 531 truck trips would be necessary to transport the dredged sediment from the confined drying facility to the landfill disposal site. There would be temporary and less than significant impacts to level of service	slightly reduced as compared to the Proposed Action due to the reduced dredging activities. **Avoidance and Minimization Measures** Under the Reduced Dredging Footprint Alternative, avoidance and minimization measures would be identical to those associated with the Proposed Action.

Table ES-1. Summary of Potential Impacts to Resource Areas (Continued)

Resource Area	*No Action Alternative*	*Proposed Action*	*Reduced Dredging Footprint Alternative*
Transportation and Traffic (continued)		on the local road network as a result of implementation of the Upland Disposal Option of the Proposed Action. **Avoidance and Minimization Measures** Implementation of the Nearshore Replenishment Option, Ocean Disposal Option, or Upland Disposal Option would not require any avoidance or minimization measures.	
Hazardous Materials and Wastes	Under the No Action Alternative, no dredging would occur and the current sediment surface depths would not be manually altered to meet the submarine operational depth requirements. Existing conditions would remain unchanged. Therefore, no impacts from hazardous materials or substances would occur under the No Action Alternative. **Avoidance and Minimization Measures** Under the No Action Alternative, avoidance and minimization measures would not be necessary.	Sediment testing and characterization has been completed for the sediment samples from the Pier 5000 dredging area. All dredged sediment disposal operations performed under the Proposed Action would comply with Clean Water Act (CWA) Section 404 and be in accordance with a dredging permit issued by USACE, and CWA Section 401 Water Quality Certification from the San Diego Regional Water Quality Control Board. Implementation of the Proposed Action would result in a less than significant impact from hazardous materials and wastes. **Avoidance and Minimization Measures** Implementation of the Proposed Action would not result in significant impacts from hazardous materials and wastes. Therefore, implementation of the Proposed Action would not result in the need to implement avoidance and minimization measures. Typical BMPs would be followed during dredging, such as requiring the contractor to have and deploy, as needed, spill kits and cleanup supplies.	The Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action, except that the dredged volume and duration would be reduced. Therefore, the Reduced Dredging Footprint Alternative would have no significant impacts related to hazardous materials and wastes. Impacts would be slightly reduced as compared to the Proposed Action due to the reduced dredging activities. **Avoidance and Minimization Measures** Under the Reduced Dredging Footprint Alternative, avoidance and minimization measures would not be necessary.

Environmental Assessment

PIER 5000 SOUTH INNER BERTH EXPANSION DREDGING

Navy Base Point Loma, California

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Abbreviations and Acronyms

Acronym	Definition
ACM	asbestos-containing material
ADT	average daily trips
AICUZ	Air Installation Compatible Use Zone
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
ANSI	American National Standard Institute
APE	Area of Potential Effects
ASW	anti-submarine warfare
Basin Plan	Water Quality Control Plan for the San Diego Basin
Bay	San Diego Bay
BCC	Birds of Conservation Concern Status
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCC	California Coastal Commission
CCR	California Code of Regulations
CDF	confined drying facility
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	centimeters
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CWA	Clean Water Act
CONBPL	Commanding Officer Naval Base Point Loma
CSS-11	Commander, Submarine Squadron 11
CTR	California Toxics Rule
CWA	Clean Water Act
cy	cubic yards
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted sound level
dBPEAK	peak decibels
dBSEL	sound exposure level decibels
dBRMS	root mean square decibels
DEH	San Diego County Department of Environmental Health
DERP	Defense Environmental Restoration Program
DNL	day-night average sound level
DoD	U.S. Department of Defense
DON	U.S. Department of the Navy
DOSITS	Discovery of Sound in the Sea
EA	Environmental Assessment
EFH	Essential Fish Habitat

Acronym	Definition
EIS	Environmental Impact Statement
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
ESQD	explosive safety quantity distance
FAA	Federal Aviation Administration
FEAD	Facilities Engineering and Acquisition Division
FHWA	Federal Highway Administration
FICUN	Federal Interagency Committee on Urban Noise
FITCPAC	Fleet Intelligence Training Center Pacific
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
ft	feet/foot
GHG	greenhouse gas
GPS	Global Positioning System
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HAPC	habitat areas of particular concern
Hz	hertz
in	inches
INRMP	Integrated Natural Resource Management Plan
IRP	Installation Restoration Program
ITM	Inland Testing Manual
LBP	lead-based paint
L_{EQ}	Equivalent Sound Level
L_{max}	maximum A-weighted sound level
ln	natural logarithm
LOS	level of service
m	meters
m^3	cubic meters
MBTA	Migratory Bird Treaty Act
mg	milligram
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
mL/L	milliliters per liter
MLLW	mean lower low water
MMPA	Marine Mammal Protection Act
MOU	Memorandum of Understanding
MPRSA	Marine, Protection, Research, and Sanctuaries Act of 1972
MSAT	Mobile Source Air Toxic
MSDS	Material Safety Data Sheet
MSF	magnetic silencing facility
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NA	not available or not applicable
NAAQS	National Ambient Air Quality Standards
NAVFAC SW	Naval Facilities Engineering Systems Command Southwest
NAVSEA	Naval Sea Systems Command
Navy	Department of Navy
NBPL	Naval Base Point Loma
NBSD	Naval Base San Diego
NEPA	National Environmental Policy Act

Acronym	Definition
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NIPTS	noise induced permanent threshold shift
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	notice of availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRSW	Navy Region Southwest
NSI	North Side Inner
NTU	nephelometric turbidity units
O_3	ozone
ODMDS	Ocean Dredged Material Disposal Site
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	Office of the Chief of Naval Operations Instruction
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
PAH	polycyclic aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyl
PFMC	Pacific Fishery Management Council
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTS	Permanent Threshold Shift
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RHA	Rivers and Harbors Act
RHMP	Regional Harbor Monitoring Program
RMS	root-mean square
RMS re: 1 µPA	root-mean square referenced to one micro-Pascal
ROI	region of influence
RONA	Record of Non-Applicability
RWQCB	Regional Water Quality Control Act
SANDAG	San Diego Association of Governments
SCCWRP	Southern California Coastal Water Research Project
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SEL	sound exposure level
sf	square feet
SSI	South Side Inner
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPL	sound pressure level

Acronym	Definition
SSC	Species of Special Concern
SSC Pacific	Space and Naval Warfare Systems Command Pacific
SUAD	suitability for unconfined aquatic disposal
TMDL	total maximum daily load
tpy	tons per year
TSCA	Toxic Substances Control Act
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
µg	micrograms
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
µPA	microPascals
VACL	Virginia Class

1 Purpose of and Need for the Proposed Action

1.1 Introduction

The United States (U.S.) Navy (Navy) is proposing to expand and deepen the Pier 5000 South Side Inner (SSI) berthing area located at Navy Base Point Loma (NBPL) in San Diego, California. This Proposed Action would require dredging of approximately 6,365 cubic yards (cy) to a depth of -38.6 feet mean lower low water (MLLW) including the 2-foot overdredge (OD) allowance over an approximate 10-day period. As described further in Section 1.4, *Purpose and Need for the Proposed Action*, the Proposed Action is necessary to provide adequate navigation and berthing capabilities at the Pier 5000 SSI Berth to increase the Navy's ability to train and equip combat-capable naval forces ready to deploy worldwide. The proposed project would meet this purpose and need by providing space necessary to accommodate additional berthing configurations of Virginia Class (VACL) submarines at this location.

The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) (42 U.S. Code [U.S.C.] Chapter 55); Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508); and Navy regulations for implementing NEPA (32 CFR Part 775).

1.2 Background

NBPL is part of Navy Region Southwest, the naval shore installation management headquarters for the Southwest region (California, Arizona, Nevada, Utah, New Mexico, and Colorado). Navy Region Southwest is responsible for ensuring safety and providing infrastructure shore support for approximately one sixth of the entire U.S. Fleet homeported in the San Diego Bay (Bay) region (Naval Facilities Engineering Systems Command Southwest [NAVFAC SW] 2007). NBPL was first set aside for military purposes in 1852, and the Navy Submarine Support Facility was established in November 1963. In November 1974, NBPL was redesignated a shore command, serving assigned submarines (Submarine Group FIVE, Submarine Squadron THREE, and Submarine Development Group ONE), the Submarine Training Facility and later, Commander, Submarine Squadron 11 (CSS-11). Since 1995, several commands have been decommissioned or their homeports changed to meet downsizing requirements of the Navy. Commands throughout the San Diego area were regionalized in an effort to provide equal or better base services while managing a reduced budget. As a result of this initiative, the six naval installations on Point Loma were consolidated under Commander Navy Region Southwest as NBPL on 1 October 1998 (NAVFAC SW 2007).

Although not currently homeported at NBPL, Virginia Class (VACL) submarines regularly berth at NBPL for port calls, emergency maintenance, and equipment/supply loading. Additionally, the Navy is in the process of replacing its fleet of Los Angeles Class submarines with the more advanced and more versatile VACL submarines. VACL submarines are expected to eventually replace homeported Los Angeles Class submarines at NBPL. However, no NBPL VACL homeporting actions are proposed as part of this Proposed Action. Any future proposed NBPL VACL homeporting actions would be analyzed under NEPA when the proposals are identified. Dredging the Pier 5000 SSI berthing area to the required depth of -36.6 feet MLLW for VACL submarines would generally enhance berthing capabilities at NBPL. More specifically, the proposed dredging would permit berthing of alternative VACL configurations on the south side of the pier, such as VACL with Thin Line Towed Array (TLTA) systems.

Pier 5000 was constructed in 1962 at NBPL and refurbished in 1991 (NAVFAC SW 2007). Pier 5000 has historically been used for berthing large submarines. A map from the San Diego Unified Port District archives that identifies Bay dredging projects between 1935 and 1960 shows that the bayfloor in the vicinity of Pier 5000 was dredged to a depth of -36 feet MLLW in 1940 (Peeling 1975); however, as-built drawings of the Pier 5000 footprint show that the Proposed Action area was only dredged to a depth of -35 feet MLLW in 1961 (Jesse Gotz, Personal Communication 2020).

In May 2020, a full Tier III sediment characterization study was performed for the Pier 5000 Inner Berths maintenance dredging area located immediately adjacent to the Pier 5000 SSI berth expansion area (Proposed Action area). The study followed guidance per the Ocean Testing Manual (Green Book, USEPA/USACE 1991) and the Inland Testing Manual (ITM, USEPA/USACE 1998) to determine its suitability for unconfined aquatic disposal. In December 2020, the dredged sediments from this adjacent maintenance dredging area were approved for unconfined aquatic disposal at either the Silver Strand Boat Lanes or at the LA-5 Ocean Dredged Material Disposal Site (LA-5 ODMDS) by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA). Sediments from the Pier 5000 SSI berth expansion area (Proposed Action) were collected in February 2021 and analyzed for chemical and physical properties with the intent to compare results to the adjacent maintenance dredging area and subsequently include the dredged materials under the same agency determination for unconfined aquatic disposal.

Recent and historical grain size characteristics of sediments at NBPL, indicated that nearshore or direct beach placement would be appropriate alternative for the Proposed Action. However, results of the February 2021 investigation showed that although analytical chemistry results from the Pier 5000 SSI berth expansion area were similar to sediments collected from the adjacent Pier 5000 SSI Berth maintenance dredging footprint, the sediment grain size was finer than the adjacent footprint and did not fall within the grain size receiver envelope necessary for nearshore placement at the Silver Strand Boat Lanes. Therefore, the proposed Pier 5000 SSI berth expansion dredged materials were approved by the USACE and USEPA as suitable for unconfined aquatic disposal at the LA-5 ODMDS but not at the proposed Silver Strand nearshore beneficial reuse area (Robert Smith, Personal Communication 2021).

Although the beneficial reuse alternative of nearshore placement at the Silver Strand Boat Lanes was no longer considered a viable placement option following receipt of grain size testing results in March 2021, it was proposed for and is analyzed in this EA to provide consideration of impacts for alternatives for any nearshore placement of the dredged materials.

1.3 Location

NBPL is situated near the mouth of the Bay, on the western side directly opposite Naval Air Station North Island. It is bordered by the communities of La Playa to the south and Sunset Cliffs to the north, to the south and west by the Pacific Ocean, and to the east by the Bay. The approximately 0.44-acre (19,050-square-foot [sq feet]) project site is located on the south inboard area of Pier 5000. The three NBPL submarine berthing piers are located at the mouth of San Diego Bay, on the east side of the Point Loma peninsula north of Ballast Point (see Figure 1-1). Pier 5000 is the middle submarine pier at NBPL between Pier 5003 to the north and 5002 to the south.

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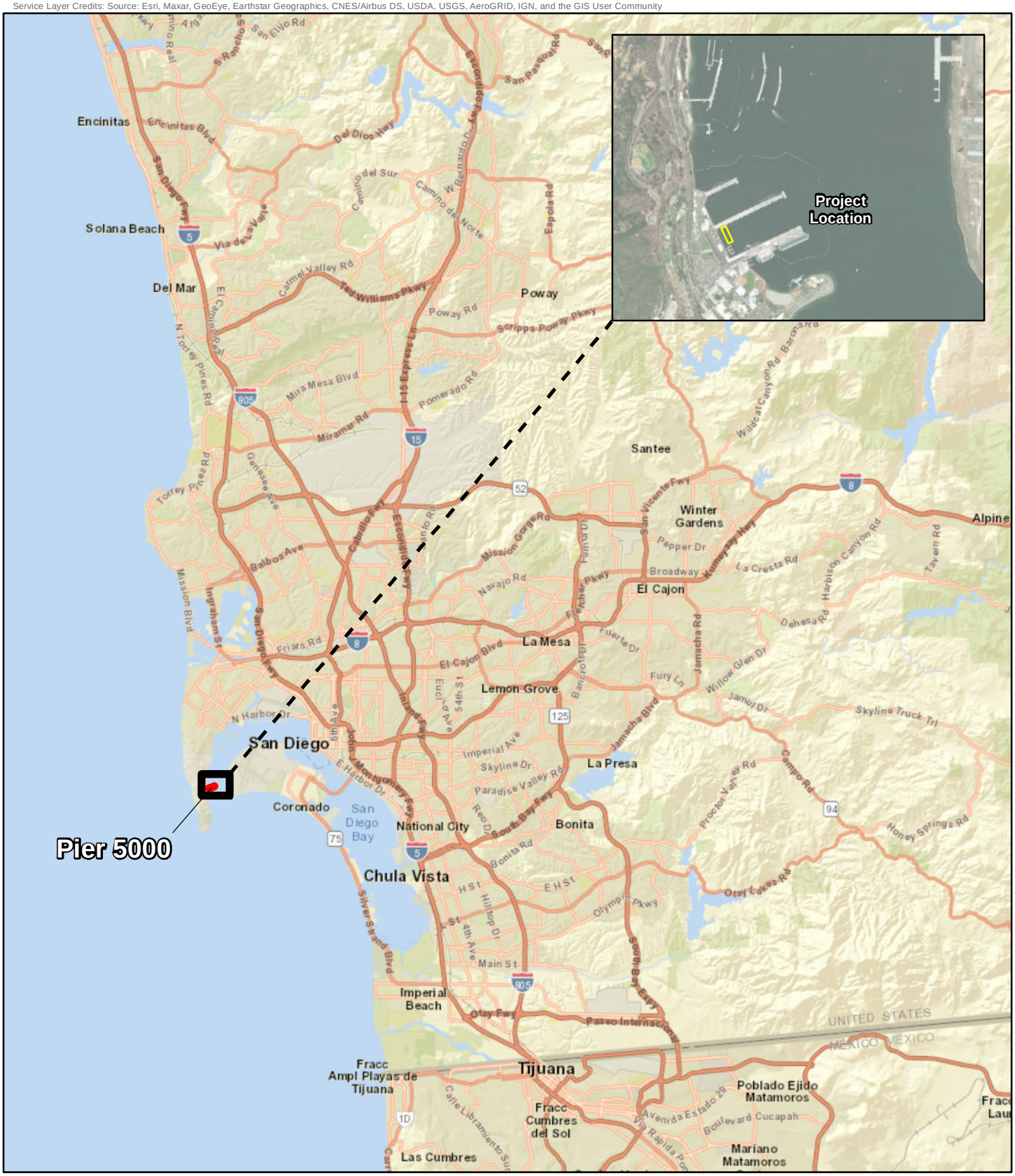

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1 inch = 5 miles

0 2.5 5 Miles

FIGURE 1-1

Regional Location
Pier 5000 South Side Inner Berth Expansion
Naval Base Point Loma, San Diego, CA

1.4 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide an adequate water depth to accommodate submarines at NBPL. In 2015, new submarine water depth requirements were updated for inner harbor and pier-side berths to accommodate all current Navy fleet and future vessels (Naval Sea Systems Command [NAVSEA] Memo 3120 Ser 39T236/088). This updated requirement resulted in a finding that both the berth and transit area for Pier 5000 did not provide adequate berth width and vertical clearance, pursuant to NAVSEA Memo 3120 Ser 39T236/088, for the navigation and berthing of large submarines, including "Jimmy Carter," Ohio, and VACL vessels. Therefore, Naval Facilities Engineering Systems Command Southwest (NAVFAC SW), a Command of the Navy (hereinafter, jointly referred to as the Navy) proposes to conduct dredging activities to expand the Pier 5000 SSI berthing area at NBPL.

> 10 U.S.C. Section 8062: "The Navy shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of naval forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Navy to meet the needs of war."

The need for the Proposed Action is to ensure NBPL's capability to berth all classes of submarines in the Pacific Fleet, furthering the Navy's ability to train and equip combat-capable naval forces ready to deploy worldwide. Current depth conditions at the Pier 5000 SSI berth do not meet these clearance requirements; therefore, Pier 5000 cannot support berthing configurations for all classes of deep-draft submarines that are currently projected to moor at the pier. In this regard, the Proposed Action furthers the Navy's execution of its congressionally mandated roles and responsibilities under 10 U.S.C. Section 8062.

1.5 Decision to be Made

The decision to be made as a result of the analysis in this EA is first to determine whether an Environmental Impact Statement (EIS) needs to be prepared. An EIS would be required if it is anticipated that the Proposed Action would have significant impacts to the human or natural environment. Should an EIS not be deemed necessary, the Proposed Action or an alternative action from this EA would be selected for implementation. This selection would be documented in a Finding of No Significant Impact (FONSI).

1.6 Scope of Environmental Analysis

This EA includes an analysis of potential direct, indirect, short-term, long-term, and cumulative impacts to the human and natural environment associated with the action alternatives and the No Action Alternative. Results from a previous sediment testing effort at Pier 5000 conducted in 2020 (NAVFAC SW 2020a) are reflective of sediment conditions at the project site and are therefore used to support impact analyses provided in this EA. Additionally, a new sediment testing effort was completed within this project area to support regulatory decision making on sediment disposal (i.e., nearshore replenishment, unconfined aquatic disposal, and upland disposal).

1.7 Key Documents

Key documents are sources of information incorporated into this EA. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ Regulations for Implementing NEPA encourage the incorporation of documents by reference (40 CFR §1502.21). Documents incorporated by reference in part or in whole are listed in Appendix A.

1.8 Relevant Laws and Regulations

The Navy has prepared this EA based upon federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action are listed in Appendix A. A description of the Proposed Action's consistency with these laws, policies, and regulations, as well as the names of regulatory agencies responsible for their implementation, is also presented in Appendix A.

1.9 Public and Agency Participation and Intergovernmental Coordination

The Navy published a Notice of Availability (NOA) for the Draft EA in the *San Diego Union-Tribune* on May 24, 2021. The Notice described the Proposed Action, solicited public comments on the Draft Environmental Assessment, provided dates of the 15-day public comment period, and announced that due to the ongoing COVID-19 pandemic, a hardcopy of the Environmental Assessment would be available on request, and for electronic review on the Navy Region Southwest website (https://www.cnic.navy.mil/navysouthwestprojects). The Draft Environmental Assessment was made available for public review beginning on May 24, 2021 and ending on June 7, 2021. Public comments can be submitted via electronic mail to [NAVFAC_SW_NBPL_PIER5000_INNER_BERTH_EXPANSION_DREDGE@navy.mil] during the 15-day public comment period.

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2 Proposed Action and Alternatives

2.1 Proposed Action

The scope of the Proposed Action includes the proposed dredging and disposal of sediment from the Pier 5000 South Side Inner (SSI) berth expansion area located at Navy Base Point Loma (NBPL, Figure 2-1). The proposed footprint is located in an area previously dredged by the Navy to a depth of -35 feet mean lower low water (MLLW); however, dredging is needed to a design depth of -36.6 feet MLLW plus an additional 2 feet of allowed overdredge depth.

Dredging and sediment disposal would comply with pertinent regulatory programs, including the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), Sections 404 and 401 of the Clean Water Act (CWA), and Section 10 of the Rivers and Harbors Act (RHA). Dredging would occur outside of the endangered California least tern *(Sterna antillarum browni*) nesting season.

2.2 Screening Factors

The CEQ Regulations for Implementing the National Environmental Policy Act (NEPA) provide guidance on the consideration of alternatives to a federally proposed action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and to meet the purpose and need require detailed analysis.

Potential alternatives that meet the purpose and need were evaluated against the following screening factors:

- Must achieve dredging to the required design depth of -36.6 feet MLLW for improved navigation and berthing of large submarines at the Pier 5000 SSI berthing area.
- Must achieve sediment dredging and disposal in accordance with the following natural resource protection controls and programs:
    - San Diego Bay Integrated Natural Resources Management Plan;
    - Clean Air Act General Conformity Rule;
    - Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA);
    - CWA Section 401 and 404, and Rivers and Harbors Act (RHA) Section 10 Regulatory Programs;
    - Coastal Zone Management Act (CZMA);
    - U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) “Green Book” and Inland Testing Manual (ITM); and
    - Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA).

Various alternatives were evaluated against the screening factors. The alternatives considered include:

- No Action Alternative;
- Proposed Action;
- Reduced Dredging Footprint;
- Alternative Locations; and
- Maintenance Dredging.

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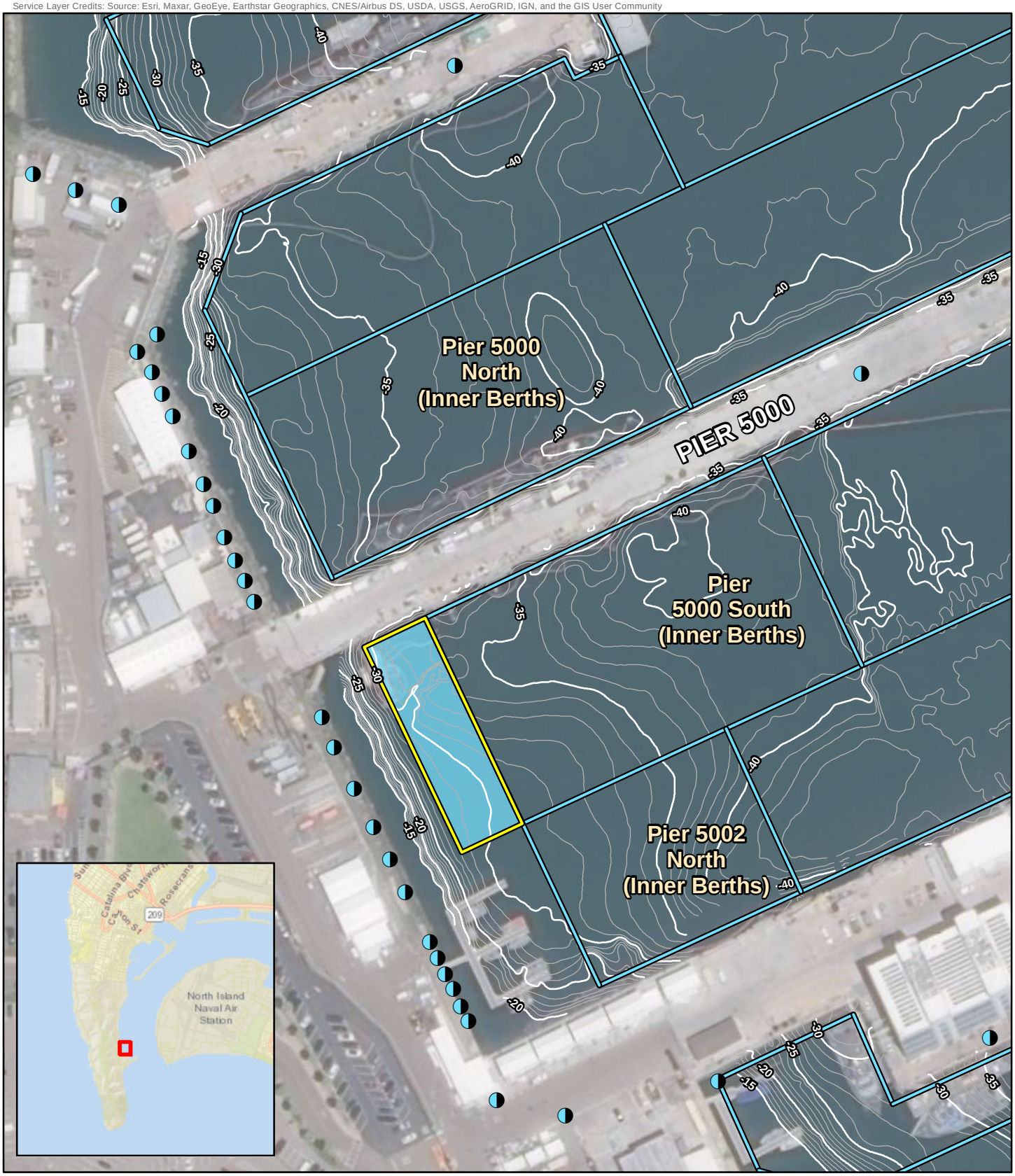

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1 inch = 150 feet

0 75 150 Feet

Storm Sewer Discharge Point

Berthing and Transit Area

Proposed Action Area

Pier 5000 South Inner Berths (SSI) Expansion Footprint

FIGURE 2-1

Project Location
Pier 5000 South Side
Inner Berth Expansion
Naval Base Point Loma, San Diego, CA

2.3 Alternatives Carried Forward for Analysis

Three alternatives are carried forward for detailed analysis in this EA: 1) No Action Alternative; 2) the Proposed Action; and 3) Reduced Dredging Footprint Alternative.

2.3.1 No Action Alternative

Under the No Action Alternative, the Navy would not complete any dredging activities within the Pier 5000 SSI berth expansion area. Without dredging at the Pier 5000 SSI berth expansion area, existing dredge depths and tidal restrictions would continue to limit the ability to accommodate deep-draft submarine configurations due to limited depth pier side. The inadequate depth would continue to limit berthing capacity and configuration alternatives at NBPL.

The No Action Alternative would not meet the purpose and need for the Proposed Action; however, as required by NEPA (32 CFR §1508.25), the No Action Alternative is carried forward for analysis in this EA. The No Action Alternative will be used to analyze the consequences of not undertaking the Proposed Action, not simply to conclude no impact, and will serve to establish a comparative baseline for analysis.

2.3.2 Proposed Action (Preferred Alternative)

The scope of the Proposed Action involves dredging of approximately 6,365 cy of sediment within the 0.44-acre Pier 5000 SSI berth expansion area. The proposed dredging would achieve a design depth of -36.6 feet MLLW plus an additional 2 feet of potential overdredge (see Table 2-1). Future maintenance dredging may be necessary to maintain the design depth requirement of -36.6 feet MLLW.

Table 2-1. Project Area, Estimated Depth, Dredging Volumes for the Proposed Action

Dredging Site	*Area of Proposed Action (square feet)*	*Design Depth (feet MLLW)*	*Estimated Dredge Volume to Design Depth (cy)*	*Estimated Total Volume with 2-foot Over Dredge Allowance (cy)*
Pier 5000 SSI Berth Expansion	19,050	-36.6	4,493	6,365

Notes: SSI = South Side Inner; cy = cubic yards; feet MLLW = feet mean lower low water

Dredging and disposal activities would take an estimated 10 days to complete (James Georgo, Personal Communication 2021) and would occur outside of the California least tern nesting season. Dredging would be completed using a barge-mounted clamshell or backhoe dredge. Dredging activities could occur during daylight hours, based on site-specific conditions. Consistent with a recent dredging project at NBPL in 2016, the average daily dredging and disposal production rate is expected to be approximately 1,350 cy (Alberto Sanchez, Personal Communication 2019). A conservative estimate of 20 workers would be required for the duration of dredging activities to transport, set up, and operate the dredging equipment and sediment transport tugs and barges (Alberto Sanchez, Personal Communication 2019). Barges used for in-water sediment transport would be equipped with electronic tracking devices to document that material releases occurred within approved disposal site boundaries, as specified in the dredging permit.

Under the Proposed Action sediment dredging and disposal would comply with the Navy's project-specific consultations performed under the regulations and guidance documents in Appendix A. Three options were analyzed for sediment disposal for the Proposed Action including beneficial reuse, ocean disposal, or upland disposal at an appropriately permitted landfill. To determine the disposal location, sediments collected from the Proposed Action area were tested for chemical and physical parameters and compared

to results for samples collected in a maintenance dredging area located immediately adjacent to the Proposed Action (Figure 2-2) as well as to sediments collected from the nearshore placement area at Silver Strand Boat Lanes 9 and 10 (Figure 2-3).

Option 1: Nearshore Replenishment – Beneficial Reuse

The *Nearshore Replenishment Option* would involve loading the dredged sediment into barges and transporting it to a Nearshore Replenishment site for beneficial reuse. Beneficial reuse sites considered were the Silver Strand Boat Lanes or a similar beneficial reuse location. The location of the beneficial reuse site relative to NBPL is approximately 6 miles. The round-trip duration from the dredging site to the Silver Strand Boat Lanes beneficial replenishment site would be approximately 10 to 12 hours (Navy Region Southwest [NRSW] 2014). The location of the proposed beneficial reuse site is shown on Figure 2-3. Although the dredged materials for the Proposed Action were ultimately not approved for placement at the Silver Strand Boat Lanes because of sediment grain size characteristics, this alternative is still analyzed within this EA to determine potential impacts of placement to a nearshore beneficial reuse/placement area.

Option 2: Ocean Disposal

The *Ocean Disposal Option* for disposal of sediment associated with the Proposed Action involves loading the dredged sediment into barges and transporting it to LA-5 Ocean Dredged Material Disposal Site (ODMDS). The LA-5 ODMDS is a designated offshore open-water disposal site located on the ridged slope of the continental shelf at a depth of approximately 600 feet, 5.4 nautical miles from Point Loma, off the San Diego Coast. One tug/barge would be loaded with material at the dredge site, while the other is disposing of sediment at LA-5 ODMDS, ensuring that dredging can be completed in a timely manner while complying with LA-5 restrictions prohibiting more than one barge onsite at a time. Round trip from the Pier 5000 project site to LA-5 ODMDS is expected to take about 10 to 12 hours. The ocean disposal of dredged sediment is regulated under Section 103 of the MPRSA and disposal operations would need to comply with permitting and dredging regulations published in 33 CFR Parts 320-330 and 335-338. Dredged materials to be removed under the Proposed Action were approved for disposal at the LA-5 ODMDS by the USACE and USEPA in March 2021; however, the impact of sediment disposal at three alternative locations were evaluated within this EA.

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- Storm Sewer Discharge Point
- Actual Sampling Location (Sampled May 2020)
- Actual Pier 5000 SSI Berth Expansion Sampling Location (Sampled February 2021)
- Berthing and Transit
- Pier 5000 South Side Inner Berths (SSI) Expansion Footprint
- Approved for Unconfined Aquatic Disposal (2020)
- Approved Maintenance Dredge Area
- Proposed Action

1 inch = 150 feet

0 75 150 Feet

FIGURE 2-2

Proposed Action Area and Maintenance Dredging Footprint
Pier 5000 South Side Inner Berth Expansion
Naval Base Point Loma, San Diego, CA

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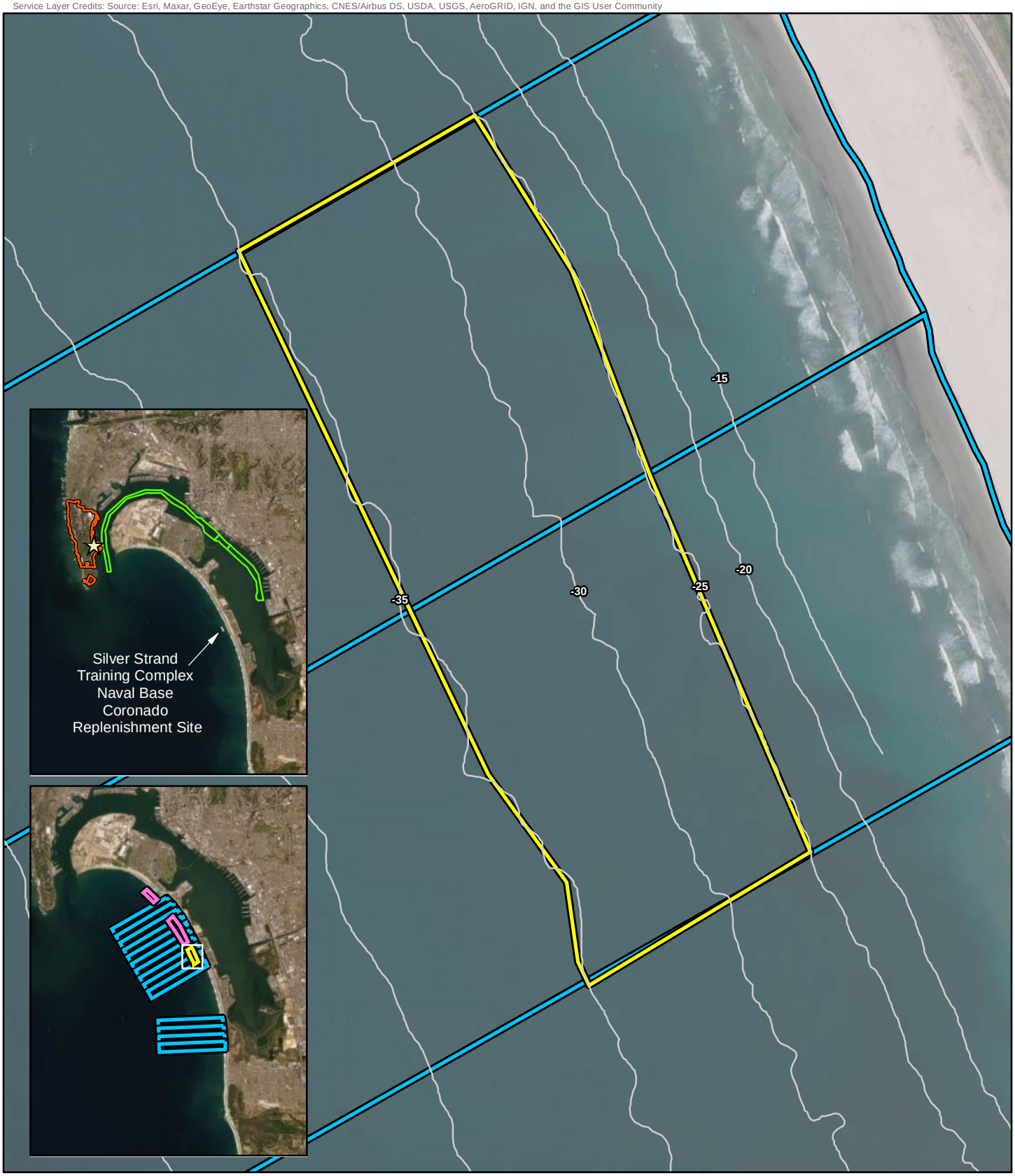

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Nearshore Nourishment Area
Project Placement Area
Silver Strand Boat Lane
Bathymetric Contour
Berthing and Transit Areas
NBPL Base Boundary
Pier 5000 SSI Footprint

1 inch = 500 feet
0 250 500 Feet

FIGURE 2-3

Proposed Beneficial Reuse Site
Silver Strand Boat Lanes
Pier 5000 South Side Inner Berth Expansion
Navy Base Point Loma,San Diego, CA

Option 3: Upland Disposal

The *Upland Disposal Option* would be implemented if it were determined that the sediment was not suitable for either beneficial reuse or ocean disposal. Upland disposal involves transporting dredged sediment via barge across San Diego Bay to an upland confined drying facility (CDF) at Naval Base San Diego (NBSD) or other suitable drying facility. A round trip to that facility would be expected to take about 4 to 6 hours.

Once adequately dried, the sediment would be placed on a dump scow and mixed with a thickening agent. The sediment would then be transferred to a secondary holding site and tested for pH and water content in accordance with applicable landfill requirements and then transported via large trucks to a landfill such as the Otay Landfill or Sycamore Landfill, both of which are permitted Class III Landfills (Otay Landfill USEPA Facility Registration System ID 110000832243; Sycamore Landfill USEPA Facility Registration System ID 110070092140). Otay Landfill is located at 1700 Maxwell Road in Chula Vista, California, approximately 12.2 miles from NBSD and Sycamore Landfill is located at 8514 Mast Blvd in Santee, California 92071, approximately 20.2 miles from NBSD.

Of the permitted maximum disposal rate of 6,700 tons per day, the Otay landfill has the capacity to accept 1,000 tons per day of dried dredged sediments while Sycamore Landfill can accept up to 700 tons per day of either dry or wet dredged sediments. For a fleet of 12-cy-capacity trucks, each carrying approximately 50,000 pounds (25 tons), the maximum number of trucks per day would be limited to 40 one-way sediment haul trips from the CDF to the Otay Landfill and 28 one-way sediment haul trips to the Sycamore Landfill.

Although the dredged materials for the Proposed Action were approved for unconfined aquatic disposal at the LA-5-ODMDS in March 2021, this alternative was still analyzed within this EA to determine potential impacts of placement to an upland placement location.

2.3.3 Reduced Dredging Footprint Alternative

The scope of the Reduced Dredging Footprint Alternative would involve reducing the length of the Pier 5000 SSI berth expansion dredging area by 20 feet (from 75 to 55 feet). The required design depth for the project would remain at -36.6 feet MLLW with an additional 2 feet of overdredge allowance making the dredge footprint for this alternative approximately 0.32 acres (13,970 sf). Dredging of this area would result in approximately 4,950 cy of sediment to be disposed of at an approved site. The Reduced Dredging Footprint Alternative would limit the maneuverability and access capacity of submarines at Pier 5000 relative to the Proposed Action (Preferred Alternative); however, implementation of this alternative would meet the basic purpose and need for the Proposed Action to some degree by accommodating berthing of large submarines and reducing overall project costs.

The disposal location for dredged sediment was determined by sediment sampling and laboratory analysis and following regulatory guidance for the options referenced in the Proposed Action in Section 2.3.2.

Table 2-2. Comparison of Alternatives

Alternative	*Dredge Footprint (square feet)*	*Dredge Depth (feet)*	*Approximate Dredge Volume (cy)*	*Aquatic Disposal Location*
Proposed Action	19,050	To -36.6 feet MLLW (+2 feet overdredge)	6,365	Three options: Nearshore Beneficial Reuse LA-5 Ocean Disposal Upland Disposal
Reduced Dredging Footprint Alternative	13,970	To -36.6 feet MLLW (+2 feet overdredge)	4,950	Three options: Nearshore Beneficial Reuse LA-5 Ocean Disposal Upland Disposal
No Action Alternative	None	None	None	None

Notes: cy = cubic yards

2.4 Alternatives Considered but not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward, for detailed analysis in this EA because they do not meet the purpose and need for the Proposed Action and do not satisfy the reasonable alternative screening factors presented in Section 2.2, *Screening Factors*.

2.4.1 Alternative Dredging Location

Alternate dredging locations that would improve berthing at Pier 5000 are not available.

2.4.2 Maintenance Dredging

Large submarines currently berth at Pier 5000; however, the required design depth for improved navigation and berthing large submarines within the Pier 5000 SSI berth expansion area is -36.6 feet MLLW (Jesse Gotz, Personal Communication 2020). As previously stated, previous dredging at the project site has occurred to a depth of -35 feet MLLW. Maintenance dredging would limit removal of sediment to -35 feet MLLW or shallower. This alternative does not meet the first Alternative Selection Criterion (Required Design Depth) listed in Section 2.2, *Screening Factors* and was therefore eliminated from further consideration.

2.5 Best Management Practices Included in Proposed Action

This section presents an overview of the best management practices (BMPs) that would be required for the Proposed Action (Preferred Alternative) or any of the action alternatives. BMPs are existing policies, practices, and measures that the Navy has adopted to reduce the environmental impacts of designated activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing or reducing/eliminating impacts, BMPs are distinguished from potential mitigation measures because BMPs are: 1) existing requirements for the Proposed Action; 2) ongoing, regularly occurring practices; or 3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. Table 2-3 includes a list of BMPs. Mitigation measures are discussed separately in Chapter 3, *Affected Environment and Environmental Consequences*.

BMPs include actions required by federal or state law or regulation. The recognition of the general management measures prevents unnecessarily evaluating impacts that are unlikely to occur.

Table 2-3. Best Management Practices

BMP	*Description*	*Impacts Reduced/Avoided*
California Least Tern Avoidance	All work would occur between September 16 and March 31 to avoid the nesting season of the endangered California least tern.	Potential impacts to California least tern.
Biological Monitoring	All in-water Project-related activities will be monitored out to a distance of 427 feet (130 meters). If a sea turtle or marine mammal is seen within the vicinity of active Project activities, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 66 feet (20 meters) from a sea turtle or marine mammal. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or marine mammal is seen within a 66 foot (20 meters) radius of the equipment. No discharge of dredge material at the disposal site will occur if a sea turtle or marine mammal is within 328 feet (100 meters) of the dump scow. Activities may not resume until the protected species has departed the Project/disposal area of its own volition, or has not been sighted for 15 minutes.	Potential impacts to sensitive species.
Green Sea Turtle Protection	Operations would be temporarily halted if green sea turtles are observed in transit or occupying the dredging or disposal site. If individuals are observed, operations would be suspended for at least 15 minutes following observations that the individual has vacated the area.	Potential impacts to green sea turtle.
Green Sea Turtle Monitoring (clamshell dredge/daytime operation)	Dredging contractor would designate a Green Sea Turtle monitor and conduct Green Sea Turtle monitoring during all operations.	Potential impacts to green sea turtle.
Marine Mammal Monitoring	Dredging contractor would designate a Marine Mammal Monitor and would conduct Marine Mammal Monitoring during all operations.	Potential impacts to marine mammals.

Table 2-3. Best Management Practices (Continued)

BMP	*Description*	*Impacts Reduced/Avoided*
Dredging would only occur during daylight hours.	All work shall occur during daylight hours that allow for sighting of protected species within the defined monitoring zones of the project and disposal areas (66 foot [20 meter] shutdown zone, 328 foot [100 meter] dump scow disposal shutdown zone, and 427 foot [130 meter] monitoring zone). All construction personnel are responsible for observing water-related activities for the presence of sea turtles and marine mammals. For transiting vessels, monitoring for marine mammals and sea turtles shall ensure that within 328 feet (100 meters) of the barge and disposal equipment species are not present. Any collisions would be reported to the standing NMFS coordinator immediately.	Potential impacts to sensitive species.
Pre-Construction *Caulerpa* Survey	A pre-construction *Caulerpa* survey would occur for both sediment collection and dredging activities per the *Caulerpa* Control Protocol.	Potential spread of invasive *Caulerpa* associated with transport of sediment testing collections or dredged material.
Vessel Speed Limits	Vessel operators would follow designated speed zones to and from the project area and selected disposal site. All vessels shall operate at “no wake/idle” speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a 4-foot clearance from the bottom. All vessels shall preferentially follow deep-water routes (e.g., marked channels) wherever possible.	Potential water quality impacts associated with sediment spillage from barges/scows.
Vessel Anchorage Limits	Vessel operators shall not drop anchors/spuds within or directly adjacent to identified populations of eelgrass.	Potential impact damage to sensitive eelgrass beds.
Prohibition on Hydraulic Dredging Methods	Dredging contractor shall not employ hydraulic dredging methods and shall be limited to other methods including but not limited to clamshell dredging.	Potential impacts to green sea turtle.

Table 2-3. Best Management Practices (Continued)

BMP	*Description*	*Impacts Reduced/Avoided*
Dredge Direction	Dredge passes shall start on the berth near the shoreline and move toward deeper water.	Potential water quality impacts.
Vessel Grounding Prevention	Vessel draft and movements shall be controlled by the contractor to limit potential for grounding.	Potential water quality impacts associated with sediment disturbance or material spill due to vessel grounding incidents.
Spillage Control	During transport and handling of sediment, containment measures shall be used to minimize spillage.	Potential water quality impacts associated with sediment spillage outside of selected disposal sites.
Surface Debris Survey	The contractor shall be required to conduct a surface debris survey prior to dredging.	Potential water quality impacts associated with transport and deposition of non-dredge material.
Global Positioning System (GPS) Locator Requirement	The contractor shall use a GPS to ensure that material is removed from the correct locations and ensure that sediment releases only occur within designated site boundaries.	Potential water quality impacts associated with dredge and transport of materials outside the project area.
Dredge Depth Limit and Area Limits	The contractor shall not be allowed to excavate beyond the overdredge depth or outside of the project area limits.	Potential water quality impacts associated with dredge and transport of materials outside the project area.
Dredge Bucket Swing Limit	The dredge bucket shall be swung directly to the barge after it breaks the water surface using the minimal swing distance	Potential water quality impacts associated with sediment release at dredge site due to prolonged transit of dredge bucket to barge/scow.
Bottom Stockpiling and Dredging Limit	No bottom stockpiling or multiple bites of the clamshell bucket shall be allowed.	Potential water quality impacts associated with unnecessary sediment disturbance at dredge site.
Overdredge Limit	Overdredging at the bases of the slope shall be limited.	Potential water quality impacts associated with over-steepening of the slope resulting in unnecessary sediment movement/sliding or impacts to adjacent structural stability.
Dredge Bucket Fill Limit	The dredge bucket shall not be overfilled.	Potential water quality impacts associated with sediment spillage from overfilled dredge bucket.
Barge/Scow Maximum Capacity	The barge/scow shall not be filled beyond 80 percent capacity.	Potential water quality impacts associated with sediment spillage outside of selected disposal sites
Dredge Material Control	Material shall not be allowed to leak from the discharge pipeline or leak	Potential water quality impacts associated with unintended

Table 2-3. Best Management Practices (Continued)

BMP	*Description*	*Impacts Reduced/Avoided*
	from the bins or overtop the walls of the barge/scow.	sediment release outside of selected disposal sites.
Offloading Spill Control	During offloading, metal spill aprons, upland spill control curbing and collection systems, and other spill control measures would be implemented. If a bucket is used, a dribble apron would be used.	Potential water quality impacts associated with uncontrolled deposition of sediment during offloading operations.
Spill/Sheen Response Materials	Surface booms, oil-absorbent pads, and similar materials would be maintained onsite to contain any sheen that may occur on the surface of the water during dredging.	Potential water quality impacts associated with spill/sheen.

3 Affected Environment and Environmental Consequences

This chapter of the Environmental Assessment (EA) presents a description of the environmental resources and baseline conditions that could be affected from implementing any of the alternatives and an analysis of the potential direct and indirect effects of each alternative.

All potentially relevant environmental resource areas were initially considered for analysis in this EA. In compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, and Navy instructions for implementing NEPA; the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impact.

"Significant," as used in NEPA, requires considerations of both context and intensity. "Context" means that the significance of an action must be analyzed under several perspectives such as society as a whole, the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant. "Intensity" refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the context, the less intense a potential impact needs to be in order to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

The potential impacts to Geological Resources, Cultural Resources, Land Use, Visual Resources, Airspace, Infrastructure, Public Health and Safety, and Socioeconomics and Environmental Justice are considered to be negligible or non-existent so they were not analyzed in detail in this focused EA. Brief descriptions of why each category was dismissed is included in Appendix D.

3.1 Air Quality

This discussion of air quality includes criteria pollutants, standards, sources, permitting, and greenhouse gases (GHGs). Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors, including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

The main pollutants of concern considered in this air quality analysis include volatile organic compounds (VOCs), ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter less than or equal to 10 microns in diameter (PM_{10}), and particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$). Although VOCs and NO_x (other than nitrogen dioxide [NO_2]) have no established ambient standards, they are important as precursors to O_3 formation.

The Region of Influence (ROI) for this air quality analysis is the entire San Diego Air Basin (SDAB), which encompasses San Diego County.

3.1.1 Regulatory Setting

3.1.1.1 Criteria Pollutants and National Ambient Air Quality Standards

The principal pollutants defining the air quality, called "criteria pollutants," include CO, sulfur dioxide (SO_2), NO_2, O_3, PM_{10}, $PM_{2.5}$, and lead. CO, SO_2, lead, and some particulates are emitted directly into the atmosphere from emissions sources. O_3, NO_2, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes.

Under the CAA, USEPA has established National Ambient Air Quality Standards (NAAQS) for these pollutants (40 CFR Part 50). NAAQS are classified as primary or secondary. Primary standards protect against adverse health effects; secondary standards protect against welfare effects, such as damage to farm crops and vegetation and damage to buildings. Some pollutants have both short- and long-term standards. Short-term standards are designed to protect against acute, or short-term, health effects, while long-term standards were established to protect against chronic health effects.

Areas that are and have historically been in compliance with the NAAQS are designated as attainment areas. Areas that violate a federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment.

The CAA requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans (SIPs), are developed by state and local air quality management agencies and submitted to USEPA for approval.

Table 3-1 lists applicable California and National air quality standards for the NBPL Pier 5000 SSI berth expansion dredging.

3.1.1.2 Mobile Sources

Hazardous air pollutants emitted from mobile sources are called Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and nonroad equipment that are known or suspected to cause cancer or other serious health and environmental effects. Unlike the criteria pollutants, there are no NAAQS for hazardous air pollutants. The primary control methodologies for these pollutants for mobile sources involve reducing their content in fuel and altering the engine operating characteristics to reduce the volume of pollutant generated during combustion.

Table 3-1. California and National Ambient Air Quality Standards

Pollutant	*Averaging Time*	*California Standards(1)*	*National Standards(2)*	
			Primary	*Secondary*
O_3	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary Standards
	1-hour	0.09 ppm (180 µg/m^3)	--	
CO	8-hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)	---
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
NO_2	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m3)	---
SO_2	Annual Arithmetic Mean	---	0.30 ppm (for certain areas)	---
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	---
	3-hour	---	---	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	---
PM_{10}	Annual Arithmetic Mean	20 µg/m^3	---	Same as Primary Standard
	24-hour	50 µg/m^3	150 µg/m^3	
$PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
	24-hour	No Separate Standard	35 µg/m^3	Same as Primary Standard
Sulfates	24-hour	25 g/m^3	---	---
Lead	30-day average	1.5 µg/m^3	---	---
	Rolling 3-month average	---	0.15 µg/m^3	---
H_2S	1-hour	0.03 ppm (42 µg/m^3)	---	---
Vinyl Chloride (chloroethene)	24-hour	0.01 ppm (26 µg/m^3)	---	---

Notes:
(1) CO, SO_2 (1- and 24-hour) NO_2, O_3, PM_{10}, and visibility reducing particles standards are not being exceeded. All other California Standards are not to be equaled or exceeded.
(2) Not to be exceeded more than once a year except for annual standards.
Source: California Air Resources Board (CARB) 2016.

Abbreviations:
--- = Not Applicable
µg/m^3 = microgram(s) per cubic meter
CAAQS = California Ambient Air Quality Standards
CO = carbon monoxide
mg/m^3 = milligram(s) per cubic meter
NAAQS = National Ambient Air Quality Standards
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter
PM_{10} = particulate matter less than or equal to 10 microns in diameter
ppb = part(s) per billion
ppm = part(s) per million
SO_2 = sulfur dioxide
H_2S = hydrogen sulfide

3.1.1.3 General Conformity

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in ton[s] per year [tpy]) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question.

A conformity applicability analysis is the first step of a conformity evaluation and assesses whether a federal action must be supported by a conformity determination. This assessment is typically done by quantifying projected applicable direct and indirect emissions from implementation of the federal action. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emissions thresholds, then the conformity evaluation process is completed. *De minimis* threshold emissions are presented in Table 3-2.

Table 3-2. General Conformity *de minimis* Levels Pursuant to 40 CFR §93.153(b)(1)

Pollutant	*Area Type*	*Tons per year (tpy)*
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide, SO_2, and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$ Direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

Abbreviations:
CFR = Code of Federal Regulations
CO = carbon monoxide
NO_2 = nitrogen dioxide
NO_x = nitrogen oxides
O_3= ozone
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter
PM_{10} = particulate matter less than or equal to 10 microns in diameter
SO_2 = sulfur dioxide
VOC = volatile organic compound[1]

[1] The State of California refers to reactive organic gases (ROG) rather than VOC in some of its ozone-related SIP submissions. ROG and VOC refer essentially to the same set of chemical constituents, and for the sake of simplicity, this set of gases as will be referred to as VOC in this EA document (USEPA, 2020).

3.1.1.4 Greenhouse Gases

GHGs are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

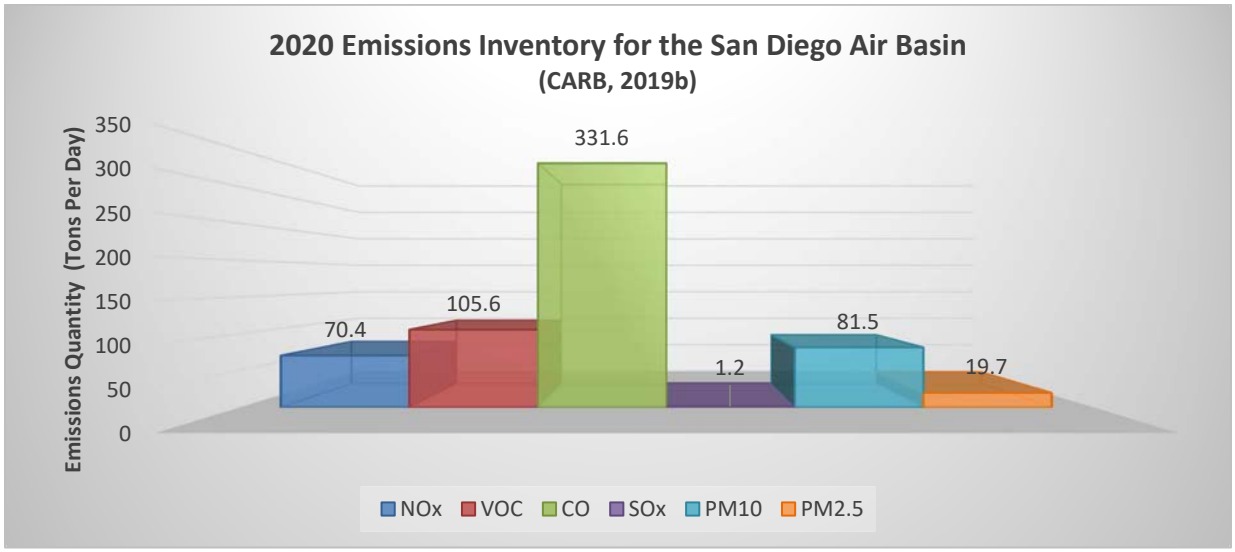
USEPA issued the Final *Mandatory Reporting of Greenhouse Gases Rule* on September 22, 2009. GHGs covered under the Final *Mandatory Reporting of Greenhouse Gases Rule* are carbon dioxide (CO_2), methane, nitrogen oxide (NO_x), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other fluorinated gases including nitrogen trifluoride and hydrofluorinated ethers. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. The equivalent CO_2 rate is calculated by multiplying the emissions of each GHG by its global warming potential and adding the results together to produce a single, combined emissions rate representing all GHGs. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions as CO_2e are required to submit annual reports to USEPA.

3.1.2 Affected Environment

NBPL is in San Diego County, which is within the SDAB. SDAPCD is responsible for implementing and enforcing federal and state air quality regulations in San Diego County. San Diego has been determined by USEPA to be a serious nonattainment area for 8-hour O_3 under the 2008 and 2015 standards, and will soon be redesignated as a severe nonattainment area. The County is classified as a *maintenance* area for CO. San Diego County is classified by USEPA as in attainment/unclassified for all other criteria pollutants. Nevertheless, because San Diego County is in nonattainment for O_3, a General Conformity evaluation is required.

Figure 3-1 shows the most recent emissions inventory (from 2020)[2] for SDAB.

[2] The 2020 estimated annual average emissions represent projected data based off the 2016 SIP Emissions Projection Data.



Notes: VOC and NO_x emissions are used to represent O_3 generation because they are precursors of O_3. The 2020 estimated annual average emissions represent projected data based off of the 2016 SIP Emissions Projection Data.

Figure 3-1. 2020 Emissions Inventory for the San Diego Air Basin (CARB, 2019b)

Emission sources associated with the existing use of NBPL include civilian and military personal vehicles, commercial and military vehicles, marine vessel engines, tactical support equipment, small stationary sources, and ongoing construction activities. Recent annual criteria pollutants emissions for the closest proximity monitoring station to NBPL (San Diego-Beardsley Street Monitoring Station located just south of downtown San Diego near the intersection of Interstate 5 [I-5] and the Coronado Bridge) are shown in Table 3-3.

Table 3-3. Representative Air Quality Data for NBPL (2015–2019) from San Diego Beardsley Street Monitoring Station[3]

Air Quality Indicator	*2015*	*2016*	*2017*	2018	*2019*
Ozone (O_3)					
Days State 1-hour Standard Exceeded (0.09 ppm)	0	0	0	0	0
Days Federal 8-hour Standard Exceeded (0.075 ppm)[a]	0	0	0	0	0
Days State 8-hour Standard Exceeded (0.07 ppm)	0	0	2	0	0
Maximum 1-hour (ppm)	0.071	0.063	0.093	0.089	0.072
Maximum 8-hour (ppm)	0.065	0.053	0.072	0.067	0.061
Carbon monoxide (CO)[b]					
Days Federal 8-hour Standard Exceeded (35 ppm)	0	NA	NA	NA	NA
Days State 8-hour Standard Exceeded (20 ppm)	0	NA	NA	NA	NA
Maximum 1-hour (ppm)	2.6	3.0	2.7	2.6	2.2
Maximum 8-hour (ppm)	1.81	NA	NA	NA	NA
Nitrogen dioxide (NO_2)					
Days Federal 1-hour Standard Exceeded (0.10 ppm)	0	0	0	0	0
Days State 1-hour Standard Exceeded (0.18 ppm)	0	0	0	0	0
Maximum 1-hour (ppm)	0.065	0.072	0.075	0.062	0.073
Annual Average (ppm)	0.013	0.014	0.013	0.014	NA
Sulfur dioxide (SO_2)[c]					
Days State 24-hour Standard Exceeded (0.04 ppm)	NA	NA	NA	NA	NA
Maximum 24-hour (ppm)	NA	NA	NA	NA	NA
Annual Average (ppm)	NA	NA	NA	NA	NA
Particulate matter less than or equal to 10 microns in diameter (PM_{10})					
Days State 24-hour Standard Exceeded (50 µg/m^3)	0	1	0	1	1
Days Federal 24-hour Standard Exceeded (150 µg/m^3)	0	0	0	0	0
Maximum Daily – Federal (µg/m^3)	45	90	40.0	53.0	49.0
Maximum Daily – State (µg/m^3)	47	92	41.0	54.0	51.0
Federal Annual Average (µg/m^3)	21.8	24.9	23.3	23.0	21.9
State Annual Average (µg/m^3)	22.2	25.4	23.8	23.2	NA
Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)					
Days Federal 24-hour Standard Exceeded (35 µg/m^3)	1	1	1	0	0
Maximum Daily – Federal (µg/m^3)	39.8	37.4	36.7	33.4	34.4
Maximum Daily – State (µg/m^3)	39.8	37.4	37.2	44.9	34.4
Federal Annual Average (µg/m^3)	11.0	10.3	10.1	9.3	NA
State Annual Average (µg/m^3)	NA	10.4	10.2	10.2	NA

Source: CARB 2019a; SDAPCD 2016

Notes: NA = not available; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[a] On 1 October 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[b] Eight-hour carbon monoxide averages are available at San Diego Beardsley Street Station between 2005 and 2012.

[c] The SO_2 monitor was decommissioned on 30 June 2011.

[3] Beardsley Street monitoring station has been closed. Sherman Elementary School monitoring station is the nearest active station to the project site. As of the preparation of this EA, no 2020 air quality data is available.

3.1.3 Environmental Consequences

Significant air quality impacts would occur if implementation of any of the alternatives would directly or indirectly:

- Expose people to localized (as opposed to regional) air pollutant concentrations that violate state or federal ambient air quality standards;
- Cause a net increase in pollutant or pollutant precursor emissions that exceeds relevant emission significance thresholds (e.g., CAA conformity *de minimis* thresholds); or
- Conflict with adopted air quality management plans, policies, or programs.

Impacts would also be potentially significant with the NBPL region if project emissions exceed the thresholds that trigger a conformity determination under Section 176(c) of the 1990 CAA (i.e., 100 tons per year of VOC, NO_x, or CO).

3.1.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline air quality. Therefore, no significant impacts to air quality or air resources would occur with implementation of the No Action Alternative.

3.1.3.2 Proposed Action Alternative (Preferred Alternative) Potential Impacts

Implementation of the Proposed Action would include dredging of underwater sediments at the Pier 5000 SSI berth expansion area, loading of the dredge material onto barges, transport of dredged material to disposal locations via barge, and direct disposal at the offshore LA-5 ODMDS. If the dredged material were determined to be not suitable for ocean disposal, the dredged material would be dried at the NBSD CDF and then transported via truck to a permitted upland disposal site at either the Otay Landfill or Sycamore Landfill, located 12.2 and 20.1 miles from the NBSD CDF, respectively. Air emissions from the proposed project would include operation of a motorized dredge and crane, barge, and tractor-trailer truck for dried sediment transport.

Assumptions

Air quality impacts from dredging, transportation, and sediment disposal activities would occur from combustion emissions from fossil-fuel-powered equipment. Because of the nature of the project, fugitive dust is not a concern. Dredging activities would not generate fugitive dust because marine sediments that would be dredged are wet; further, sediments used for beneficial reuse would be placed in offshore waters and not directly onto beaches or other dryland locations, and dried sediments transported via truck would be either wetted or covered for transportation to the Otay Landfill or Sycamore Landfill. A summary of equipment likely to be used in the air emissions calculations is included in Appendix B. It is assumed that all dredging and in-water disposal activities would be completed over a 10-day period; however, in the unlikely event that upland disposal is required, disposal may take an additional two to three months to allow for sediment drying.

Impacts

Table 3-4 presents estimated dredging and sediment disposal emissions with implementation of the Proposed Action. Estimated emissions would be below the *de minimis* thresholds for CAA conformity. Therefore, implementation of the Proposed Action would not result in significant impacts to air quality.

Table 3-4. Proposed Action Emissions and Comparison to *de minimis* Thresholds

Construction Year	*Emissions (tpy)*					
	CO	*VOC*	*NO_x*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Proposed Action – Nearshore Replenishment (Silver Strand Boat Lanes)						
2021	0.65	0.16	1.78	0.00	0.06	0.06
de minimis Threshold/Major Source Threshold	100	50	50	100	70	70
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Proposed Action – Ocean Disposal Option (LA-5 ODMDS)						
2021	0.65	0.16	1.78	0.00	0.06	0.06
de minimis Threshold/Major Source Threshold	100	50	50	100	70	70
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Proposed Action – Upland Disposal Option (Otay or Sycamore Landfill)						
2021	1.37	0.24	2.56	0.00	0.11	0.11
de minimis Threshold/Major Source Threshold	100	50	50	100	70	70
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: tpy = tons per year. San Diego Is currently designated as a serious nonattainment area, however it may soon be redesignated as a severe nonattainment area. This redesignation to severe would reduce the *de minimis* thresholds for VOC and NOx to 25 tpy.

General Conformity

The estimated dredging emissions associated with the Proposed Action would be below *de minimis* thresholds for CAA conformity. Therefore, the Proposed Action would conform to the SDAB SIP and would not trigger a conformity determination under Section 176(c) of the CAA. The Navy has prepared a Record of Non-Applicability (RONA) for CAA conformity (refer to Appendix B) in accordance with Office of the Chief of Naval Operations Instruction (OPNAVINST) 5090.1E and the Navy guidance for compliance with the CAA General Conformity Rule, dated 21 December 2018. Because the emissions associated with implementation of the Proposed Action would not exceed the *de minimis* thresholds, there would be no significant adverse impacts to air quality.

Greenhouse Gases

Implementation of the Proposed Action would contribute directly to emissions of GHGs from the combustion of fossil fuels. Dredging, transportation, and disposal activities would generate approximately between 1,209 and 1,578 metric tons of carbon dioxide equivalent (CO_2e) if the proposed activities occurred during 2021. Once the project is completed, no changes would occur to NBPL facility operations character or to GHG. This limited amount of emissions would not likely contribute to global warming to any discernible extent. Therefore, implementation of the Proposed Action would not result in significant impacts specific to GHG emissions.

3.1.3.3 Reduced Dredging Footprint Alternative Potential Impacts

Impacts associated with the Reduced Dredging Footprint Alternative would be similar to those for the Proposed Action, except that the dredged volume would be approximately 4,950 cubic yards (cy), and the dredging duration would be decreased to 7 days. As presented in Table 3-4, estimated emissions from the dredging and sediment disposal of the Reduced Dredging Alternative would not result in significant impacts to air quality. See Appendix B for Reduced Dredging Footprint calculations.

3.2 Water Resources

This discussion of water resources includes marine waters and shorelines. This section also discusses the physical characteristics of marine waters, wetlands, etc. Marine wildlife and vegetation are addressed in Section 3.3 *Marine Biological Resources*. Definitions of water resources are described in Appendix D.

3.2.1 Regulatory Setting

The CWA establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES) program, on the amounts of specific pollutants that can be discharged into surface waters to restore and maintain the chemical, physical, and biological integrity of the water. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., stormwater) of water pollution.

The California NPDES stormwater program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more to obtain coverage under an NPDES Construction General Permit for stormwater discharges. Construction or demolition that necessitates an individual permit also requires preparation of a Notice of Intent (NOI) to discharge stormwater and a Stormwater Pollution Prevention Plan that is implemented during construction. As part of the 2010 Final Rule for the CWA, titled *Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category*, activities covered by this permit must implement non-numeric erosion and sediment controls and pollution prevention measures.

Wetlands are currently regulated by USACE under Section 404 of the CWA as a subset of all “waters of the U.S.” Waters of the U.S. are defined as 1) traditional navigable waters; 2) wetlands adjacent to navigable waters; 3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow perennially or have continuous flow at least seasonally (e.g., typically 3 months); and 4) wetlands that directly abut such tributaries under Section 404 of the CWA, as amended, and are regulated by USEPA and USACE. The CWA requires that California establish a Section 303(d) list to identify impaired waters and establish TMDLs for the sources causing the impairment.

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into wetlands and other Waters of the U.S. Any discharge of dredge or fill into Waters of the U.S. requires a permit from USACE. Section 10 of the Rivers and Harbors Act provides for USACE permit requirements for any in-water construction. USACE and some states require a permit for any in-water construction. Permits are required for construction of piers, wharfs, bulkheads, pilings, marinas, docks, ramps, floats, moorings, and like structures; construction of wires and cables over the water, and pipes, cables, or tunnels under the water; dredging and excavation; any obstruction or alteration of navigable waters; depositing fill and dredged material; filling of wetlands adjacent or contiguous to waters of the U.S.; construction of riprap, revetments, groins, breakwaters, and levees; and transportation of dredged material for dumping into ocean waters.

The Coastal Zone Management Act of 1972 (CZMA) provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. Actions occurring within the coastal zone commonly have several resource areas that may be relevant to the CZMA.

Executive Order 11990, *Protection of Wetlands*, requires that federal agencies adopt a policy to avoid, to the extent possible, long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative.

Executive Order 11988, *Floodplain Management*, requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development unless it is the only practicable alternative. Flood potential of a site is usually determined by the 100-year floodplain, which is defined as the area that has a one percent chance of inundation by a flood event in a given year.

3.2.2 Affected Environment

This section describes existing conditions for each category under Water Resources at NBPL. The proposed dredging comprises in-water / marine activities only; no coastal or upland ground-disturbing activities are proposed. Further, the Proposed Action would occur in areas characterized as open water habitat. No wetlands occur within the proposed dredge footprint. Therefore, there is no potential for direct or indirect impacts to occur related to groundwater or surface quality or wetlands.

3.2.2.1 Bathymetry and Circulation

Bathymetry at the project site has been altered by filling and dredging. Dredging projects conducted between 1935 and 1960 shows that the most dredging activities at NBPL occurred in 1940 to a depth of -36 feet MLLW (Peeling 1975). The most recent dredging activities at NBPL occurred in 2014 and achieved a bottom depth of -40 feet MLLW. The local sediments are associated with the Bay Point Formation composed of native material that was deposited in the San Diego area near the end of the last ice age (more than 10,000 years ago) (USACE 2009). Sediments collected immediately adjacent to the Proposed Action area generally consist of gravel, sand, silt, and clay and were classified as silty sand (NAVFAC SW 2020a). This grain size is partially attributed to the high velocity current that the dredge footprint is subject to which scour the area of finer grained sediments. Sediment that would be dredged under the Proposed Action is comprised primarily of silt and deeper sediments that would be left in place are comprised of coarse sand, similar to the adjacent maintenance dredging area (NAVFAC SW 2021).

Circulation within San Diego Bay is affected by the Bay's crescent shape and narrow bay mouth, tides, and seasonal salinity and temperature variations (Port of San Diego 2007). The Bay can be divided into four regions based upon circulation characteristics. The Proposed Action is in the "North Bay" or the marine region that extends from the Bay mouth to the area offshore downtown San Diego. Tidal action has the greatest influence on circulation in this area where Bay water is exchanged with sea water over a period of two to three days (Port of San Diego 2007).

San Diego Bay has mixed diurnal/semi-diurnal tides, with the semi-diurnal component being dominant (Largier 1995). The interaction between these two types of tides is such that the higher high tide occurs before the lower low tide, creating the strongest currents on the large ebb tide (Largier 1995). The tidal range (difference between mean lower low water [MLLW] and mean highest high water) is about 5.5 feet (Largier 1995). In general, tidal currents are strongest near the Bay mouth, with maximum velocities of

1.6 to 3.3 feet per second (Largier 1995). Tidal current direction generally follows the center of the Bay channel (Chadwick et al. 1999). Residence time for water in the Bay increases from approximately 5 to 20 days in mid-bay to over 40 days in the South Bay (Chadwick et al. 1999). During an average tidal cycle, about 13 percent of the water in the Bay mixes with ocean water and then moves back into the Bay (Port of San Diego 2007). The complete exchange of all the water in the Bay can take 10 to 100 days, depending on the amplitude of the tidal cycle (Port of San Diego 2007). Tidal flushing and mixing are important in maintaining water quality within the Bay. The tidally induced currents regulate salinity, moderate water temperature, and disperse pollutants (Port of San Diego 2007).

3.2.2.2 Marine Surface Waters

San Diego Bay is a narrow, crescent-shaped natural embayment, oriented northwest-southeast with an approximate length of 15 miles (Port of San Diego 2007). The width of the Bay ranges from 0.2 to 3.6 miles, and depths range from -74 feet MLLW near the tip of Ballast Point to less than 4 feet (Merkel & Associates, Inc. 2009a). Approximately half of the Bay is less than 15 feet deep and most of it is less than 50 feet deep (Merkel & Associates, Inc. 2009a). Prior to the 1960s, San Diego Bay was one of the most polluted harbors in the world because of more than 70 years of discharge of raw sewage and industrial waste as the population of San Diego increased and became a major harbor for the Navy and civilian commerce (Chadwick et. al. 1999). In 1963, the City of San Diego constructed its Wastewater Treatment Plant on the western side of the Point Loma peninsula to properly treat sanitary sewage before ocean discharge via an offshore pipeline. Use of the treatment plant and elimination of industrial discharges in the 1970s resulted in rapid water quality improvements in the Bay (Port of San Diego 2007).

Water temperature in San Diego Bay ranges from 15.1 to 26.1 degrees Celsius. This range can be attributed to thermoclines exhibited in deeper industrial/port waters, which are typical of this geographic region (Amec Foster Wheeler Environment & Infrastructure, Inc. [Amec Foster Wheeler][4] 2016). Measured pH values range from 6.80 to 8.03 throughout the Bay (low pH values noted but verified with calibrated field meters). Dissolved oxygen levels have an average of approximately 7.6 milligrams per liter (mg/L) and range from 0.80 to 8.50 mg/L. Light transmittance ranges from 22.5 to 79.5 percent. Levels of dissolved oxygen and light transmittance tend to decrease with depth and known factors for a decline in measured values, including reduced flushing and natural stratification (Amec Foster Wheeler 2016).

Surface water chemistry is analyzed by the Regional Harbor Monitoring Program (RHMP) using primary and secondary indicators, including total and dissolved levels of copper (primary), and total and dissolved zinc and nickel (secondary). Copper concentrations in the Bay show improvement in comparison with a historical baseline, and average copper concentrations do not exceed the California Toxics Rule (CTR) threshold of 5.8 micrograms per liter (µg/L) total and 4.8 µg/L dissolved. Less than 20 percent of measurements throughout the Bay still exceed the CTR threshold. Both total and dissolved zinc and nickel concentrations are well below CTR threshold values used for RHMP. All other dissolved and total metals have concentrations below their respective acute and chronic CTR thresholds (Amec Foster Wheeler [Wood] 2016). Polycyclic aromatic hydrocarbon (PAH) concentrations are also below their respective CTR threshold values (Amec Foster Wheeler 2016).

[4] Amec Foster Wheeler is now known as Wood Environment & Infrastructure Solutions, Inc. (Wood).

Turbidity is a measure of water clarity or murkiness and can be caused by suspended sediments transported in runoff or increased algal/bacterial growth (Tierra Data Inc. 2010). Turbidity can also be created by natural and manmade resuspension of bottom sediments. Increased turbidity reduces the amount of light available for plant growth underwater, so it can affect the ability of the Bay to support living organisms (Tierra Data Inc. 2010). Turbidity in San Diego Bay varies, depending on the tides, seasons, and location within the Bay (Tierra Data Inc. 2010).

The monthly average for the northern portion of the Bay varies from 0.4 to 2.1 nephelometric turbidity units (NTU), with amounts up to 3 NTU during December rainfall and 7 NTU during the maximum tidal change (Tierra Data Inc. 2010). The Water Quality Control Plan for the San Diego Basin (Basin Plan) sets limits for allowable increases in turbidity over existing conditions (San Diego Regional Water Quality Control Board [RWQCB] 2016).

General sources of pollution to the Bay include underground dewatering, industries on the Bay and upstream, marinas and anchorages, Navy activities, materials used for underwater hull cleaning and vessel antifouling paints, and urban runoff (Chadwick et al. 1999). Additional specific pollution sources include creosote-treated wood pier pilings, which are a source of PAHs, stormwater runoff from land used for industrial, commercial, and transportation purposes, bilge water discharge, and oil spills (Chadwick et al. 1999). Changes in Navy procedures since the mid-1990s have included replacing approximately half of the pier pilings with plastic, concrete, or untreated wood and implementing the Bilge Oily Waste Treatment System for treatment of construction and repair wastewater.

Overall, the levels of contamination in the water and sediment in San Diego Bay appear to be lower now than in previous decades, including levels of some metals and PAHs (Port of San Diego 2007). However, copper concentrations remain routinely higher than federal and state limits for dissolved copper (Port of San Diego 2007).

3.2.3 Environmental Consequences

Evaluation of water quality impacts is based on the potential for a substantial increase in turbidity, discharge of suspended sediments, or discharge of contaminants at concentrations that exceed federal or state water quality standards or objectives. Impacts to water resources would occur if implementation of the Proposed Action would alter or obstruct patterns of circulation in San Diego Bay or substantially degrade surface water, groundwater, or marine water quality or cause impairment to beneficial use.

3.2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and there would be no change to baseline water resources. Therefore, no significant impacts to water resources would occur with implementation of the No Action Alternative.

3.2.3.2 Proposed Action (Preferred Alternative) Potential Impacts

The study area for the analysis of effects to water resources associated with the Proposed Action includes the Pier 5000 SSI berth, along with the surrounding marine waters of the Bay and nearshore or offshore disposal locations.

Implementation of the Proposed Action would include dredging of underwater sediments of the Bay bottom at the Pier 5000 SSI berth expansion area, loading of dredged material onto barge(s), transport of dredged material to disposal locations via barge, and direct underwater disposal at the Silver Strand Boat

Lanes nearshore beneficial reuse location, or similar beneficial reuse location. Because the dredged materials were not deemed adequate for nearshore beneficial reuse, the dredged material would likely be disposed of at the offshore LA-5 ODMDS. If the dredged materials had not been deemed adequate for either beneficial reuse or offshore disposal, dredged material would be disposed of at the upland Otay Landfill or Sycamore Landfill. In-water work, including dredging and underwater disposal of dredged material at a nearshore beneficial reuse site or at the offshore LA-5 ODMDS, would result in increased water turbidity associated with suspension of bottom sediments.

Bathymetry and Circulation

Dredging operations would temporarily increase water movement in the area where dredging is taking place, but the effect would be strictly limited to the duration of the dredging period and work area and would not affect overall water circulation within the Bay as a whole. Further, the minor changes in bathymetry resulting from the removal of sediments would not be sufficient to affect circulation patterns in the Bay. Therefore, dredging associated with the Proposed Action would not have a significant impact to bathymetry and circulation.

Surface Water Quality

The Proposed Action includes in-water marine dredging and disposal activities. Potential impacts to marine water quality are discussed below. The Proposed Action would not result in impacts to surface water quality, other than those described under “Marine Water Quality” below. The Proposed Action would continue to comply with NPDES Permit requirements, with no proposed changes to surface water management or discharge practices. Therefore, implementation of the Proposed Action would not significantly impact upland surface water quality.

Marine Water Quality

A barge-mounted clamshell bucket dredge would likely be used during dredging activities. Potential sources of impacts to marine water quality associated with dredging activities include accidental release of vessel and equipment fuels or hydraulic fluids and increased turbidity as bottom sediments become resuspended in the water column during the dredging process.

Increased turbidity may result in temporary decreases in light penetration and levels of dissolved oxygen. Analysis of the core sample collected in the Pier 5000 SSI berth expansion footprint showed that the dredge sediments are composed primarily of fine sand, silt, and clay and were classified as lean clay (NAVFAC SW 2021). Because of the grain size and low chemical characteristics of the sediments, the proposed dredged materials for the Pier 5000 SSI berth expansion footprint were approved as suitable for unconfined aquatic disposal at the LA-5 ODMDS (Robert Smith, Personal Communication 2021). Although sediments are finer than those from the adjacent footprint, because of high current velocity in this area of the bay (NOAA Tides and Currents 2021), is it expected that most sediments resuspended by dredging would settle out of the water column near the dredge within 1 hour, and only a small fraction take longer to resettle (NAVFAC SW 2016 and Amec Foster Wheeler 2008). The clamshell bucket dredge method would likely be used because it causes less turbidity than the cutter head/hopper dredge method. Increases in turbidity would likely be limited to the immediate vicinity of the operation. Decreases in levels of light penetration and dissolved oxygen would occur only within a few hundred feet of the dredging site and would end several hours after cessation of dredging activities, making a permanent decline in aquatic primary productivity unlikely. Furthermore, because the material to be dredged did not contain elevated levels of contaminants, it is unlikely that temporary turbidity associated with dredging would mobilize

significant levels of dissolved-phase contaminants into the water column. Impacts to water quality due to increased turbidity, therefore, would not be significant.

A sediment sample was collected from the dredge footprint in February 2021 and testing was performed in accordance with regulations in 40 CFR Parts 220–228. The sediment characterization report was provided to USEPA and USACE for review and comment on potential sediment disposal options in March 2021. Based on the sample analysis results, the agencies determined that the dredged material within the project area meets the allowable parameters for unconfined aquatic disposal at the LA-5 ODMDS (Robert Smith, Personal Communication 2021). Historically, USEPA and USACE have determined that sediments at NBPL have been consistently suitable for unconfined aquatic disposal for either nearshore replenishment or ocean disposal at the LA-5 ODMDS site. The Navy evaluated nearshore replenishment options for the Proposed Action, but ocean disposal was determined to be the final placement location for the project dredged materials.

Nearshore sediment disposal for beneficial reuse is an ongoing use for dredged sediments employed by the San Diego Association of Governments (SANDAG) and USACE to nourish beaches in San Diego County. Nearshore disposal sites, including the Silver Strand Boat Lanes, have been considered and designated as appropriate offshore (i.e., in-water) sediment receiver sites within San Diego County (SANDAG 2008a). Dredged material would be transported into the littoral zone and dumped from scows or barges, resulting in short-term impacts to marine surface water quality in the immediate vicinity at the time of disposal. Nearshore currents would disperse the dredged material along the coast, supplying local beaches with additional sediment. Some San Diego sites, including the Silver Strand Boat Lanes, are considered “feeder” beaches to the rest of the region, with sediments deposited at these locations transported downshore by prevailing currents and supplying a wider area with beneficial sediment (SANDAG 2008a).

The LA-5 ODMDS site is designated for disposal of dredged material that has been evaluated by the permitting criteria of USACE and USEPA (33 CFR Part 227 and 40 CFR Parts 220–225 and 227–228) and authorized for dumping under Section 103 of the Marine Protection, Research, and Sanctuaries Act (USEPA 1987). Ocean disposal of dredged sediments would cause short-term impacts to marine water quality in the immediate vicinity of LA-5 ODMDS at the time of disposal (USEPA 1987). Offshore currents would disperse the dredged material into a plume cloud with increased turbidity, and possibly decreased dissolved oxygen, but the plume would dilute to negligible concentration within two hours (USEPA 1987). Increased turbidity associated with ocean disposal of the project dredge sediments would be short-term and spatially restricted. Thus, impacts associated with dredging and disposal would not be significant.

In summary, procedures would be followed to reduce impacts to a level of insignificance. Impacts to marine surface water quality from sediment dredging and disposal would not be significant because of compliance with USACE, USEPA, and RWQCB permit requirements.

Summary

Implementation of the Proposed Action would not result in significant changes to circulation, groundwater, upland, or marine water quality, or wetlands. Therefore, implementation of the Proposed Action would not result in significant impacts to water resources.

3.2.3.3 Reduced Dredging Footprint Alternative Potential Impacts

The Reduced Dredging Footprint Alternative would have impacts similar to those described for the Proposed Action, except that the dredged volume would be approximately 4,950 cy and the dredging

duration would be reduced to seven days. As with the Proposed Action, dredging would not have significant impacts to bathymetry and circulation. Under this alternative, impacts to water resources would not be significant.

3.3 Marine Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

Within this EA, biological resources are divided into three major categories: (1) terrestrial wildlife; (2) marine vegetation; and (3) marine wildlife. Threatened, endangered, and other special status species are discussed in their respective categories.

3.3.1 Regulatory Setting

Special-status species, for the purposes of this assessment, are those species listed as threatened or endangered under the Endangered Species Act (ESA) and species afforded federal protection under the Marine Mammal Protection Act (MMPA) or the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act, or the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA).

The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) Fisheries to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. Critical habitat cannot be designated on any areas owned, controlled, or designated for use by the Department of Defense (DoD) where an Integrated Natural Resources Management Plan has been developed that, as determined by the Department of Interior or Department of Commerce Secretary, provides a benefit to the species subject to critical habitat designation.

All marine mammals are protected under the provisions of the MMPA. The MMPA prohibits any person or vessel from “taking” marine mammals in the U.S. or the high seas without authorization. The MMPA defines “take” to mean “to harass, hunt, capture, or kill or attempt to harass, hunt, capture, or kill any marine mammal.”

Birds, both migratory and most native-resident bird species, are protected under the MBTA, and their conservation by federal agencies is mandated by EO 13186. Under the MBTA it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, or possess migratory birds or their nests or eggs at any time, unless permitted by regulation. The 2003 National Defense Authorization Act gave the Secretary of the Interior ability to prescribe regulations on the Armed Forces for the incidental taking of migratory birds during authorized military readiness activities. The final rule authorizing the DoD to take migratory birds in such cases includes a requirement that the Armed Forces must confer with the USFWS to develop and implement appropriate conservation measures to minimize or mitigate adverse effects of the Proposed Action if the action would have a significant negative effect on the sustainability of a population of a migratory bird species.

Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act. This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their

parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

The MSFCMA provides for the conservation and management of the fisheries. Under the Act, essential fish habitat (EFH) consists of the waters and substrate needed by fish to spawn, breed, feed, or grow to maturity.

3.3.2 Affected Environment

This section describes the existing conditions for each of the categories under biological resources at NBPL. Threatened and endangered species are discussed in each respective section below, with a composite list applicable to the Proposed Action provided in Table 3-5.

The description of existing conditions is based on the following sources:

- San Diego Bay Integrated Natural Resources Management Plan (INRMP) (NAVFAC SW 2013);
- NBPL INRMP (NAVFAC SW 2012);
- 2020 Evaluation of Temporal and Spatial Changes of Eelgrass beds within San Diego Bay Using Permanently Monitored Transects (Merkel & Associates, Inc. 2020a);
- 2010 Characterization of Essential Fish Habitat in San Diego Bay (NAVFAC SW 2010);
- Fish surveys conducted in San Diego Bay by Allen et al. (2002), Pondella and Williams (2009), and Williams et al. (2016 and 2019);
- Silver Strand Training Complex Environmental Impact Statement (NAVFAC SW 2011);
- Incidental Harassment Authorization for the Navy's Fuel Pier Replacement Project at Naval Base Point Loma (NAVFAC SW 2020b);
- Compendium of Underwater and Airborne Sound Data During Pile Installation and In-Water Demolition Activities in San Diego Bay, California. October 2020. Prepared by Tierra Data, Inc. (NAVFAC SW 2020c), and
- Site reconnaissance and other sources as cited.

The proposed dredging includes in-water marine activities only; no upland terrestrial activities are proposed. Therefore, there is no potential for direct or indirect impacts to occur related to terrestrial vegetation or wildlife other than birds.

Marine vegetation and wildlife are described below. Special status vegetation and wildlife species expected to occur within the Proposed Action Area are listed in Table 3-5 and are described in more detail in their appropriate sections and in Appendix D when seldom occurring within the Proposed Action area and would not be affected by project activities. Species not expected to occur within or adjacent to the project footprint are listed in Table D-2, but not discussed further in this EA.

Table 3-5. Special Status Species Observed or with the Potential to Occur at NBPL on the Peninsula

Common Name	*Scientific Name*	*Federal Status*	*State Status*	*NBPL Presence*	*Presence Within or Adjacent to the Project Footprint[1]*
Birds					
California Least Tern	*Sterna antillarum browni*	FE	SE	Forages in Bay	Expected occur within the project area
Osprey*	*Pandion haliaetus*			Breeding	Expected to occur within the project area
California Brown Pelican*	*Pelicanus occidentalis californicus*			Year-round foraging	Expected to occur within the project area
Amphibians and Reptiles					
Green Sea Turtle	*Chelonia mydas*	FT		Forages in bay	May occur in project area

Notes: A full list of species including occasional migrants and those not expected to occur at NBPL on the peninsula is included in Appendix D.
* Species actively managed for compliance with requirements such as MBTA
Selections for Listing Status Column include: FT = Federal Threatened, SE = State Endangered, ST = State Threatened,
Source: NAVFAC SW 2012; California Native Plant Society 2001

Birds

The Bay is part of a major bird migratory pathway, the Pacific Flyway, and supports large populations of over-wintering birds traveling between northern breeding grounds and southern wintering sites (NAVFAC SW 2012 and 2013). Over 300 migratory and resident bird species have been documented to use the Bay (NAVFAC SW 2012 and 2013), including shore birds, gulls, and other waterfowl. Several species, as noted below, are considered sensitive by the USFWS or California Department of Fish and Wildlife (CDFW).

Special status bird species with the potential to occur as occasional migrants in the project area or near the project area include the western snowy plover (*Charadrius alexandrines nivosus*), coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), Swainson's hawk (*Buteo swainsonii*), California black rail (*Laterallus jamaicensis coturniculus*), and bank swallow (*Riparia riparia*). NBPL manages additional birds for compliance with the MBTA including but not limited to great egret (*Ardea alba*), American peregrine falcon (*Falco peregrinus anatum*), osprey (*Pandion haliaetus*), and California brown pelican (*Pelicanus occidentalis californicus*) (NAVFAC SW 2012 and 2014a). Most of these species are considered sensitive only where breeding or nesting occurs. These birds use intertidal flats, shallow water habitat, or manmade structures for foraging or resting, similar to areas adjacent to the project area. No critical habitats for these species are identified in the vicinity of the project area. Additional information on migratory bird species considered to be occasional migrants within the Proposed Action area that are not likely to be affected are included in Appendix D. The most likely bird species to occur at the NBPL peninsula, the California least tern (*Sterna antillarum browni*), is discussed below.

California least tern (*Sterna antillarum browni*)

The California least tern has been a federally and state-listed endangered species since 1970. It is also on the U.S. Bird Conservation Watch List. It is the smallest tern found in the U.S., approximately 9 inches (in) (23 centimeters [cm]) long with a 20-in (51-cm) wingspan. Its coloring is primarily gray and white with

black wingtips, a black cap, a white forehead, and a yellow beak tipped with black. Immature birds have darker plumage and a dark bill, with a distinctive white head and a dark eye stripe.

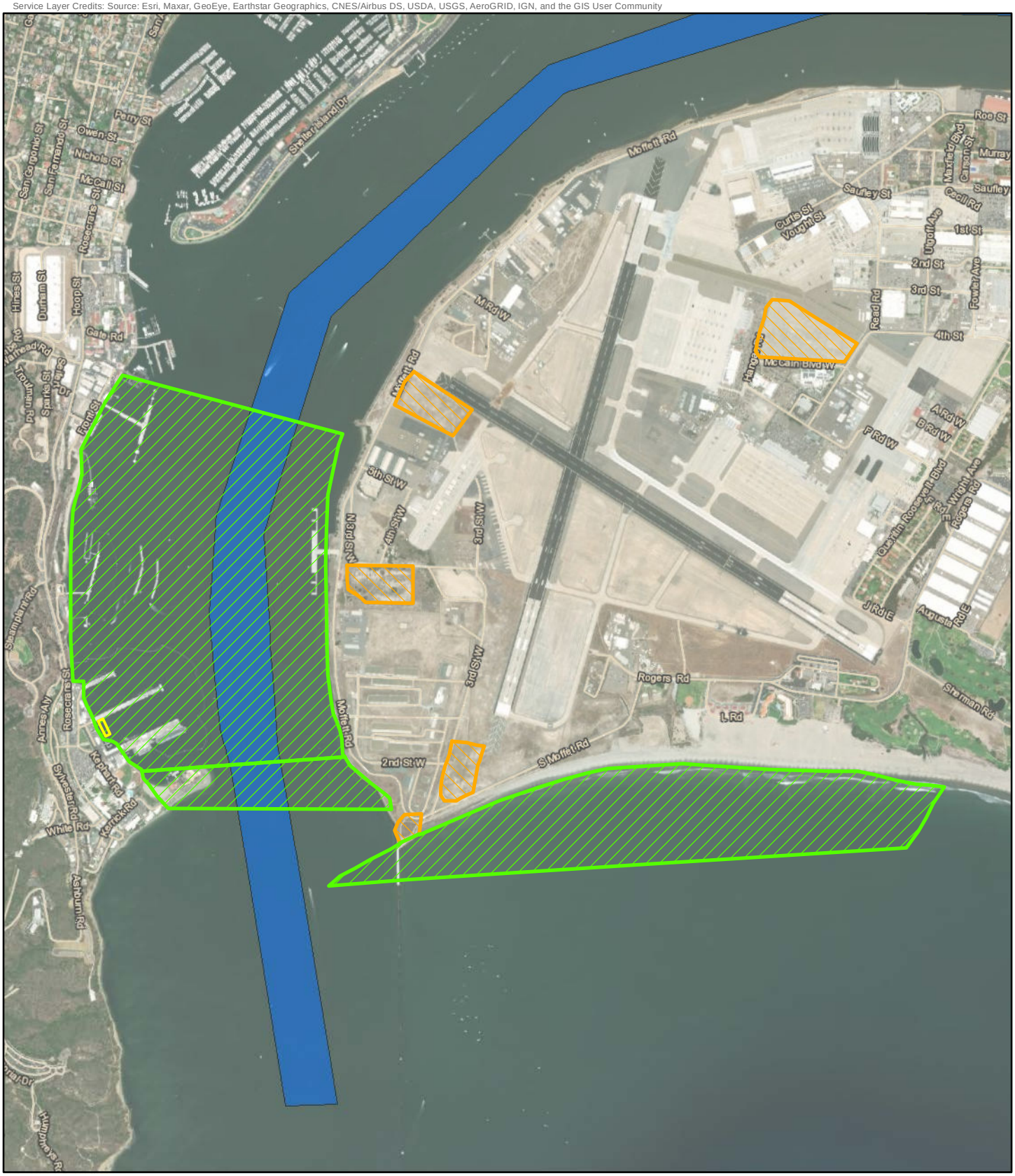
The California least tern breeds in the coastal sandy beach habitat of the California coast. Its habitat has been subject to significant human disturbance and alteration in the past, before the species was listed. California least terns prefer to nest on open sandy or gravelly shores with light-colored substrates, little vegetation, and nearby fishing waters (NAVFAC SW 2013). California least tern nests are simple depressions in the substrate either lined or unlined with shell debris or pebbles and sometimes wood. Most initial nesting attempts are completed by mid-June. A second wave of nesting often occurs from mid-June to early August. These re-nests follow initial failures during a given season but may also represent second year birds nesting for the first time (NAVFAC SW 2013). California least terns will generally return each year to breeding sites that have been used successfully in the past. Least terns over-winter in Central America and breed mainly in Baja California and Southern California, but a few colonies exist in the San Francisco Bay area (NAVFAC SW 2013). During the nesting season, adult terns and their young feed almost entirely on small marine fish in the surface waters (top 6 feet) of the Bay, river mouths, and near-shore ocean waters (NAVFAC SW 2013). The peak of the topsmelt spawning season (April and May) occurs at the same time the least terns return from their southern wintering grounds (April) and begin nesting at Seal Beach (May). The large numbers of topsmelt (*Atherinops affinis*) overall and the seasonal abundance (May through November) of the deepbody anchovy (*Anchoa compressa*) provide a timely and adequate forage base for the California least tern.

The presence of eelgrass is important as habitat for several prey species of the least terns, such as northern anchovy (*Engraulis mordax*), topsmelt, and jacksmelt (*Atherinopsis californiensis*). However, California least terns do not demonstrate any preference for feeding in eelgrass areas (Baird 1997).

The decline of the California least tern is attributed to prolonged and widespread destruction and degradation of nesting and foraging habitats and increasing disturbance of breeding colonies throughout its range. Loss of nesting habitat has isolated colony sites that become extremely vulnerable to predation from native, feral, and exotic species, overwash by high tides, and vandalism and harassment.

In 1993, the Navy entered into a MOU between USFWS and NAVFAC SW concerning the endangered California least tern in the Bay. This MOU continued efforts in least tern conservation that started in October 1987 under a similar MOU. The purpose of this MOU is to establish standards and conditions for Navy in-water construction activities conducted in San Diego Bay to prevent adverse effects on the tern. The MOU defines areas and conditions in which in-water construction activities may and may not occur without formal Section 7 consultation. The California least tern forages in the Bay near NBPL (see Figure 3-2). No project-related activities would occur during the CLT nesting season (1 April to 15 September).

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Path: \\sdg1-fs1\GIS\3151_AquaticResources\Navy_Misc\Pier5000_Deepening\MXD\ReportFigures\EA\Fig3-1_LeastTernLocations_portrait.mxd, catharine.harwin 3/8/2021

1 inch = 2,000 feet
0 1,000 2,000 Feet

California Least Tern Foraging Area

California Least Tern Nest Site

Pier 5000 South Inner Berths (SSI) Expansion Footprint

Federal Navigation Channel (USACE)

FIGURE 3-2

California Least Tern Nesting Sites and Foraging Areas
Pier 5000 South Side Inner Berth
Navy Base Point Loma, San Diego CA

3.3.2.1 Marine Species

Habitats and Communities

The habitats of San Diego Bay are differentiated by elevation or depth, substrate, and manmade or natural biological features and include artificial shorelines, natural shorelines, shallow subtidal, vegetated shallows, moderately deep subtidal, and deep subtidal habitats. Habitats associated with the project area include the developed/artificial shoreline and substrates (e.g., pier pilings and decking) at Pier 5000 SSI berth expansion area; and marine benthic (bottom), water column, and open water habitats of the Deep Subtidal habitat (NAVFAC SW 2013). Depths within the proposed dredge area vary from -28 to -34 feet below MLLW.

Artificial Shorelines in the Intertidal Zone (+7.8 to -2.2 feet MLLW)

The shoreline of the affected environment consists primarily of manmade features, including concrete bulkhead walls and riprap. A total of 74 percent (45.4 miles) of the Bay shoreline is armored by manmade structures to protect developed sites (NAVFAC SW 2013). At Pier 5000, the entire shoreline is developed and consists of piers and pilings. In general, artificial shorelines and substrates within the Bay, such as the pilings for Pier 5000, support invertebrates and seaweeds. California spiny lobster (*Panulirus interruptus*) and a variety of crabs, worms, mussels, barnacles, echinoderms (sea stars and sea urchins), sponges, sea anemones, and tunicates (sea squirts) inhabit artificial structures. These structures provide microhabitats and support communities similar to those of natural rocky shores, which are lacking in the Bay. These areas may also provide refuge and feeding areas for juvenile and predatory fishes. Riprap niches are often filled with invertebrate fauna. Small mobile invertebrates, including nemertean worms (ribbon worms), amphipods, shrimp, decorator crabs, and gastropods, are common on piles (NAVFAC SW 2013).

Hardened shorelines can also provide elevated roosting sites for bay waterbirds, such as California brown pelicans, cormorants, and gulls, which allow them to conserve energy and avoid harsh weather conditions (NAVFAC SW 2013). The surface roughness and complexity of structure can affect its ability to provide refuge niches and allow water retention at low tides. Pier 5000 covers approximately 1.5 acre and is used for resting by waterbirds.

Deep Subtidal (deeper than -20 feet MLLW)

Deep subtidal habitat includes the overlying surface water, water column, and sediments for depths greater than 20 feet, which constitutes about 4,400 acres (34 percent) of the Bay surface area (NAVFAC SW 2013). Deep subtidal habitat is associated primarily with navigational channels, including the approach area. Most of the project area is deep subtidal, ranging from -30 feet MLLW near Pier 5000 to -50 feet MLLW where the approach area borders the main channel. Planktonic organisms such as phytoplankton or zooplankton spend their entire lives in the water column, while meroplankton consist of animals that only spend a portion of their lives in the water column. For the meroplankton, which includes many fish and invertebrates, an important function of the deep subtidal environment is transport into and out of the relatively warm, sheltered waters of the Bay, which provide nursery habitats (NAVFAC SW 2013). Common fish species found in deep subtidal habitat are round stingray, California halibut, and barred sand bass.

Diving birds, including California least tern, forage in the open water above deep subtidal habitat, especially along the Bay margins where schooling fish concentrate. Other common bird species include cormorant, grebe, surf scoter, elegant tern (*Sterna elegans*), and other tern species (NAVFAC SW 2013).

The entire Pier 5000 SSI berth expansion area proposed to be dredged is in deep subtidal water and includes areas that have and have not been previously dredged.

Nearshore Replenishment Site

The nearshore soft-bottom benthos includes similar characteristics for a given water depth, sediment type, and wave energy. Thus, sandy nearshore communities off NBPL are similar to the nearshore communities off the Silver Strand. The subtidal zone is classified into general regions, including the shallow subtidal to a depth of about -30 feet MLLW, an inner shelf zone from about -30 to -80 feet MLLW, a middle shelf from about -80 to -300 feet MLLW, and an outer shelf zone from about -300 to -600 feet MLLW. Thus, the project area encompasses the shallow zone and a small portion of the inner shelf zone (NAVFAC SW 2013).

The proposed nearshore replenishment site falls within the inner shelf zone, which is influenced by oceanic swell. The abundance and diversity of benthic macroinvertebrates are lower in the inner shelf compared with the middle and outer shelf zones. Polychaete worms and/or small, mobile crustaceans dominate the inner to middle shelf infaunal community (NAVFAC SW 2013). The most abundant species collected in sediment core samples at depths of -49 to -134 feet MLLW on the San Diego shelf include brittle stars, polychaete worms, and small crustaceans (Southern California Coastal Water Research Project [SCCWRP] 1994 and 2003). Common benthic macroinvertebrate species include blackspotted shrimp (*Crangon nigromaculata*), California sand star (*Astropecten verrilli*), sea pens, and white sea urchin (*Lytechinus anamesus*) (SCCWRP 2003).

Common fish species living on the inner shelf include English sole (*Parophrys vetulus*), Pacific sanddab (*Citharichthys sordidus*), pink seaperch (*Zalembius rosaceus*), speckled sanddab (*Citharichthys stigmaeus*), yellowchin sculpin (*Icelinus quadriseriatus*), and white croaker (*Genyonemus lineatus*) (SCCWRP 2003).

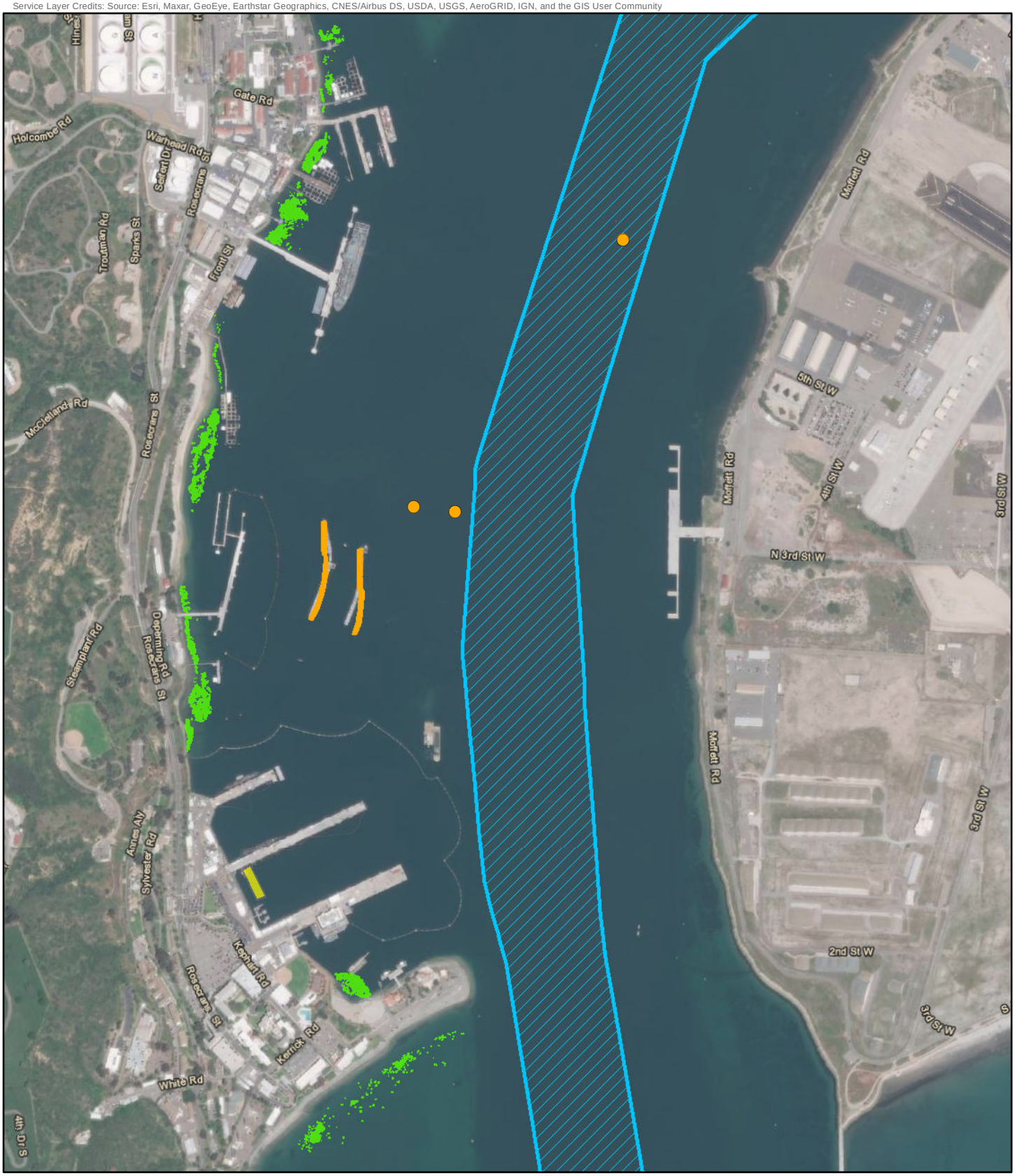
Marine Vegetation

Marine vegetation includes plants occurring in marine or estuarine waters. These may include algae, and various seagrasses.

Eelgrass (*Zostera* sp.) is a perennial flowering aquatic plant submerged in bays and shallow coastal zones. Eelgrass beds found extensively throughout the Bay appear to be very important in supporting juvenile and adult fish populations. Although eelgrass is not an endangered or threatened species, its presence in the waters adjacent to NBPL initiates management concerns regarding offshore activities because it is important to many species. Eelgrass beds are vulnerable to human activities such as dredging.

In 2020 eelgrass inventories and bathymetry updates were conducted in the Bay. The 2020 report found that eelgrass distribution within the Bay was approximately 1,692.7 acres (Merkel & Associates, Inc. 2020a). The report states that the greatest extent of eelgrass in San Diego Bay is within the shallow southern ecoregion with some eelgrass found on the shallower fringes of the western Bay shorelines (including NBPL). Fairly extensive eelgrass beds also exist at the mouth of San Diego Bay within the shallows outside of Ballast Point and along Zuniga Jetty on Naval Air Station North Island, where clear water supports a broad-leaved population of eelgrass between Point Loma and Zuniga Jetty (Merkel & Associates, Inc. 2020a). The project area, however, includes deep subtidal areas, deeper than the -20 feet MLLW habitat limit for eelgrass. The closest beds to the Proposed Action are located approximately 960 feet northwest and 765 feet southeast from the nearest mapped eelgrass area from the 2020 update report (see Figure 3-3) (Merkel & Associates, Inc. 2020a).

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Path: \\sdg1-fs1\GIS\3151_AquaticResources\Navy_Misc\Pier5000_Deepening\MXD\ReportFigures\EA\Fig3-2_SeaLion_Eelgrass.mxd, catharine.harwin 3/16/2021

1 inch = 1,000 feet
0 500 1,000 Feet

- Sea Lion Haul-Out Location (Navigational Buoy)
- Sea Lion Haul-Out Location (Bait Barge)
- Eelgrass (Merkel, 2021)
- Federal Navigation Channel (USACE)
- Proposed Action Dredging Area

FIGURE 3-3

Eelgrass and Known Sea Lion Haul-Out Locations
Pier 5000 South Side Inner Berth Expansion Area Dredging Project
Naval Base Point Loma, San Diego, CA

A large kelp forest extending for approximately 5 miles (8 kilometers) with a width of approximately 1.0 kilometers (0.62 mile) occurs off the western shore of Point Loma peninsula. The kelp forest provides habitat for numerous fish species, many of which are commercially important. A number of species associated with the kelp forest use the natural tide pools at NBPL as a nursery ground, and juveniles of these fish can be found in the intertidal area at low tide. Some species spend their entire lives in the tide pools at NBPL. However, the project area includes only deep subtidal areas and artificial shorelines and would not include any intertidal areas.

Marine Mammals

Jurisdiction over marine mammals is maintained by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the USFWS. NOAA Fisheries maintains jurisdiction over whales, dolphins, porpoises, seals, and sea lions. The USFWS maintains jurisdiction for certain other marine mammal species, including walruses, polar bears, dugongs, sea otters, and manatees. Marine mammals are protected from "taking" under the MMPA. Taking is defined as "harass, hunt, capture, or kill or attempt to harass, hunt, capture, or kill any marine mammal." The term harassment is defined under the MMPA as any act of pursuit, torment, or annoyance with potential to do one or both of the following:

- Injure a marine mammal or marine mammal stock in the wild (Level A); and/or
- Disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B).

The most frequently observed marine mammals in San Diego Bay are the California sea lion (*Zalophus californianus*), which often rest on buoys and other structures and occur throughout the North to North-Central Bay; coastal bottlenose dolphins (*Tursiops truncatus*), which are regularly seen in the North Bay; Pacific harbor seals (*Phoca vitulina*), which frequently enter the North Bay; and common dolphins (*Delphinus* spp.), which are rare visitors in the North Bay. The waters off the Point Loma shore provide an important migration corridor for California gray whales (*Eschrichtius robustus*) and are occasionally sighted near the mouth of San Diego Bay during their winter migration (Navy and POSD 2013) and occasionally enter the bay (personal communication with Todd McConchie 2019).

Buoys, a bait barge, and various docks are often used as haul-outs with the nearest haul-out location at a bait barge (recreational fishing vessels can collect bait fish prior to leaving for fishing excursions) which is 1,250 feet to the north of Pier 5000 (see Figure 3-3). During marine mammal surveys conducted between 2007 and 2016, five marine mammal species, including harbor seals (*Phoca vitulina*), California sea lion (*Zalophus californianus*), bottlenose dolphin (*Tursiops truncatus*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and common dolphin (*Delphinus* sp.), were observed in the vicinity of NBPL, both within San Diego Bay and along the coast (NAVFAC 2016a). Although not present in large numbers, bottlenose dolphins are frequently sighted within the Point Loma Naval Complex (NAVFAC SW 2012). Pacific harbor seals frequently enter the northern portion of the Bay, and gray whales are occasionally sighted near the mouth of the Bay during their winter migration (Merkel & Associates, Inc. 2009b; NAVFAC SW 2012).

Recent monitoring efforts (2014 to 2018) for the NBPL Fuel Pier Replacement Project in northern San Diego Bay identified nine marine mammal species observed more than once in northern San Diego Bay (NAVFAC SW 2019). These species included California sea lions, harbor seal, coastal bottlenose dolphin, gray whale, common dolphin, Pacific white-sided dolphin, and northern elephant seal (*Mirounga angustirostris*). During the 395 days of monitoring effort, 21,643 marine mammals were observed during

10,826 sightings either in the water or hauled out on buoys, barges, or floating docks near the NBPL Fuel Pier. Most of the individuals observed in the water were California sea lions (88.2 percent), followed by coastal bottlenose dolphins (4.1 percent), and harbor seals (4.0 percent). Extralimital species, Steller sea lion (*Eumetopias jubatus*) and short-finned pilot whale (*Globicephala macrorhynchus*), were observed once during the El Niño event in 2015 (NAVFAC SW 2019).

Sea Turtles

Of the six sea turtle species that are found in U.S. waters or that nest on U.S. beaches, all are designated as either threatened or endangered under the ESA. Sea turtles are highly migratory and utilize the waters of more than one country in their lifetimes. The USFWS and NMFS share federal jurisdiction for sea turtles with the USFWS having lead responsibility on the nesting beaches and NOAA Fisheries, the marine environment. The green sea turtle is the only species of marine reptile found in San Diego Bay. The San Diego Bay green sea turtle population is part of the East Pacific distinct population segment (DPS), which is listed as federally threatened under the ESA. Critical habitat has not been designated for the East Pacific DPS.

The Bay represents one of the green sea turtles' northernmost foraging habitats (MacDonald et al. 2012). Because this species is considered rare along the California coast, the resident turtles in San Diego Bay are considered both "noteworthy" and "extremely interesting" by members of the scientific community (Macdonald et al. 1990). The number of turtles using the bay is estimated to range between 40 and 60 animals most months of the year, increasing to 100 animals during peak migratory periods (Eguchi 2017). Based on the number of juveniles observed during the late 1980s and early 1990s, there appears to be some recruitment into the population (MacDonald and Dutton 1992). Additionally, an unknown number of green sea turtles have also been occupying habitats in Long Beach, and Seal Beach, California, for at least the past 50 years (Crear et al. 2016, 2017). This aggregation of green sea turtles has been primarily observed in the highly-urbanized San Gabriel River, which bisects two electricity-generating plants, and their numbers seem to have increased in recent years (Crear et al. 2017). Although it was previously accepted that green sea turtles were not historical residents of San Diego Bay, scientists have now concluded that green sea turtles would naturally have sought out the bay, especially during the summer months (Macdonald et al. 1990).

Recent observations, including during construction of the NBPL Fuel Pier, recorded one live turtle at the Fuel Pier site, one live turtle at the NBPL Harbor Drive Annex, and one dead turtle near Naval Air Station North Island (NAVFAC SW 2019). Habitat usage by green sea turtles in the Bay based on capture surveys demonstrates that turtles largely utilize eelgrass areas in the South Bay with a historical link to the former warm water effluent channel of the decommissioned power plant (MacDonald et al. 2012; Space and Naval Warfare Systems Center [SPAWAR] 2016). Turtles observed in the cooler North Bay are suggested to be transient individuals transiting between the Pacific Ocean and the warmer South Bay.

Potential habitat for green sea turtles within the Bay may be utilized during foraging but is not considered suitable for nesting. Foraging by green sea turtles is likely concentrated to eelgrass beds and, less so, invertebrate communities in South- and South-Central Bay, considering the concentration of most of such habitat is within those areas of the Bay. Potential foraging areas are located outside the Bay associated with kelp beds offshore of Point Loma or eelgrass located adjacent to the mouth of the Bay (Zuniga Jetty) and north Naval Air Station North Island (Eguchi et al. 2010).

Fish and Essential Fish Habitat

Fish are vital components of the marine ecosystem. They have great ecological and economic aspects. To protect this resource, NOAA Fisheries works with the regional fishery management council (i.e., Pacific Fishery Management Council [PFMC]) to identify the essential habitat for every life stage for each federally managed species using the best available scientific information. Essential fish habitat (EFH) includes all types of aquatic habitat including wetlands, coral reefs, seagrasses, and rivers; all locations where fish spawn, breed, feed, or grow to maturity.

The Bay, which includes approximately 12,000 acres of marine habitat, is the largest bay between San Francisco Bay and Scammon's Lagoon in central Baja California. The bay provides a unique habitat to support diverse assemblages of coastal marine fish and supports fish nurseries and large numbers of juvenile fish. A 4-year study, initiated in 1994, identified 79 species of fish captured over 16 sampling dates between July 1994 and April 1998 (Allen 1999) and a 2016 study identified 90 species (Williams et al. 2016).

More recently, among the most comprehensive studies were surveys by Williams et al. (2019). These and other works related to fish and EFH were characterized by Merkel & Associates, Inc. (2014, 2017, 2020a). Survey results indicate over 45 species of fish in the Bay. In the North Bay, there is a greater variety of fish species than in the South Bay. The greatest fish diversity can be found at artificial reefs; sandy floors and eelgrass have approximately two-thirds the species diversity of artificial reefs. Piers and rock riprap have approximately half the fish diversity of artificial reefs (Allen at al. 2002; Merkel & Associates 2010). Marinas, launch ramps, and muddy bottoms have the least diversity of all areas in the North Bay.

Figure 3-4 shows the 10 most common fish species sampled in the North Bay in 2019. The topsmelt (78 percent), dwarf perch (11 percent), and shiner perch (2.3 percent) were the most abundant species. Additional fish species, accounting for 8.6 percent of the total sample are listed in Appendix D.

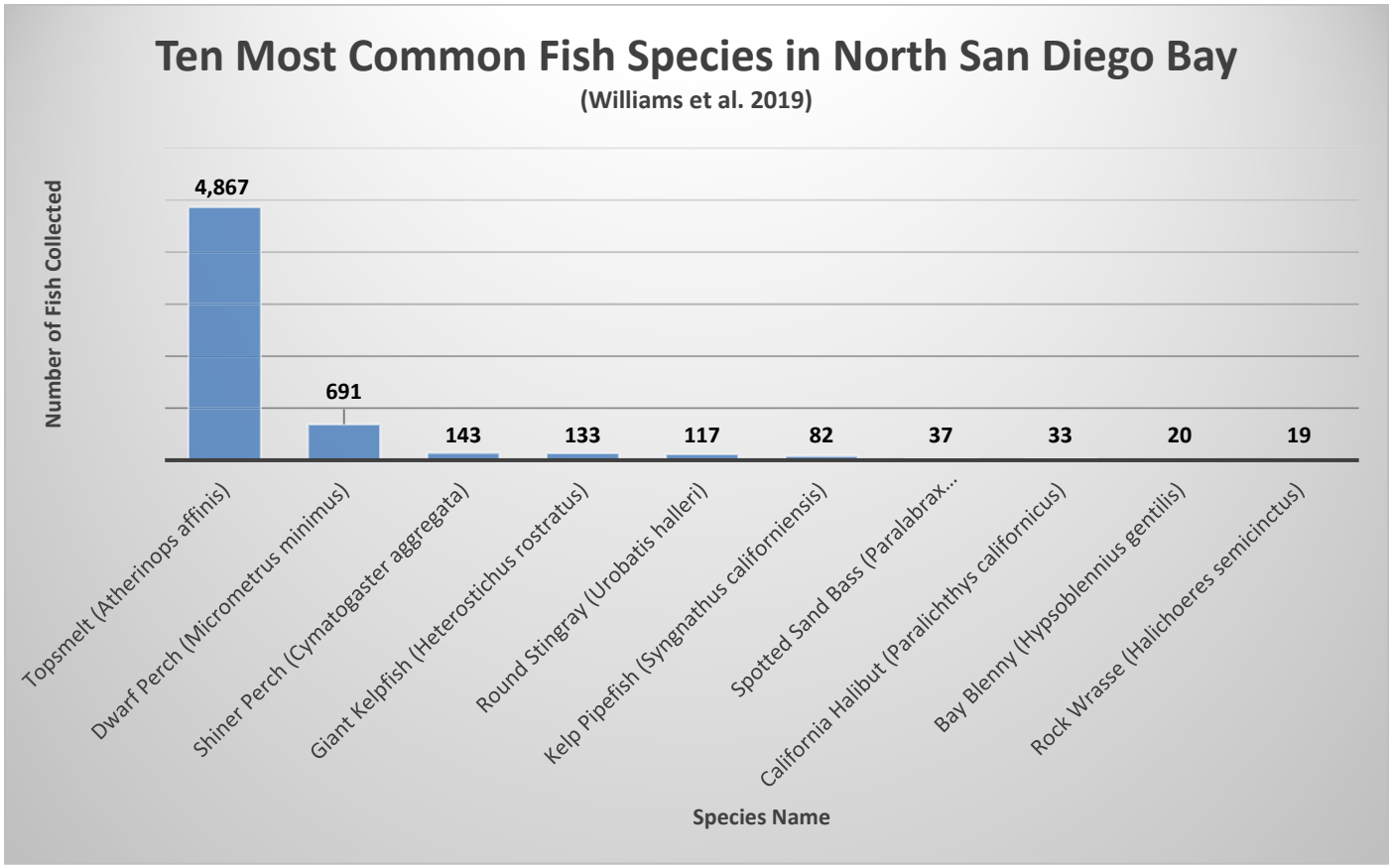


Figure 3-4. Ten Most Common Fish Species in North San Diego Bay (Williams et al. 2019)

Nearshore water depths near Pier 5000 vary from -4 feet MLLW near the shore to -42 feet MLLW near the outer berths. Existing depths across the dredge footprints vary from -28 feet MLLW to -34 feet MLLW. The nearshore habitat along the pier is expected to contain marine algae, invertebrates, and fish species typically associated with shoreline to deep subtidal habitats. Based on Allen et al. (2002), areas extending out from the pier deeper than -18 feet MLLW are likely to contain:

- Pacific rock crab (*Cancer antennarius*),
- Red tube worm (*Serpula vermicularis*), and
- Giant green anemone (*Anthopleura xanthogrammica*).

Fish associated with deep subtidal habitats include California horn shark (*Heterodontus francisi*), shovelnose guitarfish (*Rhinobatos productus*), bat ray (*Myliobatis californica*), round stingray, Pacific sardine, northern anchovy, slough anchovy, jacksmelt, topsmelt, pipefish, basses, croakers, surfperches, Pacific mackerel (*Scomber japonicus*), and turbots (NAVFAC SW 2013).

Essential Fish Habitat

The 1996 amendments to the MSFCMA set forth the EFH provisions to identify and protect important habitats of federally managed marine and anadromous fish species. Section 305(b)(2) of the MSFCMA directs each Federal Agency to consult with the NMFS with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH identified under the MSFCMA. Implementing regulations for this requirement are outlined in 50 CFR Part 600.

The PFMC delineated EFH for two Fishery Management Plans (FMPs): Coastal Pelagic Species (PFMC 2019) and Pacific Coast Groundfish (PFMC 2020) in the vicinity of the project. The FMP for Coastal Pelagic Species includes five species (four finfish and the invertebrate, market squid), four of which are likely to occur in the project area (PFMC 2019). The Pacific Coast Groundfish FMP manages at least 86 species, seven of which may occur within the project area (including disposal sites) (PFMC 2020; Allen et al. 2002; Williams et al. 2016; 2019). These species are listed in Table 3-6 and are discussed in more detail below. Because the project may adversely affect EFH, the NMFS must be consulted. The Navy and NMFS signed an agreement in 2001 to allow the Navy's NEPA and Fish and Wildlife Coordination Act process to satisfy EFH analysis requirements. Therefore, the NMFS would be notified in writing as early as practicable regarding actions that may adversely affect EFH. Notification would facilitate discussion of measures to conserve EFH. A written assessment of the effects of the project on EFH would be provided to NMFS. The level of detail required in the assessment is commensurate with the magnitude of potential adverse effects, so an action resulting in minor effects would only require a brief assessment. Mandatory contents of the assessment are outlined in 50 CFR §600.920.e.3. In conformance with the Navy Policy Regarding Essential Fish Habitat Assessments and Consultations (DON 2011b), a separate EFH Assessment is provided in Appendix C.

Table 3-6. Fish Species with EFH Likely to Occur in the Proposed Project Area

Common Name	*Scientific Name*
Coastal Pelagics	
Jack mackerel	*Trachurus symmetricus*
Northern anchovy	*Engraulis mordax*
Pacific (chub) mackerel	*Scomber japonicus*
Pacific sardine	*Sardinops sagax*
Groundfish	
Curlfin sole	*Pleuronichthys decurrens*
California scorpionfish	*Scorpaena guttata*
English sole	*Pleuronichthys vetulus*
Grass rockfish	*Sebastes rastrelliger*
Leopard shark	*Triakis semifasciata*
Soupfin shark	*Galeorhinus zyopterus*
Spiny dogfish	*Squalus sukleiyi*

EFH considered to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation, may also be identified by NMFS as Habitat Areas of Particular Concern (HAPC). For types or areas of EFH to be considered HAPC, at least one of the following must be demonstrated:

- The importance of the ecological function provided by the habitat;
- The extent to which the habitat is sensitive to human-induce environmental damage;
- Whether, and to what extent, development activities are, or would be, negatively impacting the habitat type; and/or
- The rarity of the habitat.

The two groups of managed species with EFH, including HAPC, in the project area are discussed below.

Coastal Pelagic Species

Coastal pelagic fish are fish living in the water column rather than groundfish species living near the sea floor (PFMC 2019). Pelagic species can generally be found anywhere from the surface to 3,300 feet deep. In depth descriptions and life histories for each of the coastal pelagic species with EFH in the vicinity of the project are provided in Appendix C.

Groundfish Species

Although groundfish are considered demersal (living on or near the seabed), they occupy diverse habitats at all stages in their life histories (PFMC 2005). EFH areas may be large because a species' pelagic eggs and larvae are widely dispersed; however, EFH areas can be comparatively small, as is the case with the adults of many nearshore rockfishes with strong affinities for a particular location or type of substrate. In depth descriptions and life histories for each of the coastal pelagic species with EFH in the vicinity of the project are provided in Appendix C.

The project area is located within an area designated as EFH by the Pacific Coast Groundfish and Coastal Pelagic Species, the species covered by these plans are considered in this EA.

Habitat Areas of Particular Concern

HAPCs may include high-value intertidal and estuarine habitats, offshore areas of high habitat value or vertical relief, and habitats used for migration, spawning and rearing of fish and shellfish. The Pacific Coast Groundfish FMP identifies several HAPCs including one for seagrass associated with eelgrass beds in the Bay (PFMC 2016).

Special Aquatic Sites

In addition to EFH and HAPC, USEPA defined Special Aquatic Sites as geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values (40 CFR §404[b][1]). Special Aquatic Sites are recognized as those significantly influencing or positively contributing to the overall environmental health or vitality of the entire ecosystem or a region. Special Aquatic Sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. Eelgrass in the Bay qualifies as vegetated shallows. As of 2020, historical data indicate the proposed project area has never supported eelgrass (Merkel & Associates, Inc. 2014, 2017, 2020a, 2020b), although eelgrass beds occur approximately 960 feet northwest and 765 feet southeast of the project area.

Benthic Invertebrates

Animals that live on the sea floor are called benthos. Most of these animals lack a backbone and are called invertebrates. Typical benthic, invertebrates include sea anemones, sponges, corals, sea stars, sea urchins, worms, bivalves, crabs, and many more.

The Bay is a highly productive habitat with at least 650 species of marine, estuarine, and salt marsh invertebrates. Infaunal benthic invertebrates are the most abundant invertebrates found in the soft-bottom sediment of the Bay. The species diversity, abundance, and biomass of infaunal invertebrates in the North Bay region are significantly higher than those of the South Bay region. Abundance in the North Bay is particularly high in rock riprap (NAVFAC SW 2010). During the Bight 1998 survey (Bay et al. 2000), 1,172 megabenthic invertebrates, representing 43 taxa, were collected in the Bay. The nonindigenous bivalve, Asian data mussel (*Musculista senhousia*), was present in more than 70 percent of the samples, making it the most widely distributed trawl-caught invertebrate in the Bay. Other common invertebrates

present in at least one-third of the samples included two undescribed species of sponge, the ascidian tunicate *Microcosmus squamiger*, the bivalve *Argopecten ventricosus*, and the gastropod *Crepidula onyx*. *Musculista senhousia*, together with another nonindigenous species, *Microcosmus squamiger*, accounted for over 50 percent of the total catch (Bay et al. 2000).

NBPL also supports efforts to recover abalone species in Southern California. The CDFW developed a recovery and management plan for abalone species in 2005 (CDFW 2005). Abalone species identified within the plan include red abalone (*Haliotis rufescens*), green abalone (*H. fulgens*), pink abalone (*H. corrugate*), white abalone (*H. sorenseni*), pinto abalone (*H. kamtschatkana*), black abalone (*H. cracherodii*), and flat abalone (*H. walallensis*) (CDFW 2005). NBPL partners with Cabrillo National Monument staff for a combined abalone monitoring program along the Point Loma peninsula. Key locations identified in the 2005 plan for recovery of red, green, pink, black, pinto, and flat abalone species at NBPL include:

- La Jolla (Point La Jolla to Bird Rock)
- Point Loma (Mission Bay to Ratkay Point)
- Point Loma (Ratkay Point to Ballast Point)

Underwater Noise

Ambient underwater noise is created from both natural and manmade sources and varies greatly in both frequency and sound pressure level. Natural underwater noise can come from precipitation (up to 80 dB re 1 µPA [decibels referenced to 1 µPa, or underwater dB] for heavy rainfall), wind on the water surface creating a wave action (ranging from 20 dB to 80 dB are 1 µPa for sea states of 0.5 to 6, respectively), and biological sources such as whales (125-175 dB re 1 µPa for bottlenose dolphin whistles) and snapping shrimp (183-189 dB re 1 µPa) (Discovery of Sound in the Sea [DOSITS] 2011).

Boats and other vessels are sources of underwater noise as well. Commercial shipping is the major manmade contributor to ocean noise sources. Distant ships contribute to the background noise over large geographic areas (Hildebrand 2004). The amount of noise vessels generate very by size, speed, engine type, and hull materials but can range from 157 to 182 decibels (dB) re 1 µPa at 3 feet (Kipple and Gabriele 2007). Small vessels such as those used for eco-tourism, pleasure boating, and recreational fishing can also generate loud underwater sounds with peak source levels approaching 200 dB 1 µPa during gear shifts (Jensen et al. 2009). Underwater noise observations of vessel traffic during monitoring activities for the NBPL Fuel Pier project recorded a typical ambient underwater noise level in San Diego Bay of 129.6 dB Root Mean Square (RMS, NAVFAC SW 2019). Other sources of underwater noise include use of sonar and echo sounders and seismic exploration (Hildebrand 2004). Terrestrial sources of underwater noise at industrial waterfronts include cranes, generators, and other types of mechanized equipment on wharves or the adjacent shoreline.

Two common metrics used to measure underwater sound are the peak sound pressure level (Peak) and the RMS SPL. The former is the instantaneous maximum positive or negative pressure observed during the impulse; the latter represents the mean square pressure level of the pulse and is the metric used by the NMFS as a criterion for judging noise impacts to marine mammals. Ambient noise levels in northern San Diego Bay were measured at from 128 dB (NAVFAC 2014b) to 136.4 dB (NAVFAC SW 2016a). Underwater noise levels associated with dredging are expected to be similar to marine mammal thresholds for Level B (behavior) but would not rise above ambient levels in northern San Diego Bay. All underwater noise associated with the Proposed Action would be lower than Level A (injury) thresholds

for all functional hearing groups (see Table 3-8 in Section 3.4, *Noise*). After the proposed dredging and disposal operations are completed, background noise levels would return to levels presently found in the area. No long-term noise effects would occur as a result of the proposed project.

3.3.3 Environmental Consequences

This analysis focuses on fish and wildlife or habitat types that are important to the function of the ecosystem or are protected under federal or state law or statute. Regulatory requirements to be satisfied for the Proposed Action prior to completion of the NEPA process include informal ESA Section 7 consultation with NMFS and consultation with NMFS regarding project effects on EFH (see Appendix C).

The Navy prepared and submitted a consultation letter to NMFS on 1 April 2021. The Navy is still waiting for response from NMFS regarding the Navy's proposed analysis that the Proposed Action may affect, but is not likely to adversely affect, federally listed species and/or federally designated critical habitats (see Appendix C).

In conformance with the Navy Policy Regarding EFH Assessments and Consultations (Navy 2011b), the Navy prepared and submitted an EFH Assessment for consultation with NMFS. The Navy is still waiting for response from NMFS regarding the Navy's proposed compensatory mitigation (see Appendix C).

Because the Proposed Action would involve dredging and sediment discharge, a CWA Section 401 Water Quality Certification(s) from the San Diego RWQCB and a CWA Section 404 and RHA Section 10 permit(s) from USACE would be obtained before implementation of the Proposed Action.

Underwater Noise

The Proposed Action would generate underwater noise during dredging at the Pier 5000 SSI berth expansion area when the dredge enters and exits the water, impacts the bottom, and scrapes sediment off the bottom. Additional underwater noise generation would occur during transportation (engine noise) and in-water disposal of dredged material (sediment entering the water from the barge). Underwater noise transmission is highly variable and site-specific, because it is strongly influenced by the acoustic properties of the bottom and surface as well as by variation in sound speed within the water column. Maintenance dredging already occurs in the vicinity of the project area, and dredging for the project would produce similar minor, temporary noise impacts. Background noise within industrial harbor areas similar to the project location have been recorded at an average level of 129.6 dB RMS (NAVFAC SW 2019). The expected SEL from dredging activities would be 99-124 dB at 150 m (Jones et al. 2015).

3.3.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to biological resources. Therefore, no significant impacts to biological resources would occur with implementation of the No Action Alternative.

3.3.3.2 Proposed Action (Preferred Alternative) Potential Impacts

The study area for the analysis of effects to biological resources associated with the Proposed Action includes the Pier 5000 SSI berth expansion area as well as transit routes to and from either nearshore replenishment sites or a designated ocean disposal site.

Impacts to biological resources associated with the Proposed Action could occur during dredging and sediment transport and disposal. The proposed dredge footprint parallels the northeastern side of the

pier in the Pier 5000 SSI berth expansion area. Activities described below with potential to impact biological resources include turbidity noise, and vessel / equipment strikes associated with dredging activities. Because the project would involve dredging activities, a CWA Section 401 Water Quality Certification from the RWQCB and a CWA Section 404 / Rivers and Harbors Act Section 10 permit from USACE would be obtained before implementation of the Proposed Action. No take of marine mammals is anticipated under the Proposed Action.

Vegetation

Vegetation includes terrestrial plant as well as freshwater aquatic communities and constituent plant species. No terrestrial upland and shoreline habitat occurs directly within the project area. Further, all project activities would occur within the near- or offshore marine environment. Therefore, no effects to terrestrial upland or shoreline habitat would occur with implementation of the Proposed Action.

Wildlife

As previously described, no terrestrial or shoreline habitat would be impacted by the Proposed Action. Temporary project-related impacts to terrestrial wildlife species could occur from noise or lighting changes associated with dredging and offshore sediment disposal activities. Increases in noise levels from dredging activities to the ambient noise environment as perceived from shore by terrestrial species would be buffered by distance from the project area to upland habitats. Further, no terrestrial-restricted species, including orange-throated whiptail (*Aspidoscelis hyperythra*) or Pacific pocket mouse (*Perognathus longimembris pacificus*), would occur within the in-water project area and would not be impacted by the Proposed Action. Therefore, project-related impacts to terrestrial reptiles and mammals would be less than significant.

Birds

Project activities would result in increases in noise and human activity and decreases in water quality in the project area during dredging and sediment transport and disposal. These activities would disturb marine birds, and non-marine birds that may forage in the project area, covered under the MBTA, including, but not limited to, California least tern, osprey, and California brown pelican. Dredging activities would occur within a 0.44-acre area and would last approximately 10 days. Birds would likely avoid the project area during these activities. Dredging and sediment disposal would also result in small-scale alterations in foraging conditions and/or prey availability in the immediate vicinity of project activities. The project area is routinely subject to elevated noise and activity of workers and equipment associated with common industrial practices. Because the project area is developed, and similar resting and foraging habitats occur nearby, common shorebirds and waterbirds would move to other nearby, similar habitats if disturbed and then return when the project is complete. No dredging activities would occur during the California least tern breeding season without prior consultation with the USFWS. Further, sediment disposal would occur offshore and would not affect western snowy plover habitats along the coast, including those at Naval Air Station North Island. Therefore, implementation of the Proposed Action would not have a significant adverse effect under the MBTA and there would be no significant impacts to other non-migratory marine bird habitat or populations.

Marine Habitats and Vegetation

Dredging activities for the Proposed Action would cause minor and short-term impacts to existing unvegetated soft-bottom benthic communities within the Pier 5000 SSI berth expansion area. Organisms occurring in the immediate area would be lost or displaced during dredging activities, either directly by

equipment and noise associated with these activities or indirectly by exposure to short-term changes in suspended sediments, turbidity, dissolved oxygen, or light diffusion. Elevated turbidity levels and associated resuspended sediments would decrease to background levels within a period of one hour after dredging activities cease. Potential impacts to plankton communities could include a localized decrease in primary productivity due to reduced photosynthesis. However, sediment resuspension, increased turbidity, or chemical changes would be limited to the areas of bottom disturbance and would persist for the duration of dredging activities. Turbidity would vary spatially based on currents and sediment grain size. Turbidity plumes from dredging are expected to persist for less than 1 hour following disturbance. Therefore, the increased turbidity would not significantly impact benthic or water column habitats in the project area.

The proposed dredge area in the Pier 5000 SSI berth expansion area is, and would remain, deep subtidal habitat at depths greater than -20 feet. As such, no permanent change in habitat would result from the Proposed Action. Any benthic flora within the immediate project area would be eliminated by the dredging activities because of site excavation and substrate removal. However, given the depths of dredging and recent submerged aquatic vegetation surveys near the Proposed Action area (Merkel & Associates 2020a, 2020b, 2020c), no vegetation is expected to occur within the dredging footprint. Invertebrates within the dredge footprint would either be lost or relocated with the sediment and are expected to recover from the disturbance upon completion of the dredging activities. Any fish in the area would be capable of avoiding project equipment. Any impacts to marine algae and meioflora are localized, minimal, and not significant. Dredged material would be moved to a previously permitted disposal site. Therefore, dredging may have some adverse, but less than significant, impacts to marine life.

A survey for *Caulerpa* consistent with NMFS and CDFW requirements would be conducted before initiating in-water project activities (NMFS 2008). If *Caulerpa* is found in the project area during this survey, NMFS--approved *Caulerpa* Control Protocols would be followed including additional surveys and eradication (mechanical or chemical removal) if necessary. Therefore, implementation of the Proposed Action would not result in significant impacts to special aquatic sites associated with the spread of *Caulerpa*.

Eelgrass is the only special aquatic site found in the vicinity of the project area. Eelgrass is present approximately 960 feet (292.6 meters) north and 765 feet (233.2 meters) south of the project area (Merkel & Associates, Inc. 2020a). Although no direct impacts are anticipated from dredging activities, potential indirect impacts such as increased turbidity and sedimentation may occur. In conjunction with the *Caulerpa* survey, a pre-dredging eelgrass survey would be conducted. Further, a post-dredging eelgrass survey would be conducted and results would be compared with both historical data and results from the pre-dredging survey to determine potential project-related impacts. If impacts are identified for eelgrass, the NMFS-approved Southern California Eelgrass Mitigation Policy (NMFS 2014) would be followed including potential in-kind mitigation or contributions to mitigation banks or in-lieu fee programs that would protect existing eelgrass or replace eelgrass habitat off-site. Therefore, dredging activities would not result in significant impacts to marine plants or special aquatic sites.

Marine Wildlife

<u>Marine Mammals</u>

As defined above, the MMPA defines ‘‘harassment’’ as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing

disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment) (50 CFR §216.3s). NMFS (2018) specified underwater and airborne acoustic threshold criteria for both Level A and Level B harassment (an action that results in a change in behavior attributable to human activity may be considered a "take by harassment," depending on the circumstances. Table 3-7), with characterization of Level A impacts based on duration of exposure (cumulative Sound Exposure Level [SEL_{cum}]) or peak sound pressure levels, as well as by and functional hearing groups. The functional hearing groups take into account hearing frequencies of marine mammals when assessing impacts of underwater noise. The Level B threshold criteria identified in Table 3-7 are based on an assessment of noise relative to decibels in RMS, which is the square root of the mean of the squared pressure level(s) as measured over a specified time-period. Table 3-7 provides the noise thresholds at which marine mammals are considered harassed or are likely to be injured by noises generated by marine construction. The underwater noise thresholds presented are only for non-impulsive noises, such as dredging, that do not generate sharp, instantaneous sounds (i.e., impulsive sources such as pile driving). These thresholds are applicable to any noise-generating marine activity, regardless of the source of the sound production.

Table 3-7. Marine Mammal Injury and Disturbance Thresholds for Noise Generated by Dredging Operations

Functional Hearing Group Low Frequency Cetaceans	Airborne Noise Thresholds	Underwater Noise Thresholds Non-Impulsive, Continuous Noise Sources)	
	Sound Pressure Level (RMS re: 20µPa)	Disturbance Threshold (RMS re:1 µPa)	Injury Threshold (PTS) SELcum (24-hr) (re:1 µPa^2-s)
	Level B Harassment	Level B Harassment	Level A Harassment
Low-frequency Cetaceans	Not Applicable	120 dB	199 dB
Mid-frequency Cetaceans		120 dB	198 dB
High-frequency Cetaceans		120 dB	173 dB
Phocid Pinnipeds (e.g., Harbor Seals)	90 dB RMS (unweighted)	120 dB	201 dB
Otariid Pinnipeds (e.g., Sea Lions)	100 dB RMS (unweighted)	120 dB	219 dB

Note*:* dB = decibels; RMS = root-mean square; RMS re: 1 µPA = root-mean square referenced to one micro-Pascal; PTS = permanent threshold shift
Source*:* NMFS 2018; Southall et al. 2007; 71 FR 3260 Jan. 20, 2006.

Several species of marine mammals are known to occur in northern San Diego Bay, with the three primary species being California sea lions, harbor seals, and bottlenose dolphin. However, marine mammal observations in the specific Project Area are rare (NAVFAC 2015; 2016b and c; 2017a and b; 2018). There are known California sea lion haul-out locations near the project area (with the closest being approximately 1,250 feet north of Pier 5000) and a known haul-out location for harbor seals on Point Loma, which is to the west of Ballast Point. Potential impacts to marine mammal species would primarily be from noise generated during dredging activities or vessel movement during sediment transportation. Dredging operations would result in the generation of noise that may include dredge engine and exhaust noise; crane engine and exhaust noise; rope noise and bucket water splash; and various noises associated with the boom and grab, the bucket hitting the bottom during dredge, and the bucket closing and opening during construction. Based on a previous studies of underwater noise associated with dredging, the

maximum underwater noise associated with dredging operations were associated with bucket impact on the substrate which were measured at 124 decibels (dB) re 1 µPa at 150 m (Jones et al. 2015). While this is louder than the established non-impulsive Level B threshold criteria (NMFS 2018) identified in Table 3-7 (120 dB), it is close to recorded ambient levels, with median values ranging between 126.0 and 146 dB re 1 µPa, measured in northern San Diego Bay (NAVFAC SW 2020c) and underwater Level B (behavioral) harassment from dredging activities are not expected. Furthermore, based on the best management practices identified in Section 2.5, marine species monitoring would be implemented to reduce the likelihood of any marine mammal being exposed to noise levels that may cause a behavioral disturbance.

As discussed in Section 3.5, *Transportation and Traffic* minimal increase in marine vessel traffic will result from implementation of the Proposed Action. Further, vessels would follow speed limits and BMPs to include visual checks for marine mammals to avoid vessel strikes.

All avoidance and minimization measures described in Section 2.5, *Best Management Practices Included in the Proposed Action* would be implemented to avoid or minimize potential impacts to marine mammals. In addition, the project surface area would be visually scanned for the presence of marine mammals 15 minutes prior to commencement of in-water dredging activities.

Disruptions to foraging or movement behaviors would be temporary, restricted to the 10-day dredging activity duration, and not significant, with wildlife activities returning to normal patterns upon dredging completion. Given the low levels of disturbance, and the avoidance and minimization measures, project activities are not expected to adversely affect marine mammals. Furthermore, the project area would represent a small percentage of the available resources, project activities are considered localized, and impacts would cease upon completion of dredging activities. Therefore, there would be no effect to marine mammals due to the Proposed Action and there would be no reasonably foreseeable “take” of marine mammals as defined by the MMPA.

<u>Sea Turtles</u>

Green sea turtles in the Bay are more common in the South Bay where larger areas of eelgrass are present but transient turtles occur in the North Bay as they move in and out of the Bay and may forage in eelgrass beds northwest of Pier 5000 (NAVFAC SW 2015, 2017). Dredging activities have the potential to disturb sea turtles in the immediate vicinity because of vessel movement, construction-related noise, and water quality degradation. Vessel movement is associated with all stages of dredging, including transit to and from the project area, transit to and from the deposition site, and operation of the dredger. Collision with vessels is a known cause of injury and mortality to sea turtles. However, given the slow speed of dredgers, this collision is unlikely. Further, other support vessels (e.g., barges) are limited in number, would be required to maintain established speeds, and are consistent with baseline conditions. Direct injury from the use of a clam shell dredge is also a concern for sea turtles resting on the bottom; however, clam shell dredgers have been found to be loud enough that sea turtles are alerted to their presence and can move to avoid the dredge (NOAA 2010). Although no noise thresholds have been established for sea turtles, NMFS often adopts thresholds established for other marine mammals.

As stated above, the maximum sound emission level of dredging operations (124 dB re 1 µPa-m at 150 meters) would be similar to observed background noise in San Diego Bay (average 129.6 dB rms re 1 µPa) (Jones et al. 2015; NAVFAC SW 2020c). Further dredging activities would occur within a 0.44-acre area in the Bay and would last approximately 10 days; therefore, these impacts would be temporary and limited in their geographic scope and would be less than significant. Additionally, visual monitoring for sea turtle and a prohibition on employing hydraulic dredging methods would be incorporated as BMPs,

as described in Section 2.5, *Best Management Practices Included in the Proposed Action* to ensure no significant impacts to turtles.

Fisheries

Impacts to fish communities in the project vicinity would be primarily associated with noise and with disturbance of bottom sediments and unvegetated soft bottom habitat during dredging activities. Sediment resuspension and increased turbidity would be limited to the areas of bottom disturbance and would persist for less than one hour following the disturbance. Fish present during project activities are capable of avoiding project equipment and areas affected by increased turbidity and increased noise from dredging. Greater potential for impacts would exist if there were substantial amounts of fine sediments and organisms in the potential dredging areas. However, current velocities in this area of the San Diego Bay (up to 2.9 knots) would likely reduce turbidity to ambient levels within several hours of the cessation of dredging activities (NOAA Tides and Currents 2021). Dredging activities are sometimes beneficial in terms of suspending infauna and epifauna, which may temporarily enhance fish feeding activities. Subject to the terms and conditions identified in the project-specific CWA Section 404 and Rivers and Harbors Act Section 10 permits issued by USACE, precautionary measures would be implemented to minimize turbidity associated with dredging activities. Precautionary measures may include operational controls implemented by the dredger, such as reducing bucket speed. A turbidity threshold may be adopted or alternative measures identified during the project-specific USACE permitting process would be implemented. Impacts to fish species would be temporary and limited in nature because of the focused duration of dredging activities and the quantity of sediment (approximately 6,365 cy) dredged in a 0.44-acre area of the Bay. Therefore, implementation of the Proposed Action would not result in significant impacts to fish communities.

Fish species occurring in the immediate area would be displaced during project activities, either directly by equipment and noise associated with these activities or indirectly by short-term changes in suspended sediments, turbidity, dissolved oxygen, and light diffusion. Based on a previous study conducted in both coarse sand/gravel and unconsolidated sediment, the noise associated with bucket/clamshell dredging operations is anticipated to range from 99 decibels (dB) for the bucket closing to 124 dB for the bucket contacting the bottom (Jones et al. 2015). Injury noise levels are defined by NOAA-Fisheries as those noise levels above 206 peak dB (dB_{PEAK}) and 187 sound exposure level dB (dB_{SEL}) for fish over 2 grams and noise levels above 206 dB_{PEAK} and 183 dB_{SEL} for fish under 2 grams. Behavioral disturbance is defined by noise levels above 150 root mean square dB (dB_{RMS}) (California Department of Transportation [Caltrans] 2015). Noise levels therefore are under both behavior and injury guidelines. Dredging activities would occur over a period of approximately 10 days within a 0.44-acre portion of the Bay. Thus, impacts to fish from underwater noise would not be significant because of their limited geographic and temporal scale, and fish species would return to the project area following the completion of dredging activities. Impacts to EFH are discussed below.

Essential Fish Habitat

Four managed coastal pelagic fish species (jack mackerel, northern anchovy, Pacific mackerel, and Pacific sardine) and seven managed groundfish species (curlfin sole, California scorpionfish, English sole, grass rockfish, leopard shark, soupfin shark, and spring dogfish) are likely to occur in the project area (NAVFAC SW 2000; Allen et al. 2002; Pondella and Williams 2009, and Williams *et at*. 2016; 2019). Northern anchovy and Pacific sardine can be found throughout the Bay. Jack mackerel were found only at the North Bay survey area and Pacific mackerel were found at all locations except South Bay (Allen et al. 2002). All of

these species are highly transient, are not tied to artificial substrates, and routinely experience turbid and noisy conditions from natural processes and ship traffic within the Bay. Impacts from dredging activities of either project alternative would be the same as described for other fish communities in the "Fisheries" subsection above. Namely, noise associated with dredging activities would temporarily displace EFH species within a limited scope, although no fish would be injured. Other effects would occur from increased suspended sediments and turbidity and increased underwater noise levels from dredging activities. These impacts would result in adverse effects to EFH, but no effect at the population level, per the MSFCMA and would not be considered significant.

As discussed previously, turbidity plumes would be expected to persist for less than 1 hour following disturbance. Subject to the terms and conditions in the project-specific USACE Section 404 and Section 10 permits, avoidance and minimization measures would be implemented to alleviate turbidity associated with dredging activities. Avoidance and minimization measures may include turbidity monitoring or other alternative measures developed during the USACE permitting process. A turbidity threshold would be adopted or alternative measures identified during the project-specific USACE permitting process would be implemented. With implementation of these measures, no direct or indirect impacts from turbidity or sedimentation are anticipated on eelgrass beds located approximately 960 feet north and 765 south of the project area (Merkel & Associates 2017; 2020a).

Although the outer edges of piers support increased fish biomass, abundance, and species richness, EFH species expected to occur in the project area are highly mobile are not closely tied to artificial substrates. If present, such species would likely leave the immediate project area during dredging and return when completed.

The temporary reduction in invertebrate populations may indirectly effect fish and other organisms feeding on invertebrates by reducing their forage base. Nevertheless, the effect would be temporary as colonization of the sands would begin almost immediately and the development of the invertebrate prey base would proceed naturally. The Proposed Action would result in the disposal of approximately 6,365 cy of sediment at the LA-5 ODMDS that has been previously reviewed and permitted for dredged sediment disposal (USEPA 1987). During that process, evaluations for the site as a receiving location for dredged material placement had been performed for impacts to habitat, and BMPs/mitigation measures have been identified for implementation during dredge deposition. Implementation of the Proposed Action would follow all required protocols established at replenishment/disposal sites. Hence, there would be minimal, short-term adverse effects on EFH and no effect at the population level from dredging per the MSFCMA, which would not be significant under NEPA. Impacts to EFH under the MSFCMA are discussed in more detail in Appendix C.

Benthic Invertebrates

Disposal of sediment at a nearshore replenishment site would result in direct burial impacts to marine biota. The loss of benthic organisms within the replenishment site footprint would be an expected and unavoidable impact of beach replenishment projects. Most invertebrates within the replenishment site footprint would not be expected to survive, but some mobile animals would be able to burrow out from the outer or leading edges of the beach fills. Sediment disposal would result in a temporary reduction in benthic invertebrate biomass and alteration of the benthos species composition at the replenishment site. Although full recovery of the benthic community after a disturbance may take a few years (Dernie et al. 2003; Merkel & Associates, Inc. 2010), the forage base would begin to establish almost immediately

after cessation of the disturbance. Recovery may occur by migration of invertebrates from unaffected surrounding areas as well as settlement from the plankton.

In summary, the Proposed Action would result in minor and short-term impacts to existing unvegetated soft-bottom benthic communities within the project area; however, sediment resuspension, increased turbidity, or chemical changes would be limited to the areas of bottom disturbance and would persist for less than one hour following disturbance. The proposed dredge area is, and would remain, deep subtidal habitat. As such, no permanent change would result from dredging. Dredging activities would not result in significant impacts to marine plants or special aquatic sites. A survey for *Caulerpa* would be conducted before initiating in-water project activities, consistent with NMFS and CDFW requirements. Impacts to marine biota from sediment disposal would be temporary and less than significant. Therefore, implementation of the Proposed Action would not result in significant impacts to habitats and communities and no significant effects to marine communities or special aquatic sites would occur.

Overall, across each biological resource, implementation of the Proposed Action would not result in significant impacts.

3.3.3.3 Reduced Dredging Footprint Alternative

The Reduced Dredging Footprint Alternative would dredge approximately 4,950 cy, or 77 percent, of the volume of the Proposed Action, thereby reducing the duration and scale of the activity. This alternative would have the same avoidance and minimization measures and the same minimal and temporary impacts as the Proposed Action. Therefore, there would be no significant impacts to marine biological resources as a result of the Reduced Dredging Footprint Alternative.

3.3.3.4 Mitigation Measures

Because potential impacts to marine biological resources would be localized, would cease upon completion of dredging activities, and would not be significant under the Proposed Action or the Reduced Dredging Footprint Alternative, no mitigation measures are proposed. However, BMPs detailed in Section 2.5 for the treatment of biological resources would act as a failsafe to prevent adverse impacts. These measures include visual monitoring for green sea turtles or marine mammals during dredging and sediment disposal and avoidance of California least tern nesting season.

3.4 Noise

This discussion of noise includes the types or sources of noise and the associated sensitive receptors in the human environment. Noise in relation to biological resources and wildlife species, specifically underwater noise and marine mammals) is discussed in Section 3.3, *Marine Biological Resources*.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound is all around us. The perception and evaluation of sound involves three basic physical characteristics:

- Intensity – the acoustic energy, which is expressed in terms of sound pressure, in decibels (dB)
- Frequency – the number of cycles per second the air vibrates, in Hertz (Hz)
- Duration – the length of time the sound can be detected

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels (e.g., through occupational exposure)

can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events is diverse and is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual.

3.4.1 Basics of Sound and A-Weighted Sound Level

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. This vast range means that using a linear scale to represent sound intensity is not feasible. The dB is a logarithmic unit used to represent the intensity of a sound, also referred to as the sound level. All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second or Hz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" scale that filters out very low and very high frequencies in order to replicate human sensitivity. It is common to add the "A" to the measurement unit in order to identify that the measurement has been made with this filtering process (dBA). In this document, the dB unit refers to A-weighted sound levels. Table 3-8 provides a comparison of how the human ear perceives changes in loudness on the logarithmic scale.

Table 3-8. Subjective Responses to Changes in A-Weighted Decibels

Change	*Change in Perceived Loudness*
3 dB	Barely perceptible
5 dB	Quite noticeable
10 dB	Dramatic – twice or half as loud
20 dB	Striking – fourfold change

Figure 3-5 (Cowan 1994) provides a chart of A-weighted sound levels from typical noise sources. Some noise sources (e.g., air conditioner, vacuum cleaner) are continuous sounds that maintain a constant sound level for some period of time. Other sources (e.g., automobile, heavy truck) are the maximum sound produced during an event like a vehicle pass-by. Other sounds (e.g., urban daytime, urban nighttime) are averages taken over extended periods of time. A variety of noise metrics have been developed to describe noise over different time periods, as discussed below.

3.4.2 Noise Metrics

A metric is a system for measuring or quantifying a particular characteristic of a subject. Since noise is a complex physical phenomenon, different noise metrics help to quantify the noise environment. Several metrics and analysis tools provide more detailed noise exposure information for the decision process and improve the discussion regarding noise exposure.

3.4.2.1 Equivalent Sound Level

A cumulative noise metric useful in describing noise is the Equivalent Sound Level (L_{EQ}). L_{EQ} is the continuous sound level that would be present if all of the variations in sound level occurring over a specified time period were smoothed out as to contain the same total sound energy. The L_{EQ} calculated for a daily average time period without penalties for nighttime work (which were not considered because

they are not part of the Proposed Action) is a 24-hour equivalent sound level, abbreviated $L_{EQ}(24)$. Other typical time periods for L_{EQ} are 1 hour and 8 hours.

3.4.2.2 Sound Exposure Level

The Sound Exposure Level (SEL) metric is a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. SEL provides a measure of total sound energy and captures the total sound energy from the beginning of the acoustic event to the point when the received no longer hears the sound. It then condenses that energy into a 1-second period of time and the metric represents exposure of transient sounds.

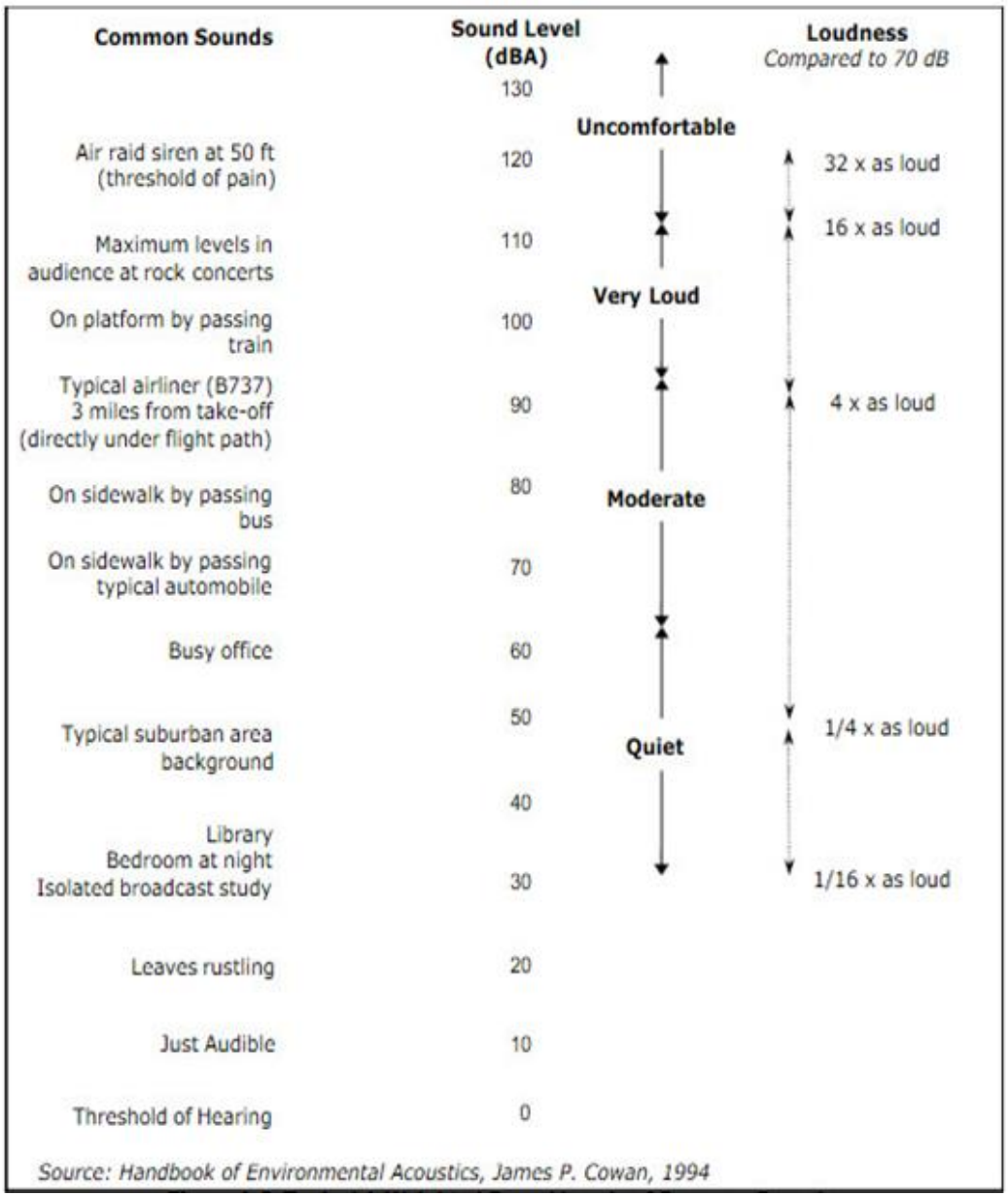


Figure 3-5. A-Weighted Sound Levels from Typical Sources

3.4.2.3 Maximum Sound Level

The highest A-weighted sound level measured during a single event where the sound level changes value with time is called the maximum A-weighted sound level or L_{MAX}. During time-varying noise events, the noise level starts at the ambient or background noise level, rises to the maximum level to the receptor, and returns to the background level as the noise recedes into the distance. L_{MAX} defines the maximum sound level occurring for a fraction of a second. SEL is usually greater than the L_{MAX} because an individual overflight takes seconds and the L_{MAX} occurs instantaneously.

3.4.2.4 Number of Events Above a Threshold Level

The "Number of Events Above a Threshold Level" metric provides the total number of noise events that exceed a selected noise level threshold during a specified period of time (DoD Noise Working Group 2009). Combined with the selected noise metric, L_{MAX} or SEL, the Number of Events Above metric is symbolized as NAXXmetric (NA = number of events above, XX = dB level, metric = L_{MAX} or SEL). For example, the L_{MAX} and SEL Number of Events Above metrics are symbolized as NA75L_{MAX} and NA75SEL, respectively, with 75 dB as the example dB level.

3.4.3 Noise Effects

An extensive amount of research has been conducted regarding noise effects including annoyance, speech interference, sleep disturbance, noise-induced hearing impairment, nonauditory health effects, performance effects, noise effects on children, effects on domestic animals and wildlife, property values, structures, terrain, and archaeological sites. These effects are summarized below.

3.4.3.1 Annoyance

The primary effect of noise exposure on communities is long-term annoyance, defined by USEPA as any negative subjective reaction on the part of an individual or group. The scientific community has adopted the use of long-term annoyance as a primary indicator of community response (Federal Interagency Committee on Noise 1992).

3.4.3.2 Potential Hearing Loss

People living in high noise environments for an extended period of time (40 years) can be at risk for hearing loss called Noise Induced Permanent Threshold Shift (NIPTS). The NIPTS defines a permanent change in hearing level, or threshold, caused by exposure to noise (USEPA 1982). According to USEPA (1974), changes in hearing level of less than 5 dB are generally not considered noticeable. There is no known evidence that an NIPTS of less than 5 dB is perceptible or has any practical significance for the individual affected. Further, the variability in audiometric testing is generally assumed to be plus or minus 5 dB. The preponderance of available information on hearing loss risk is from the workplace with continuous exposure throughout the day for many years.

3.4.3.3 Speech Interference

Speech interference can cause disruption of routine activities, such as enjoyment of radio or television programs, telephone use, or family conversation, giving rise to frustration or irritation. In extreme cases, speech interference may cause fatigue and vocal strain to individuals who try to communicate over the noise. In this EA, speech interference is measured by the number of daily indoor events (from 7 a.m. to

10 p.m.) that exceed 50 dB L_{MAX} at selected locations. This metric also accounts for noise level reduction provided by buildings with windows open or closed.

3.4.3.4 Classroom Criteria and Noise Effects on Children

Research suggests that environments with sustained high background noise can have variable effects, including effects on learning and cognitive abilities and various noise-related physiological changes. Analyses for school-aged children are similar to speech interference by using the indoor number of events exceeding 50 dB L_{MAX}, but also has the added restriction of using an outdoor equivalent noise level of 60 dB L_{EQ}(9 hour). This represents a level that a person with normal hearing can clearly hear a speaker (teacher) speaking at a level of 50 dB indoors in a classroom setting.

3.4.3.5 Workplace Noise

In 1972, the National Institute for Occupational Safety and Health (NIOSH) published a criteria document with a recommended exposure limit of 85 dBA as an 8-hour time-weighted average. This exposure limit was reevaluated in 1998 when NIOSH made recommendations that went beyond conserving hearing by focusing on the prevention of occupational hearing loss. Following the reevaluation using a new risk assessment technique, NIOSH published another criteria document in 1998, which reaffirmed the 85 dB recommended exposure limit (NIOSH 1998).

3.4.4 Nonauditory Health Effects

Studies have been conducted to examine the nonauditory health effects of aircraft noise exposure, focusing primarily on stress response, blood pressure, birth weight, mortality rates, and cardiovascular health. Exposure to noise levels higher than those normally produced by aircraft in the community can elevate blood pressure and also stress hormone levels. However, the response to such loud noise is typically short in duration: after the noise goes away, the physiological effects reverse and levels return to normal. In the case of repeated exposure to aircraft noise, the connection is not as clear. The results of most cited studies are inconclusive, and it cannot be conclusively stated that a causal link exists between aircraft noise exposure and the various type of nonauditory health effects that were studied (DoD Noise Working Group 2009).

3.4.4.1 Noise Effects on Children

Research on the impacts of noise on the cognitive abilities of school-aged children has received more attention in recent years. For instance, several studies suggest that aircraft noise can affect the academic performance of schoolchildren. Physiological effects in children exposed to aircraft noise and the potential for health effects have been the focus of limited investigation (DoD Noise Working Group 2009).

3.4.5 Regulatory Setting

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that would reduce sound levels to acceptable limits.

Land use compatibility with differing noise levels is regulated at the local level, although the federal government has established suggested land use compatibility criteria for different noise zones (FICUN 1980). Based on the FICUN Land Use Guidelines, residential areas and schools are considered compatible up to 65 dB DNL; outdoor recreational activities such as fishing and golfing are compatible with noise levels up to 70 dB DNL; and parks are compatible with noise levels up to 75 dB DNL (FICUN 1980).

The Noise Element of the City of San Diego General Plan provides land use and noise compatibility guidelines and amendments to noise elements of the City of San Diego's Plan were approved in 2015 (City of San Diego 2008, 2015). The City of San Diego has an exterior noise level standard of 65 dB Community Noise Equivalent Level (CNEL) for noise-sensitive land uses (e.g., residential areas, hospitals, childcare facilities). This standard protects sensitive land uses such as these from high noise levels and guides the city's future planning decisions (City of San Diego 2007). The City of San Diego construction noise ordinance places a restriction of an average sound level (L_{EQ}) of 75 dB or less during the 12-hour period from 7:00 a.m. to 7:00 p.m. (City of San Diego 2010a). The ordinance also limits construction activity outside of these hours and during certain days (i.e., Sundays and major holidays) where it may create an excessive impact on neighboring sites (City of San Diego 2010a).

For listeners with normal hearing and fluency in the language, complete sentence intelligibility can be achieved when the signal-to-noise ratio (i.e., the difference between the speech level and the level of the interfering noise) is in the range of 15 to 18 dB (Lazarus 1990). The American National Standard Institute (ANSI) recommends at least a 15-dB signal-to-noise ratio in classrooms, to ensure that children with hearing impairments and language disabilities are able to enjoy high speech intelligibility (ANSI 2002). As such, provided that the average adult male or female voice registers a minimum of 50 dB Lmax in the rear of the classroom, the American National Standard Institute standard requires that the continuous background noise level indoors must not exceed a L_{EQ} of 35 dB (assumed to apply for the duration of school hours).

3.4.6 Affected Environment

Many components of the Proposed Action may generate noise and warrant analysis as contributors to the total noise impact. The federal government supports conditions free from noise that threaten human health and welfare and the environment. Response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and whoever hears it (the receptor), receptor sensitivity, and time of day. A noise-sensitive receptor is defined as a land use where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities often include residential dwellings, hospitals, nursing homes, educational facilities, and libraries. Sensitive receptors may also include noise-sensitive cultural practices, some domestic animals, or certain wildlife species. Potentially noise-sensitive wildlife species are discussed in Section 3.3, *Marine Biological Resources*.

3.4.6.1 Airborne Noise Environment at the Installation

The City of San Diego noise ordinances specify separate noise limits for ambient noise and construction noise levels (City of San Diego 2010a). Therefore, in this EA, the proposed project construction noise is analyzed independently of ambient noise levels at the project site and the surrounding area.

Primary noise sources at the NBPL project site are pumps and equipment associated with industrial and naval operations. Nearby ambient sources include vessel traffic in the channel, vehicular traffic, and air

traffic associated with Naval Air Station North Island, the U.S. Coast Guard Air Station, and San Diego International Airport.

The NBPL waterfront area is an industrial area, where ambient (i.e., background) noise levels are typically higher than in residential areas. Common daytime outdoor ambient sound levels for industrial areas range up to 67 dBA (Engineering Toolbox.com 2010). Although the project site is on Navy property and is not subject to municipal requirements, for comparison, the City of San Diego allows ambient noise levels up to 75 dBA in industrial areas (City of San Diego 2007).

Sensitive receptors within NBPL boundaries include the NBPL child development center (daycare facility for military personnel) located at Building 377 on Myers Road, approximately 0.4 mile (2,112 feet) northwest of Pier 5000, and cluster of dormitories for NBPL submarine base personnel on Kerrick Road near Ballast Point approximately 0.3 mile (1,584 feet) south of Pier 5000.

The nearest sensitive receptor outside the NBPL boundary is the suburban residential neighborhood (La Playa) that borders NBPL approximately 1.25 mile to the north northwest of Pier 5000. Typical ambient noise levels range from 40 dBA (quiet residential area) to 84 dBA (diesel truck traveling at 40 miles per hour at a 50-ft distance) in urban areas (City of San Diego 2015). Vehicle traffic on roadways that provide the main access to the Point Loma peninsula (Rosecrans Street and Catalina Boulevard) is the main source of ambient noise in the residential neighborhood (Navy 2007). When there is no major construction activity occurring at NBPL Pier 5000, noise is not intrusive or loud (Navy 2007). Also audible are periodic aircraft from San Diego International Airport, and military aircraft on Naval Air Station North Island. Noise from trucks, along with periodic construction in the area, also contributes to the ambient sound levels. Noise from these sources and NBPL Pier 5000 operational activities are typical and not significant (Navy 2007). The City of San Diego exterior and construction noise ordinances apply at the NBPL property boundary, which is approximately 1.5 mile north of Pier 5000. The Proposed Action area is removed from the shoreline and extends to the federal channel where barges and other ships routinely transit around the clock. The project site is also in the environment of a military waterfront where barges, military ships, ship and facility maintenance operations occur around the clock with some frequency. As such, the proposal to dredge 24 hours per day is consistent with current dredging standards in San Diego Bay and area military land uses. Noise generation associated with the Proposed Action would cease upon completion of dredging activities; therefore, sensitive receptors would not experience any nighttime noise beyond the dredging period of the project.

3.4.7 Environmental Consequences

Analysis of potential noise impacts includes estimating likely noise levels from the Proposed Action and determining potential effects to sensitive receptor sites.

The primary factor considered in determining the significance of noise effects is the extent or degree to which implementation of the alternatives would affect baseline noise environments. The primary issue of concern with regard to noise is the potential for impacts to humans and wildlife. Significant noise impacts would occur if implementation of the alternatives would directly or indirectly do one or both of the following:

- Increase ambient outdoor CNEL levels at noise-sensitive land uses beyond the 65-dB CNEL land compatibility standard for residential, education, and health care land uses; or
- Establish noise-sensitive land use (residential, education, and health care uses) in areas exposed to outdoor ambient noise levels that are higher than the 65-dB land use compatibility standard.

Less stringent guidelines are applied to temporary noise sources that are restricted to daytime hours (such as most construction and demolition activities) unless they affect noise-sensitive land uses and result in CNEL levels more than 10 dB above the respective land use compatibility criteria.

The significance of noise impacts to marine biological resources is considered in Section 3.3. Noise levels generated by the project are not expected to reach the harassment thresholds for which marine mammals are considered harassed or are likely to be injured by noise generated during marine construction.

3.4.7.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline noise levels. Industrial activities currently being conducted in the area would continue, and the area's acoustical environment would remain unchanged. Therefore, no significant impacts due to the noise environment would occur with implementation of the No Action Alternative.

3.4.7.2 Proposed Action Potential Impacts

Airborne Noise

Project activities would involve clamshell dredging. Dredging activities would produce noise from the dredging equipment, tugboats and barges, and associated human activity. Dominant noise sources associated with dredging may include dredge engine and exhaust noise; crane engine and exhaust noise; rope noise and bucket water splash; and various noises associated with the boom and grab, the bucket hitting the bottom during dredge, and the bucket closing and opening during construction. No blasting would take place. Dredging operations would take place during daylight hours for a duration of approximately 10 days.

Noise emissions from mechanical dredging have several different temporal variants that result in short, sudden noise peaks. Often this noise is caused by the occasional scraping of a dredge bucket (e.g., clamshell shovel) along a deck or a sudden impulse sound level as the dredge bucket is opened and emptied onto the barge. Quantitative data for airborne noise levels associated with mechanical dredging are not readily available. Therefore, as a conservative measure in assessing potential project noise from dredging activities, data were obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) program and were based on the use of a backhoe and clamshell shovel. The FHWA RCNM identified noise levels from an operating backhoe would be 73.6 dBA L_{EQ} at 50 feet and 43.5 dBA L_{EQ} at 1,600 feet (U.S. Department of Transportation [USDOT] 2006). With the occasional occurrence of a clamshell shovel dropping, the noise levels increased to 80.3 dBA L_{EQ} at 50 feet and 51.0 dBA L_{EQ} at 1,600 feet (USDOT 2006).

The nearest sensitive receptors to the Pier 5000 dredge site include the NBPL child development center located at Building 377 on Myers Road, about 0.76 miles (4,000 feet) from Pier 5000, and a cluster of dormitories for NBPL personnel on Kerrick Road near Ballast Point about 0.23 miles (1,200 feet) to the south of Pier 5000. As stated above, the La Playa neighborhood is located just north of NBPL about 1.25 mile north northwest of Pier 5000. At 1,584 feet from Pier 5000, the NBPL dormitories are the nearest noise-sensitive receptors to Pier 5000 and would be most likely to experience intermittent, exterior noise levels up to 51.0 dBA L_{EQ} associated with a clamshell shovel dropping. The distance degradation of dredging noise to 51.0 dBA L_{EQ} would then be further reduced by intervening vegetation and structures, further reducing interior noise levels. Therefore, dredging operations, including overnight work, would

not increase ambient outdoor noise levels to greater than 65 dBA and noise-related impacts would be less than significant.

Barges transporting dredged material to a nearshore replenishment site (or LA-5 ODMDS) would also be a source of noise associated with the dredging operations. The sediment transport barges would join with existing vessel traffic in the San Diego Harbor Channel and noise levels would be comparable to ambient noise levels. These barge trips would be consistent with existing airborne noise generation and would not create a noticeable increase in the number of ships or the sound levels associated with current vessel movements in the Bay. Further, any noise resulting from the sediment transport barges would be short-term, so impacts from transporting the dredge material to a nearshore replenishment site or LA-5 ODMDS would not be significant. Sediment disposal at a nearshore replenishment site would occur offshore of coastal areas used for recreation; however, the noise generation associated with operation of the sediment transportation would be functionally similar to operation of private fishing and recreational vessels that is typical in these areas. Sediment disposal at the LA-5 ODMDS would occur offshore and out of range of perception of noise-sensitive receptors. Therefore, sediment disposal at nearshore replenishment sites or the LA-5 ODMDS would not generate significant noise to impact sensitive receptors along the transportation route or at the selected disposal site.

Under the Upland Disposal Option, dredged material would be transported via barge to the CDF at NBSD, allowed to dry, and then transported via truck either to the Otay Landfill approximately 12.2 miles from NBSD or Sycamore Landfill approximately 20.2 miles from NBSD via the San Diego regional road network. The most likely route from NBSD to Otay Landfill would include Harbor Drive, Interstate 5, State Highway 54, and Interstate 805. The most likely route from NBSD to Sycamore Landfill would include Harbor Drive, Interstate 5, Interstate 15, State Highway 52, and Mast Boulevard. Each of these roadways is used by personal and commercial/industrial traffic and transportation of dredged material via truck to either landfill would be consistent with existing roadway airborne noise generation and would not create a noticeable increase in the number of vehicles (see Section 3.5 *Transportation and Traffic*) or the sound levels associated with traffic on the regional road network. Further, the both landfills are existing permitted waste disposal facility and is not considered a noise-sensitive receptor. Therefore, upland sediment disposal would not generate significant noise to impact sensitive receptors along the transportation route or at either landfill.

Summary

In conclusion, noise associated with the Proposed Action would be generally consistent with the industrial waterfront area where dredging would occur, sediment disposal transportation routes, or sediment disposal sites and would not significantly alter the overall airborne or underwater noise environment. Noise from dredging, sediment transportation, and sediment disposal would be short-term. Therefore, implementation of the Proposed Action would not result in significant short or long-term impacts with respect to noise.

3.4.7.3 Reduced Dredging Footprint Alternative Potential Impacts

Under the Reduced Dredging Footprint Alternative, the dredging activities would occur over a reduced area compared with the Proposed Action and would therefore occur over shorter period. However, the minimum distance of dredging activities from sensitive receptors would not change because reductions would not occur in the portion of the project area nearest sensitive receptors. Impacts under the Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action because there

would be no difference other than duration of dredging activities and number of barge trips under the Reduced Dredging Footprint Alternative. Vehicles transporting dredged material to nearshore replenishment sites or LA-5 ODMDS would follow the same routes as used in the Proposed Action and would not travel in close proximity to any noise-sensitive receptors. Therefore, implementation of this action alternative would not result in significant impacts to the noise environment.

3.5 Transportation and Traffic

This discussion of transportation includes all of the land, and sea routes with the means of moving passengers and goods. A transportation system can consist of any or all of the following: roadways, railways, and waterways, and can be looked at on a local or regional scale. The primary source of project associated traffic would be the result of vessel transportation between the Proposed Action area and sediment disposal sites.

Marine vessel traffic in San Diego Bay is regulated by the USCG navigation standards and other general navigational standards, which are enforced by the San Diego Harbor Police. Compliance with the International Rules of the Road for lighting and day markers is also required. However, these are general standards and do not comprise a formal marine traffic system for large vessels.

Land traffic is commonly measured through average daily traffic and design capacity. These two measures are used to assign a roadway with a corresponding level of service (LOS). The LOS designation is a professional industry standard used to describe the operating conditions of a roadway segment or intersection. The LOS is defined on a scale of A to F that describes the range of operating conditions on a particular type of roadway facility. LOS A through LOS B indicates free flow travel. LOS C indicates stable traffic flow. LOS D indicates the beginning of traffic congestion. LOS E indicates the nearing of traffic breakdown conditions. LOS F indicates stop-and-go traffic conditions and represents unacceptable congestion and delay.

No upland construction is proposed as a part of this project; however, if crews and equipment do not arrive and depart at the dredge site via the waterside, equipment and personal transportation would occur on the landside of NBPL and Pier 5000. Further, under the Upland Disposal Option, dredged sediments would be moved from the dredge site to the CDF at NBSD via barge, allowed to dry, and then transported via truck to the Otay or Sycamore Landfills via the regional roadway network.

3.5.1 Regulatory Setting

EO 13693 encourages government entities to improve building efficiency, performance, and management by including in the planning for new buildings or leases, cost-effective strategies to optimize sustainable space usage and consideration of existing community transportation planning and infrastructure, including access to public transit. This EO encourages the coordination of federal real property discussions with local communities in an effort to encourage planned transportation investments that aim to support public transit access.

3.5.2 Affected Environment

Naval Base Point Loma is primarily located on the Point Loma peninsula at the western side of the entrance to San Diego Bay in metropolitan San Diego. The peninsula is approximately 4 miles west of downtown San Diego. Principal highways in the vicinity include Interstates 5 and 8 (NAVFAC SW 2012). Landside access to the NBPL Main Base complex is provided by Rosecrans Street, a major two-lane public road

connecting the installation as it extends along the western side of the Bay. Between Interstate 5 and Kellogg Street (near the NBPL entrance gate), Rosecrans Street has 34,105 average daily trips (ADT) and generally performs better (higher LOS ratings) nearer to NBPL (City of San Diego 2010b). Within NBPL, Rosecrans Street also serves as the main roadway along the Bay, while Cabrillo Memorial Drive extends along the uplands of the peninsula and is connected to Rosecrans Street via McClelland Road. Landside access to Pier 5000 is provided via Kephart Road off of Rosecrans Street. Parking for personal vehicles and military equipment is available along the waterfront and parking lots between Rosecrans Street and Kephart Road.

The Bay is actively used by commercial, recreational, and military vessels. There are multiple facilities in the Bay to serve boaters, including 18 public marinas, four private yacht clubs, 55 boat yards, over 8,280 recreational boat slips, four naval complexes (NBPL, Naval Air Station North Island, Naval Amphibious Base Coronado, and NBSD) with multiple piers, a cruise ship terminal, and ferry service.

Access to the major piers and berthing areas in the Bay is via the main channel, which is clearly buoyed and charted. While there is relatively little major commercial shipping traffic (approximately 40 cargo and cruise ships entering monthly; no more than about five per day), there is a large amount of recreational boat traffic. There is no formal control of the channel by the Port of San Diego; however, a harbor common radio channel is voluntarily used by large ships and the Navy. The Navy has a traffic monitor at NBSD. This monitor is used by all Navy ships while in the harbor, providing location data and proposed vessel navigational routes. Navy ships are berthed at NBSD, Naval Amphibious Base Coronado, NBPL, and Naval Air Station North Island.

Key elements of the water navigation system include the open Bay, marine terminal, ship navigation corridor, main ship channel, Navy ship berthing/anchorage, restricted areas, boat navigation corridor, recreational craft berthing, commercial fishing berthing, and small craft anchorage and mooring. A ship navigation corridor extends from the mouth of the Bay to the National City limit. The purpose of the ship navigation channel is to provide adequate draft for ship maneuverability, safe transit, and access to marine terminals, marine related industrial areas, and military bases. Pursuant to the Harbor Safety Plan (amended in 2005), ship corridors are maintained at adequate depths and widths to eliminate hazardous conflicts in the harbor among ships, small craft, and structures. Further, aquatic activities incompatible with vessel traffic in marked ship and boat channels and restricted area are prohibited.

The main ship channel, which is maintained by USACE, provides a depth of -47 feet MLLW and width that ranges from 600 to 2,000 feet from the Bay entrance to berthing areas on Naval Air Station North Island; a -47 feet MLLW depth and varying widths from 600 to 1,900 feet to the Tenth Avenue Marine Terminal; and a -37 feet MLLW depth and a width varying from 600 to 1,350 feet down to the Bay to the Nation City Marine Terminal (Port of San Diego 2009). Naval vessels, including cruisers and amphibious assault ships, can travel as far south as NBSD.

Boat navigation corridors are those water areas delineated by navigational channel markers or by conventional waterborne traffic movements and are designated by their predominant traffic and general physical characteristics. Boat navigation corridors range from 6 to 21 feet in depth and provide access to the more remote areas of the Bay. These channels are generally too shallow and too narrow to accommodate larger ships.

The remaining open waters of the Bay are quite shallow, ranging in depth from 2 to 17 feet, and comprise a large portion of the Bay. Shallow draft sailboats and power boats use areas for recreation and travel.

Uncontrolled boat anchorage is allowed in the open area of the Bay except where prohibited by other uses. Ship anchorage areas for ocean-going ships are located primarily in the area north of the "B" Street Pier, but include all of the navigable water of the harbor except designated channels, cable and pipeline areas, special anchorages, and Naval Restricted areas. Vessels anchoring in portions of the harbor, other than the areas discussed above, leave a free passage for other craft and are prohibited from unreasonably obstructing vessel approaches to the wharves in the harbor.

The major ships using the channel, other than merchantmen (approximately 40 per month), are Navy amphibious assault ships that are homeported at NBSD (these ships are assisted by tugs between their berths and the San Diego-Coronado Bay Bridge and have steerage under pilot when they reach the berthing areas) and cruise ships that make port in San Diego Bay about 2 to 3 times weekly.

Beyond the Pier 5000 dredging site and Bay mouth, the affected environment would vary for each dredged material disposal option.

Nearshore Replenishment – Beneficial Reuse Option

The Nearshore Replenishment Option would involve loading the dredged sediment into barges and transporting it to a nearshore replenishment site for beneficial reuse. The nearshore replenishment site would be located at the Silver Strand Boat Lanes (Naval Base Coronado Silver Strand Training Complex beach) located more than 6 miles from the project site or potentially another suitable beneficial reuse location identified during the permitting process.

Ocean Disposal Option

The Ocean Disposal Option would involve loading dredged sediment into barges and transporting it using a single tug to LA-5 ODMDS rather than to the nearshore replenishment site to the south of the Bay mouth, as discussed above. LA-5 ODMDS is a designated offshore open-water disposal site located on the ridged slope of the continental shelf at a depth of approximately 100 fathoms (600 feet), 5.4 nautical miles from Point Loma, off the San Diego Coast.

Upland Disposal Option

Truck transportation between NBSD and the Otay Landfill would most likely proceed south along Harbor Drive to Interstate 5, to Highway 54, to Interstate 805, and finally to Main Street. Of this route, the portion of Interstate 5 between Harbor Drive and Highway 54 and a portion of Interstate 805 between Highway 54 and Telegraph Canyon Road is operating at LOS F, while all other portions of the route are operating at LOS A-D (SANDAG 2008b).

Truck transportation between NBSD and Sycamore Landfill would most likely proceed south along Harbor Drive to Interstate 5, to Interstate 15, Highway 52, and finally to Mast Boulevard. Of this route, the portion of Interstate 5 between Harbor Drive and Interstate 15 and a portion of Interstate 15 from Interstate 8 to Balboa Avenue is operating at LOS F, while all other portions of the route are operating at LOS A-D (SANDAG 2008b).

The Caltrans 2017 Traffic Census for the State Highway System reports up to 205,000 Average Daily Trips (ADT) for the section of Interstate 5 South of Highway 54 operating at LOS F and up to 251,000 ADT for the section of Interstate 805 operating at LOS F (Caltrans 2021). In addition, the Caltrans 2017 Traffic Census reports up to 212,000 ADT for the section of Interstate 5 North to Interstate 15 North operating at LOS F and up to 228,000 ADT for the section of Interstate 15 from Interstate 8 to Balboa Avenue operating at LOS F.

3.5.3 Environmental Consequences

Impacts to marine traffic and transportation are analyzed by considering the possible changes to existing traffic conditions and the capacity of area road and waterways from proposed increases in project vehicle and vessel traffic.

For the purpose of this analysis, a significant impact to landside vehicle transportation would reduce the LOS of a given roadway to an F rating or permanently add vehicle trips to a roadway currently assigned to LOS F that would demonstrate exacerbation of traffic congestion. A significant impact to vessel transportation would occur if implementation of the alternatives would result in substantial reduction in current safety levels in terms of vessel maneuvering, vessel congestion, recreational boat access, or commercial fishing activity.

3.5.3.1 No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at NBPL Pier 5000 and the sediment surface would be maintained at its current depth. Roadway and vessel traffic conditions would remain unchanged. Therefore, no significant impacts to transportation and circulation would occur.

3.5.3.2 Proposed Action Potential Impacts

Project-related landside traffic on NBPL would include work crews or equipment deliveries that do not arrive via work boat on the water-side in the project dredge area. Construction workers would arrive via vanpool, carpool, or personal vehicle at the Rosecrans Street entrance gate and proceed via Rosecrans Street and Kephart Road to parking adjacent to Pier 5000. An estimated 20 construction workers arriving singly via personal vehicle (a conservative estimate to assess greatest potential impact) would temporarily add 20 ADT to Rosecrans Street or less than 1 percent of the existing ADT along that roadway during dredging activities. Landside construction equipment would be stored onsite adjacent to Pier 5000 for the duration of the project to limit transit demand. Given the small number of construction worker and equipment transport trips needed for landside access to the project area relative to existing traffic demand along Rosecrans Street, project-related landside traffic impacts would be negligible.

Under the Proposed Action, one or a combination of the following disposal options would occur.

Nearshore Replenishment – Beneficial Reuse Option

The primary source of traffic-related impacts under the Nearshore Replenishment Option would be vessel transportation within the Bay and Pacific Ocean. Under this option, the Proposed Action involves loading the 6,365 cy of dredged sediment into barges and transporting the material to a nearshore replenishment site for beneficial reuse. The maximum daily dredging production rate is expected to be 1,350 cy. The nearshore replenishment site would be located at the Silver Strand Boat Lanes (Naval Base Coronado Silver Strand Training Complex beach), located approximately 6 miles from the Proposed Action; or potentially another suitable beneficial reuse location identified during the permitting process.

The round-trip duration from the dredging site to the nearshore replenishment site is 10 to 12 hours to the Silver Strand Boat Lanes. Reloading each trip would take another 6 to 8 hours. Barges would be equipped with electronic tracking devices to document that material releases occurred within the disposal site boundaries, as specified in the proposed dredging permit. Approximately 8 barge trips would occur over the approximately 10-day project duration, averaging less than one barge round trip per day, would

be necessary to transport the dredged sediment from Pier 5000 SSI berth expansion area to the selected replenishment site (assuming that the contractor uses two 800-cy-capacity barges). Tug and barge traffic levels of less than one barge round trip per day in San Diego Bay and the Pacific Ocean would be temporary and negligible in comparison to the approximately 40 cruise and cargo ship trips per month as well as military vessel, commercial fishing, and personal recreational vessel traffic. Further, project tug/barge traffic would abide by existing charts and buoyed navigation channels. Therefore, there would be no significant impacts to vessel transportation as a result of the Proposed Action.

Ocean Disposal Option

The primary source of traffic-related impacts under the Ocean Disposal Option would be vessel transportation within the Bay and Pacific Ocean. The Ocean Disposal Option would involve loading the 6,365 cy of dredged sediment into a barge and transporting it to LA-5 ODMDS. For estimation purposes, the maximum daily dredging production rate is expected to be 1,600 cy, which includes two single tugs each towing a 1,000-cy barge, loaded with approximately 800 cy of sediment per day for approximately 10 days, with one tug and barge loading at the dredge site while the other is in transit to and from LA-5 ODMDS.

Round trip from the Pier 5000 SSI berth expansion area to LA-5 ODMDS is expected to take about 10 to 12 hours and reloading each trip would take another 6 to 8 hours. The barges would be equipped with electronic tracking devices to document that material releases occur within the disposal site boundaries. Up to 10 round trips over the 10-day project duration, averaging up to one round trip per day, would be necessary to transport the dredged sediment from Pier 5000 to LA-5 ODMDS. Tug and barge traffic levels of less than one barge round trips per day in San Diego Bay and Pacific Ocean would be temporary and negligible in comparison to the approximately 40 cruise and cargo ship trips per month as well as military vessel, commercial fishing, and personal recreational vessel traffic. Further, project tug/barge traffic would abide by existing charts and buoyed navigation channels. There would be no significant impacts to vessel transportation as a result of the Proposed Action.

Upland Disposal

The primary source for traffic-related impacts under the Upland Disposal Option would be the temporary addition of truck trips between NBSD and upland disposal site at the Otay Landfill. The Upland Disposal Option would involve loading the 6,365 cy of dredged sediment into 12-cy-capacity trucks and transporting the material to a designated site such as the Otay Landfill, located approximately 11.6 miles (round trip) from NBSD, or Sycamore Landfill, located approximately 40.2 miles (round trip) from NBSD. Transporting sediment from the upland CDF to the Otay or Sycamore Landfill would require approximately 531 truck trips over the duration of the Proposed Action, as governed by the rate of drying of sediment to a point where it is suitable for transport and disposal. Impacts to the local road network would be temporary. Therefore, there would be no significant impacts to vehicle traffic as a result of the Proposed Action.

The total estimated number of truck trips for the Proposed Action under the Upland Disposal Option (531 trips) is approximately 0.26 percent of the ADT for the section of Interstate 5 operating at LOS F and 0.21 percent of the ADT for the section of Interstate 805 operating at LOS F between the NBSD and the Otay Landfill. In addition, the total estimated number of truck trips for the Proposed Action under the Upland Disposal Option (531 trips) is approximately 0.25 percent of the ADT for the section of Interstate 5 North operating at LOS F and 0.23 percent of the ADT for the section of Interstate 15 operating at LOS F between NBSD and the Sycamore Landfill However, the 531 truck trips would be spread across a number

of days or weeks. If 531 daily truck trips were spread evenly across 10 days of project work, the percentage of ADT for each of the LOS F sections would be reduced to 0.03 and 0.02 percent of the ADT of the poorly performing road sections to the Otay Landfill, and 0.03 and 0.02 percent of the ADT of the poorly performing road sections to the Sycamore Landfill, respectively. Therefore, there would be no significant impacts to traffic as a result of the Proposed Action.

3.5.3.3 Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, the project components would be the same as those under the Proposed Action, except that dredged volume would be less and subsequently the duration of disposal transporting activities would be less. Under implementation of this alternative, impacts would be similar to those associated with the Proposed Action; therefore, no significant impacts to transportation and circulation would occur.

3.6 Hazardous Materials and Wastes

This section discusses hazardous materials, hazardous waste, toxic substances, and contaminated sites.

3.6.1 Regulatory Setting

Hazardous materials are defined by 49 CFR §171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR Part 173." Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273. Four types of waste are currently covered under the universal wastes regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, mercury containing equipment, and hazardous waste lamps, such as fluorescent light bulbs.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material (ACM), polychlorinated biphenyls (PCBs), and lead-based paint (LBP). USEPA is given authority to regulate special hazard substances by the Toxic Substances Control Act (TSCA). Asbestos is also regulated by USEPA under the Clean Air Act, and the Comprehensive Environmental Response, Compensation, and Liability Act.

The DoD established the Defense Environmental Restoration Program (DERP) to facilitate thorough investigation and cleanup of contaminated sites on military installations (active installations, installations subject to Base Realignment and Closure, and formerly used defense sites). The Installation Restoration Program and the Military Munitions Response Program are components of the DERP. The Installation Restoration Program requires each DoD installation to identify, investigate, and clean up hazardous waste

disposal or release sites. The Military Munitions Response Program addresses nonoperational rangelands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination. The Environmental Restoration Program is the Navy's initiative to address DERP.

Hazardous materials and wastes are also controlled under the California Code of Regulations (CCR) and these regulations are implemented by the California Department of Toxic Substances Control and the local Certified Unified Program Agency. The San Diego County Department of Environmental Health (DEH) acts as the Certified Unified Program Agent under authorization from the California Environmental Protection Agency to implement state environmental requirements. The Navy is required to comply with these acts and all DoD requirements, as well as management plans specific to NBPL.

The Emergency Planning Community Right-to-Know Act (EPCRA [42 U.S.C. Section 11001 *et seq*.]) includes four major provisions:

1. Emergency planning (Sections 301–303)
2. Emergency release notification (Section 304)
3. Hazardous chemical storage reporting requirements (Sections 311–312)
4. Toxic chemical release inventory (Section 313)

Section 311 requires facilities to have Material Safety Data Sheets (MSDSs) for chemicals held above certain quantities to submit either copies of their MSDS or a list of MSDS chemicals to the Local Emergency Planning Committee and local fire department. Facilities that need to report EPCRA Section 311 must also submit an annual inventory report (Tier I or Tier II form) for the same chemicals. This inventory report must be submitted to the State Emergency Response Commission and local fire department by March 1 of each year. The information submitted under Sections 311 and 312 are available to the public from the Local Emergency Planning Committees and State Emergency Response Commissions. Any hazardous materials and wastes generated dredging activities would be subject to installation-wide EPCRA reporting.

3.6.2 Affected Environment

The Navy has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. These programs are governed Navy-wide by applicable OPNAV instructions and at the installation by specific instructions issued by the Base Commander. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.

3.6.2.1 Hazardous Materials

Daily activities at NBPL require a variety of hazardous materials, including pesticides, herbicides, fungicides, cleaning agents, oils, fuels, solvents, and paints (DON 2012).

3.6.2.2 Hazardous Waste

Hazardous wastes are taken to the 90-day storage facility located behind Building 75. NBPL is a USEPA large-quantity hazardous waste generator (DON 2013).

3.6.2.3 Defense Environmental Restoration Program

Naval Facilities Engineering Systems Command Southwest currently manages 14 active Installation Restoration and Munitions Response Program (MRP) sites (under the Defense Environmental Restoration Program) on the peninsula portion of NBPL:NBPL Site 5: North Coast Rubble Disposal Area

- NBPL Site 6: Building A-86 Rubble Disposal Area
- NBPL Site 7: Building A-44 Rubble Disposal Area
- NBPL Site 8: Building A-34 Rubble Disposal Area
- NBPL Site 9: Building A-34 Plating Waste Disposal Area (Public Works Center B-34 Plating)
- NBPL Seaside Site 10: Sewage Sludge Spreading Area
- NBPL Seaside Site 11: South Coast Rubble Disposal Area
- NBPL Seaside Site 20: Old ICSTF Radar Complex Station (Central Coast Rubble Disposal Area)
- NBPL Seaside Site 23: Abrasive Blast Grit Disposal Area
- NBPL Seaside Site 24: Former Atlas Missile Test Facility
- NBPL Seaside Site 25: Model Boat Range
- NBPL Seaside MRP Site 1: Former Small Arms Range
- NBPL Seaside UST 105: Deperming Building 2 Former Underground Storage Tank
- NBPL Bayside UST 106: NEX Building 20 Former Underground Storage Tank

In addition, there is one active underwater MRP Site near NBPL; Naval Base San Diego MRP Site 100. While the proposed action will occur within NBSD MRP Site 100, the likelihood of encountering Munitions and Explosives of Concern (MEC) and/or Material Potentially Presenting an Explosives Hazard (MPPEH) has been determined to be low. The potential hazard would be further mitigated because dredging will not occur without Naval Ordnance Safety and Security Activity (NOSSA) approval of an Explosives Safety Submission Determination Request (DR). The contractor will be required to comply with the ESS DR including receiving MEC Awareness Training including Recognize, Retreat, and Report prior to dredging. Dredging will stop and NOSSA will be consulted should any MEC and/or MPPEH be found.

3.6.3 Environmental Consequences

The hazardous materials and wastes analysis in the respective sections addresses issues related to the use and management of hazardous materials and wastes as well as the presence and management of specific cleanup sites at NBPL.

Impacts from hazardous materials and hazardous wastes would occur if implementation of the Proposed Action would increase human health risks or environmental exposure as a result of the storage, use, transportation, or disposal of these substances. The significance of impacts associated with hazardous materials and wastes is based on the toxicity of the substance, the quantity of the substance involved, the risk of exposure, and the method of disposal.

3.6.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change associated with hazardous materials and wastes. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.6.3.2 Proposed Action (Preferred Alternative) Potential Impacts

The project area for hazardous materials and hazardous wastes for the Proposed Action is NBPL and the Bay. The Proposed Action would involve dredging to a depth of -36.6 feet MLLW plus an additional 2 feet of overdredge allowance. The total estimated volume of dredged sediment would be 6,365 cy.

Sediment samples were collected from a maintenance dredging area adjacent to the Proposed Action in May 2020 (Figure 2-2). The samples were tested in accordance with regulations contained in 40 CFR Parts 220–228 and were approved by the USEPA and USACE for unconfined aquatic disposal at the LA-5 ODMDS or the Silver Strand Boat Lanes in December 2020. In July 2020, the Navy obtained approval from the USEPA and USACE to include the Proposed Action area sediments under the same suitability determination if they were similar to those collected from the adjacent maintenance dredging area. To determine similarity between the two areas, an additional sample was collected from the Proposed Action area and analyzed in February 2021. Sample analysis results were presented to the USACE and USEPA for review in March 2021. Because sediment chemical concentrations for the sample collected in the Pier 5000 SSI berth expansion area were found to be consistent with the maintenance dredging area, they were approved as suitable for unconfined aquatic disposal by the USEPA and USACE. However, sediment grain sizes were determined to be too fine for and incompatible with nearshore placement at the Silver Strand Boat Lanes or a similar beneficial reuse site and only offshore disposal at the LA-5 ODMDS was approved. All dredged material disposal operations performed for the Proposed Action would comply with CWQ Section 404 and be in accordance with a dredging permit issued by USACE, and a CWA Section 401 water quality certification from the RWQCB. If hazardous substances are present in the dredged sediment, avoidance and minimization measures would be taken to prevent adverse impacts from hazardous materials or substances.

Implementation of the Proposed Action would result in no change to the storage, use, transportation, or disposal of hazardous substances or wastes. The sediments within the Proposed Action area were determined to be relatively free of contaminants, however, the sediments do not meet beneficial reuse requirements for grain size compatibility, and therefore will be disposed at LA-5 ODMDS. Overall, implementation of the Proposed Action would not result in increased human health risk or environmental exposure. The Proposed Action would not result in significant impacts from hazardous materials and wastes.

3.6.3.3 Reduced Dredging Footprint Alternative Potential Impacts

The Reduced Dredging Footprint Alternative would have impacts similar to those of the Proposed Action, exception that the dredged volume would be only approximately 4,950 cy and the duration of dredging would be reduced. Therefore, the Reduced Dredging Footprint Alternative would result in no significant impacts from hazardous materials and waste.

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4 Cumulative Impacts

This section (1) defines cumulative impacts, (2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, (3) analyzes the incremental interaction the Proposed Action may have with other actions, and (4) evaluates cumulative impacts potentially resulting from these interactions.

4.1 Definition of Cumulative Impacts

The approach taken in the analysis of cumulative impacts follows the objectives of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and CEQ guidance. Cumulative impacts are defined in 40 CFR §1508.7 as "the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

To determine the scope of environmental impact analyses, agencies shall consider cumulative actions, which when viewed with other Proposed Actions have cumulatively significant impacts and should therefore be discussed in the same impact analysis document.

In addition, CEQ and USEPA have published guidance addressing implementation of cumulative impact analyses—Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ 2005) and Consideration of Cumulative Impacts in EPA Review of NEPA Documents (USEPA 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should

"…determine the magnitude and significance of the environmental consequences of the Proposed Action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts…[and]…focus on truly meaningful impacts."

Cumulative impacts are most likely to arise when a relationship or synergism exists between a Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions.

- Does a relationship exist such that affected resource areas of the Proposed Action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resource areas of the Proposed Action and another action could be expected to interact, would the Proposed Action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

4.2 Scope of Cumulative Impacts Analysis

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this Environmental Assessment (EA), the study area delimits the geographic extent of the cumulative impacts analysis. In general, the study area will include those areas previously identified in Section 3 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the Proposed Action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the Proposed Action, the analysis employs the measure of "reasonably foreseeable" to include or exclude other actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for EAs, management plans, land use plans, and other planning related studies.

4.3 Past, Present, and Reasonably Foreseeable Actions

This section will focus on past, present, and reasonably foreseeable future projects at and near the Proposed Action locale. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in Section 4.1, it was determined if a relationship exists such that the affected resource areas of the Proposed Action (included in this EA) might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (CEQ 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here as the intent is to focus the analysis on the meaningful actions relevant to informed decision-making. Projects included in this cumulative impacts analysis are listed in Appendix E and briefly described in the following subsections.

4.4 Cumulative Impact Analysis

Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data is not available, and a qualitative analysis was undertaken. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative impacts related to this EA/EIS where possible. The analytical methodology presented in Section 3, which was used to determine potential impacts to the various resources analyzed in this document, was also used to determine cumulative impacts.

4.4.1 Air Quality/Climate Change

4.4.1.1 Description of Geographic Study Area

The Region of Influence (ROI) for assessing cumulative air quality impacts of criteria pollutants and greenhouse gases is primarily the San Diego Air Basin (SDAB), and more specifically, in proximity to NBPL. This region is in attainment of all criteria pollutants regulated under the National Ambient Air Quality Standards (NAAQS) except ozone. The main impacts to air quality from the Proposed Action that could contribute to cumulative impacts would be from emissions associated with dredging activities.

Operational emissions would be unchanged from existing conditions and would not result in long-term increases in emissions.

4.4.1.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable actions that have the potential to interact with the Proposed Action and cumulatively impact air quality primarily include projects that would establish new or increase existing emissions in the ROI. Past, present, or reasonably foreseeable dredging projects would add to cumulative air emissions because they are short-term projects and their impacts would be limited to periods of active dredging.

4.4.1.3 Cumulative Impact Analysis

Proposed Action

Cumulative impacts resulting from the Proposed Action, in conjunction with impacts from other projects listed above, would potentially occur during dredging activities at NBPL. Proposed dredging activities would produce emissions (from tug and dredge equipment operation) that would remain below applicable NEPA and conformity emissions significant thresholds. Any concurrent emissions-generating action that occurs near the Proposed Action area would potentially contribute to the ambient impacts of these emissions. Because proposed dredging activities would produce a nominal amount of emissions, the combination of proposed construction along with future project air quality impacts would not contribute to an exceedance of an ambient air quality standard. As a result, proposed dredging activities would produce less than cumulatively considerable air quality impacts.

Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, impacts to biological resource would be similar to those of the Proposed Action. Implementation of the Reduced Dredging Footprint Alternative would result in temporary and short-term impacts to biological resources. The duration of dredging activities under the Reduced Dredging Footprint Alternative is not anticipated to be longer than seven days.

No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at the Pier 5000 SSI berthing area and the current sediment surface depth would not be manually altered to meet the submarine design depth requirements. Therefore, the No Action Alternative would not result in any significant direct or cumulative impacts to air quality and greenhouse gases.

4.4.2 Water Resources

4.4.2.1 Description of Geographic Study Area

The ROI for assessing cumulative impacts for water resources is the North Bay in the vicinity of NBPL.

4.4.2.2 Relevant Past, Present, and Future Actions

Past dredging projects within the ROI had temporary impacts to water resources that occurred for the duration of the respective projects, but would not overlap with impacts associated with the Proposed Action. Future in-water projects, including the maintenance dredging activities and pile removal for the NBPL Fuel Pier, the NBSD Mole Pier Floating Dry Dock, and the Pier 6 Replacement Project, as well as other

maintenance dredging activities within San Diego Harbor and at other San Diego naval facilities, could occur in close temporal and geographic proximity to the Proposed Action, but selected dredge dates are not likely to overlap. Even if dredging activities for some, or all, projects occur concurrently with the Proposed Action, the cumulative impacts would be minimal. The duration of dredging activities under the Proposed Action is not anticipated to exceed 10 days. For that reason, any potential overlap between the projects would not result in a significant cumulative impact to water resources. Therefore, the Proposed Action, in conjunction with other in-water projects in the North Bay, would not result in significant cumulative impacts to water resources.

4.4.2.3 Cumulative Impact Analysis

Proposed Action

Implementation of the Proposed Action would have temporary, localized, and less than significant impacts to water resources.

Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, impacts to biological resources would be similar to those of the Proposed Action. Implementation of the Reduced Dredging Footprint Alternative would result in temporary and short-term impacts to biological resources. The duration of dredging activities under the Reduced Dredging Footprint Alternative is not anticipated to be longer than seven days.

No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at the Pier 5000 SSI berth expansion area and the current sediment surface depth would not be manually altered to meet the submarine design depth requirements. Therefore, the No Action Alternative would not result in any significant direct or cumulative impacts to water resources.

4.4.3 Biological Resources

4.4.3.1 Description of Geographic Study Area

The ROI for cumulative biological resource impacts consists of the areas surrounding the dredging site and NBPL.

4.4.3.2 Relevant Past, Present, and Future Actions

The past, present, and reasonably foreseeable projects that have the greatest potential to interact with the Proposed Action and cumulatively impact biological resources include actions that involve ongoing or future in-water operations. Impacts associated with past, short-term dredging projects in the vicinity of the Proposed Action site are unlikely to interact with Proposed Action-associated impacts, given their temporal separation.

4.4.3.3 Cumulative Impact Analysis

Proposed Action

Impacts of the Proposed Action, when compared with those of currently ongoing and reasonably foreseeable future actions, would be temporary and less than significant. Dredging activities would result in a temporary increase in turbidity and underwater noise as well as the temporary removal of prey

resources or foraging areas until such time that the benthos naturally recovers following completion of dredging. Similarly, there would no adverse effect to Essential Fish Habitat (EFH), listed Fishery Management Plan (FMP) species, or special aquatic sites, including eelgrass. Short-term impacts to EFH from dredging activities would result in minor disturbances to Bay bottom and the water column and fish from increased suspended sediment loads, turbidity, and underwater noise. In addition, there would be only short-term, localized, and less than significant impacts to marine habitats, fish, invertebrates, sea turtles, birds, and marine mammals that occur in the vicinity of NBPL.

Only two listed threatened or endangered species have the potential to occur in the project vicinity: the green sea turtle and California least tern. With implementation of BMPs (discussed in Section 2.5), the Proposed Action would result in no effects on individuals of any species. Additionally, avoidance and minimization measures discussed in Section 3.3.3.1 would be implemented to further avoid potential impacts to special status species.

Under the Proposed Action, dredging activities are anticipated to occur in 2021/2022. In-water maintenance dredging at NBPL Pier 5000/5002 Inner Berths, maintenance dredging and pile removal activities at the NBPL Fuel Pier, NBSD (Mole Pier Floating Dry Dock Dredging), The NBSD Pier 6 Replacement Project, and NAB Coronado (various pier maintenance, repair, and construction projects) may potentially occur simultaneously during the Proposed Action in the vicinity of NBPL. However, even if in-water work for all projects is completed concurrently, the cumulative impacts would be minimal. The duration of Proposed Action dredging is not anticipated to be longer than 10 days and would be limited to the geographic scope of the dredging area. For these reasons, any potential overlap between the projects would not result in a significant cumulative impact to biological resources. Therefore, the Proposed Action, in conjunction with any reasonably foreseeable future projects, would not result in significant cumulative impacts to biological resources.

Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, impacts to biological resource would be similar to those of the Proposed Action. Implementation of the Reduced Dredging Footprint Alternative would result in temporary and short-term impacts to biological resources. The duration of dredging activities under the Reduced Dredging Footprint Alternative is not anticipated to be longer than seven days.

No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at the Pier 5000 SSI berth expansion area and the current sediment surface depth would not be manually altered to meet the submarine design depth requirements. Therefore, the No Action Alternative would not result in any significant direct or cumulative impacts to biological resources.

4.4.4 Noise

4.4.4.1 Description of Geographic Study Area

The ROI for noise cumulative impacts includes areas in proximity to the dredging site at Pier 5000 at NBPL.

4.4.4.2 Relevant Past, Present, and Future Actions

The past, present, and reasonably foreseeable projects that have the greatest potential to interact with the Proposed Action and cumulatively generate noise impacts include actions that involve ongoing or future in-water operations. Impacts associated with past, short-term, dredging projects in the vicinity of

the Proposed Action site are unlikely to interact with Proposed Action-associated impacts, given their temporal separation.

4.4.4.3 Cumulative Impact Analysis

Proposed Action

The Proposed Action would result in temporary, less-than-significant noise impacts because noise-generating activities would last only for the duration of dredging activities and at sufficient distance from any noise-sensitive receptors. These impacts would be below established limits or would be very short-term and intermittent, and dredging activity noise would cease upon completion of dredging activities. Further, all airborne noise-generating activities associated with the Proposed Action would be screened from noise-sensitive land uses (i.e., schools, residences) by other noise-generating uses that are characteristic of the urbanized, industrial waterfront at NBPL. Underwater noise would not significantly affect fish or marine mammals and sea turtles because these species are highly mobile and can avoid these localized, short-term disturbances. Therefore, implementation of the Proposed Action, combined with past, present, and reasonably foreseeable future projects, would not result in significant noise impacts within the ROI.

Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, impacts to biological resources would be similar to those of the Proposed Action. Implementation of the Reduced Dredging Footprint Alternative would result in temporary and short-term impacts to biological resources. The duration of dredging activities under the Reduced Dredging Footprint Alternative are not anticipated to last longer than 10 days.

No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at Pier 5000 SSI berth expansion area and the current sediment surface depth would not be manually altered to meet the submarine design depth requirements. Therefore, the No Action Alternative would not result in any significant direct or cumulative impacts to the local noise environment.

4.4.5 Transportation

4.4.5.1 Description of Geographic Study Area

The ROI for cumulative impacts for transportation and traffic would be less than significant for all disposal options discussed as part of the Proposed Action. All in-water disposal options (nearshore replenishment or ocean disposal) would not include any ground transportation; therefore, there would be no expected increase in traffic to circulation roadway segments and intersections in the vicinity of NBPL. Upland disposal of sediment would expand the ROI to include the regional road network connecting the CDF at NBSD and the Otay Landfill.

4.4.5.2 Relevant Past, Present, and Future Actions

The past, present, and reasonably foreseeable projects that have the greatest potential to interact with the Proposed Action and cumulatively generate vessel or traffic impacts include actions that involve ongoing or future in-water operations. Impacts associated with past, short-term, dredging projects in the vicinity of the Proposed Action site are unlikely to interact with Proposed Action-associated impacts, given their temporal separation and appropriate routing of vessel traffic or roadway transit.

4.4.5.3 Cumulative Impact Analysis

Proposed Action

Dredging activities would consist of a 1,000-cy-capacity barge that would be loaded with sediment to 80 percent capacity and transported in the Bay and Pacific Ocean to an unconfined aquatic disposal site such as the LA-5 ODMDS. The Navy would issue a Notice to Mariners for the duration of dredging activities. The Bay is actively used by commercial, recreational, and military vessels; therefore, vessel transportation associated with dredging activities would be consistent with existing vessel traffic in the Bay.

If upland sediment disposal is selected as the appropriate disposal option, sediment will be removed from the dredge site to a CDF and then transported to the Otay Landfill for final disposal. This option would necessitate trucking sediment on the regional road network. As documented in Section 3.5.3, the approximate total number of trucks trips to transport all of the dredged sediment would be less than 1 percent of the average daily trips (ADT) on the roadways connecting the CDF and the Otay or Sycamore Landfills, a less-than-significant amount.

Therefore, the Proposed Action, for all options, would not result in significant cumulative impacts to transportation within the Bay and the Pacific Ocean or landside between the CDF and the Otay Landfill.

Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, impacts to biological resources would be similar to those of the Proposed Action. Implementation of the Reduced Dredging Footprint Alternative would result in temporary and short-term impacts to biological resources. The duration of dredging activities under the Reduced Dredging Footprint Alternative is not anticipated to be longer than seven days.

No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at the Pier 5000 SSI berth expansion area and the current sediment surface depth would not be manually altered to meet the submarine design depth requirements. Therefore, the No Action Alternative would not result in any significant direct or cumulative impacts to transportation and traffic.

4.4.6 Hazardous Materials and Wastes

4.4.6.1 Description of Geographic Study Area

The ROI for cumulative impacts to hazardous materials and waste consists of NBPL.

4.4.6.2 Relevant Past, Present, and Future Actions

The past, present, and reasonably foreseeable future actions that have a potential to use hazardous materials or generate hazardous waste at NBPL include the NBPL Pier 5000/5002 Inner Berths Maintenance Dredging Project and the NBPL Fuel Pier Maintenance Dredging and Pile Removal that may require use and/or disposal of hazardous materials, including fuels.

4.4.6.3 Cumulative Impact Analysis

Proposed Action

Implementation of the Proposed Action would not result in a significant impact from hazardous materials and wastes based on the 2020 NBPL Pier 5000 SSI berth maintenance dredging and 2021 Pier 5000 SSI

berth expansion sediment testing results which showed that the proposed dredged sediment was substantially free of chemical contaminants and was not significantly toxic to USEPA and USACE accepted testing species. Therefore, the Proposed Action would not result in significant cumulative impacts associated with the use, storage, or disposal of hazardous materials and wastes.

Reduced Dredging Footprint Alternative

Under the Reduced Dredging Footprint Alternative, impacts hazardous materials or wastes on biological resources would be similar to those of the Proposed Action. Implementation of the Reduced Dredging Footprint Alternative would result in temporary and short-term impacts to biological resources. The duration of dredging activities under the Reduced Dredging Footprint Alternative is not anticipated to be longer than seven days.

No Action Alternative

Under the No Action Alternative, existing conditions would remain unchanged. No dredging would occur at the Pier 5000 SSI berth expansion area and the current sediment surface depth would not be manually altered to meet the submarine design depth requirements. Therefore, the No Action Alternative would not result in any significant direct or cumulative impacts related to hazardous materials and wastes.

5 References

A complete list of references is included in Appendix F.

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6 List of Preparers

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7 Persons and Agencies Consulted

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Appendix A
Key Documents and Regulations

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Appendix A
Key Documents and Regulations

A.1 Key Documents

Key documents are sources of information incorporated into this EA. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ Regulations for Implementing NEPA encourage the incorporation of documents by reference (40 CFR §1502.21). Documents incorporated by reference in part or in whole include:

- *Final Sampling and Analysis Plan Report Sediment Characterization at the Fuel Pier (Inboard) and Piers 5000/5002 Inner Berths, Naval Base Point Loma, San Diego, California* (December 2020). This document is a technical report with sediment testing data and the agency suitability for unconfined aquatic disposal (SUAD) determination for the most recent dredging project at Pier 5000 which is located immediately adjacent to the Proposed Action area.
- *Environmental Assessment Naval Base Point Loma Pier 5000 North Side Outer Berth and Pier Approach Dredging* (June 2019). This EA analyzed a previous dredging project adjacent to the Proposed Action footprint on the northeastern side and approach to Pier 5000 at NBPL. This analysis included dredging and sediment disposal similar to the Proposed Action but over a much larger area.
- *Environmental Assessment Naval Base Point Loma Pier 5000 Dredging* (July 2012). This EA analyzed a previous dredging project adjacent to the northeastern side of Pier 5000 at NBPL. This analysis included dredging and sediment disposal similar to the Proposed Action but over a smaller, limited area immediately adjacent to the northside of Pier 5000.
- *Final Report Sediment Testing to Support Future Dredging at Naval Base Point Loma Pier 5000 South Side Outer Berth, Pier 5002 North Side Outer Berth, and Pier 5002 Approach Channel* (August 2015). This document is a technical report with sediment testing data and the agency SUAD determination for the most recent dredging project in the North Side Outer (NSO) berthing area of Pier 5000.
- *Final Dredged Material Characterization Study, Pier 5000 Berth Deepening Project, Naval Base Point Loma, San Diego, California* (July 2012). This document is a technical report with sediment testing data and the agency SUAD determination for the most recent dredging project in the South Side Outer berthing area of Pier 5000.
- *Environmental Assessment, Naval Base Point Loma Piers 5000/5002/Approach Channel Dredging and Disposal Project* (2014). This EA analyzed a previous dredging project at both Pier 5000 and the adjacent Pier 5002 at NBPL. This analysis included dredging and sediment disposal similar to the proposed action but occurred on the south side of Pier 5000 between that pier and Pier 5002 and in the approach area connecting the north side of Pier 5002 to the main channel of San Diego Bay.
- *Final Naval Base Point Loma Integrated Natural Resources Management Plan and Appendices* (November 2012). This document is a comprehensive plan prepared in coordination with numerous federal and state resource management agencies prepared to ensure no net loss of military mission or function through management of natural resources in an adaptive ecosystem-based approach.

A.2 Relevant Laws and Regulations

The Navy has prepared this EA based upon federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action, including the following:

- NEPA (42 U.S.C. Sections 4321-4370h), which requires an environmental analysis for major federal actions that have the potential to significantly impact the quality of the human environment
- CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500–1508) including the 2020 Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act
- Navy regulations for implementing NEPA (32 CFR Part 775), which provides Navy policy for implementing Council on Environmental Quality regulations and NEPA
- Clean Air Act General Conformity Rule, 42 U.S.C. 7506(c)
- Clean Water Act (CWA), 33 U.S.C. 1251 *et seq.*
- Coastal Zone Management Act (CZMA), 16 U.S.C. 3505
- National Historic Preservation Act, 54 U.S.C. 300101 *et seq*.
- Endangered Species Act (ESA), 16 U.S.C. 1531 *et seq.*
- Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), 16 U.S.C. 1801-1883
- Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361-1407, P.L. 92-522) 21 October 1972, as amended
- Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), 16 U.S.C. 1431
- Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703
- Executive Order (EO) 11988, Floodplain Management
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 12898, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- EO 13175, Consultation and Coordination with Indian Tribal Governments
- EO 13693, Planning for Federal Sustainability in the Next Decade
- EO 13807, Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects
- EO 13927, Accelerating the Nation's Economic Recovery from the COVID-19 Emergency by Expediting Infrastructure Investments and Other Activities

The following agency consultations and associated permits/authorizations/concurrences would be required with implementation of the Proposed Action:

- CWA Section 404 and Rivers and Harbors Act (RHA) Section 10 permits from the USACE Carlsbad Field Office
- USEPA and USACE suitability determination for ocean disposal of dredged sediments
- CWA Section 401 Water Quality Certification from the San Diego Regional Water Quality Control Board (RWQCB)
- Section 103 of the MPRSA approval for dredged sediment disposal at Ocean Dredged Material Disposal Site (ODMDS) LA-5
- Concurrence from the California Coastal Commission on the Coastal Consistency Negative Determination in accordance with the CZMA
- Concurrence from the National Marine Fisheries Service (NMFS) on the Essential Fish Habitat (EFH) analysis and determination
- Concurrence from NMFS and U.S. Fish and Wildlife Service (USFWS) on the informal ESA Section 7 Consultation

A description of the Proposed Action's consistency with these laws, policies, and regulations, as well as the names of regulatory agencies responsible for their implementation, is presented in Chapter 5 (see Table 5-1).

A.3 Consistency with Other Federal, State, and Local Laws, Plans, Policies, and Regulations

In accordance with 40 Code of Federal Regulations (CFR) section 1502.16(c), analysis of environmental consequences shall include discussion of possible conflicts between the Proposed Action and the objectives of federal, regional, state and local land use plans, policies, and controls. Table 5-1 identifies the principal federal and state laws and regulations that are applicable to the Proposed Action, and describes briefly how compliance with these laws and regulations would be accomplished.

Table A-1. Principal Federal and State Laws Applicable to the Proposed Action

Plans, Policies, and Controls	*Responsible Agency*	*Status of Compliance*
National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section (§)4321 *et seq*.); CEQ NEPA implementing regulations; Navy procedures for Implementing NEPA (32 Code of Federal Regulations [CFR] 775)	Navy	This Draft Environmental Assessment (EA) has been prepared in accordance with the Council on Environmental Quality (CEQ) Regulations implementing National Environmental Policy Act (NEPA) and Navy NEPA procedures.
Coastal Zone Management Act (16 CFR § 1451 *et seq*.)	Navy	A federal action is subject to Coastal Zone Management Act (CZMA) federal consistency requirements if the action would have any reasonable foreseeable direct or indirect effect on any coastal use or resource. The Navy conducted an effects test for purposes of federal consistency review. Due to past similar activities in the area and similar effects to coastal uses and resource from dredging, the Navy determined that no adverse effects to coastal use or resources would occur in the coastal zone. The Navy is currently preparing a Coastal Consistency Negative Determination for the Proposed Action and intends to consult with the California Coastal Commission as required by the CZMA.
Clean Water Act (§§ 401-402 and 404, 33 U.S.C. § 1251 *et seq*.)	USEPA, USACE	The Proposed Action or the Reduced Dredging Footprint Alternative would not involve the release of chemicals requiring a National Pollutant Discharge Elimination System (NPDES) permit. The project would involve dredging for which a Clean Water Act (CWA) Section 404/Rivers and Harbors Act (RHA) Section 10 permit from the U.S. Army Corps of Engineers (USACE) would be obtained, along with related CWA Section 401 Water Quality Certification from the San Diego Regional Water Quality Control Board (RWQCB). A CWA Section 103 permit in compliance with the Marine Protection, Research, and Sanctuaries Act would be obtained should ocean disposal be selected.
Clean Air Act (42 U.S.C. § 7401 *et seq*.)	USEPA	Per the Federal Clean Air Act (CAA) regulations, the Proposed Action or the Reduced Dredging Footprint Alternative would not compromise air quality attainment status or conflict with attainment status and maintenance goals established by the South Coast Air Quality Management District State Implementation Plan. A formal CAA conformity determination is not required. The Proposed Action or the Reduced Dredging Footprint Alternative would be in compliance with the CAA and would comply with all applicable San Diego Pollution Control District (SDAPCD) Rules and Regulations.

Table A-1. Principal Federal and State Laws Applicable to the Proposed Action (Continued)

Plans, Policies, and Controls	*Responsible Agency*	*Status of Compliance*
Executive Order (EO) 11990, *Protection of Wetlands* (42 Federal Register 26961)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not impact wetlands (none are present in the project area) and would be in compliance with EO 11990.
Endangered Species Act (ESA) (16 U.S.C. § 1531)	Navy / National Marine Fisheries Service (NMFS)/ U.S. Fish and Wildlife Service (USFWS)	The Proposed Action or the Reduced Dredging Footprint Alternative are not likely to adversely affect any federally listed endangered or threatened species or critical habitat and formal consultation with USFWS is not required. The Navy has conducted informal consultation with NMFS (green sea turtle); therefore, the Proposed Action or the Reduced Dredging Footprint Alternative would be in compliance with the ESA.
Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801, *et seq*.) as amended by the Sustainable Fisheries Act (Public Law 104-267)	NMFS	The Proposed Action or the Reduced Dredging Footprint Alternative would have minimal adverse effects on Essential Fish Habitat (EFH) for federally managed fish species within the Coastal Pelagic Species and Pacific Coast Groundfish Fishery Management Plan (FMP) areas. These effects would be temporary and limited in scope. The Proposed Action and the Reduced Dredging Footprint Alternative contain adequate measures to avoid and minimize any remaining potential adverse effects to EFH. The Navy would consult informally with NMFS; therefore, the Proposed Action or the Reduced Dredging Footprint Alternative would be in compliance with the Magnuson-Stevens Fishery Conservation and Management Act.
Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. § 1361-1407)	NMFS	The Proposed Action and Reduced Dredging Footprint Alternative would be in compliance with the MMPA. Because monitoring for marine mammals prior to and during all dredging activities would occur including work stoppage if marine mammals are observed in or near the project area, there would be no reasonably foreseeable harassment of marine mammals, as defined by the MMPA.
Migratory Bird Treaty Act (16 U.S.C. §§ 703-712)	Navy	The Proposed Action and Reduced Dredging Footprint Alternative would be restricted to short-term, in-water work within a limited geographic area relative to entirety of San Diego Bay.

Table A-1. Principal Federal and State Laws Applicable to the Proposed Action (Continued)

Plans, Policies, and Controls	*Responsible Agency*	*Status of Compliance*
National Historic Preservation Act (§ 106, 16 U.S.C. § 470 *et seq*.)	Advisory Council on Historic Preservation, California State Historic Preservation Office	Project components will occur in-water without landside impacts to historic or cultural resources.
Comprehensive Environmental Response and Liability Act (42 U.S.C. § 9601 *et seq*.)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not involve the use or discharge of any hazardous materials.
Emergency Planning and Community Right-to-Know Act (42 U.S.C. §§ 11001-11050)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not involve the use or discharge of any hazardous materials.
Resource Conservation and Recovery Act (42 U.S.C. § 6901 *et seq*.)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not involve the use or discharge of any hazardous materials.
Sikes Act Improvement Act (16 U.S.C. § 670a *et seq*.)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would be in compliance with the Integrated Natural Resources Management Plan for San Diego Bay and NBPL and therefore would be in compliance with the Sikes Act Improvement Act.
EO 12088, Federal Compliance with Pollution Control Standards	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not be a significant source of pollutants and would comply with all pollution control measures and would therefore be in compliance with EO 12088.
EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations* (59 Federal Register 7629)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not directly impact any residential populations including minority populations and low-income populations and would be in compliance with EO 12898.
EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (62 Federal Register 19885)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not directly, or indirectly, impact any residential populations (including children) or locations where congregations of children would occur (e.g., schools, daycare centers, etc.) and would be in compliance with EO 13045.
EO 13089, *Coral Reef Protection* (63 Federal Register 32701)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative would not affect any coral reef habitat and would be in compliance with EO 13089.

Table A-1. Principal Federal and State Laws Applicable to the Proposed Action (Continued)

Plans, Policies, and Controls	*Responsible Agency*	*Status of Compliance*
EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (66 Federal Register 3853)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative are not likely to have a measurable negative effect on migratory bird populations and would be in compliance with EO 13186.
EO 13175, *Consultation and Coordination with Indian Tribal Governments* (65 Federal Register 218)	Navy	The Proposed Action will not directly or indirectly affect any protected cultural, archeological or historic resources.
EO 13693, Planning for Federal Sustainability in the Next Decade (80 Federal Register 119)	Navy	The Proposed Action or the Reduced Dredging Footprint Alternative do not include structures with energy or water demands with potential improvements to conservation. Therefore, the Proposed Action or the Reduced Dredging Footprint Alternative would comply with EO 13693.

A.4 Irreversible or Irretrievable Commitments of Resources

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel, and natural or cultural resources. These resources are irretrievable in that they would be used for this project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

Implementation of the Proposed Action would involve human labor and the consumption of fuel, oil, and lubricants for dredging vehicles. Human labor would be a reversible commitment limited to the dredging period as laborers would be available for other project following completion of the project. Consumption of fuel, oil, and lubricants for dredging vehicles would include an irretrievable commitment of these resources; however, material consumption would be limited to implementing the Proposed Action and would not create a continuous demand for these resources by creating new permanent demand for these resources. Implementing the Proposed Action would not result in significant irreversible or irretrievable commitment of natural or depletable resources at NBPL.

A.5 Unavoidable Adverse Impacts

This EA has determined that the Proposed Action would not result in any significant impacts; therefore, there would be no probable adverse environmental effects that could not be avoided or that would not be amendable to mitigation.

A.6 Relationship between Short-Term Use of the Environment and Long-Term Productivity

NEPA requires an analysis of the relationship between a project's short-term impacts to the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site

reduces future flexibility in pursuing other options, or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

The Proposed Action or the Reduced Dredging Footprint Alternative would, reversibly, dedicate equipment and other resources to a particular use during a limited period of time. These resources would not be available for other productive uses throughout the duration of the Proposed Action or the Reduced Dredging Footprint Alternative. However, these impacts are considered less than significant, because the facilities and geographic areas associated with the Proposed Action and the Reduced Dredging Footprint Alternative area are designated for, and have historically accommodated, the types of uses proposed, and the duration would be minimal. Therefore, the Proposed Action or the Reduced Dredging Footprint Alternative would not result in any impacts that would reduce environmental productivity or permanently narrow the range of beneficial uses of the environment. In fact, if the dredged material is found to be suitable for nearshore replenishment at the beneficial reuse site, the Proposed Action would result in a benefit to long-term productivity at the site, or sites, selected to receive dredged material. Further, maintenance dredging at the Pier 5000 SSI berth expansion area likely would eventually be required, thereby potentially providing an additional, long-term source of material for beneficial reuse.

Appendix B
Air Quality Methodology and Calculations

DRAFT

RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY SAN DIEGO AIR BASIN

This Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

The United States Environmental Protection Agency (USEPA) published *Determining Conformity of General Federal Actions to State of Federal Implementation Plans; Final Rule*, in the 30 November 1993 Federal Register (40 Code of Federal Regulations [CFR] Parts 6, 51, and 93). The United States Navy (Navy) published *Clean Air Act Conformity Guidance* in Appendix F, Office of the Chief of Naval Operations Instruction (OPNAVINST) 5090.1C, dated 30 October 2007. These publications provide guidance to document Clean Air Act Conformity requirements.

Federal regulations state that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the Federal Agency to determine whether a Federal action conforms to the applicable implementation plan before the action is taken (40 CFR Part 1 51.850[a]).

Federal actions are exempt from conformity determinations if their emissions do not exceed designated *de minimis* levels for criteria pollutants (40 CFR 93.153c); *de minimis* levels (in tons/year) for the air basin potentially affected by the Proposed Action are listed in Table 1.

Table 1
General Conformity *de minimis* Levels Pursuant to 40 §CFR 93.153(b)(1)

Pollutant	*Area Type*	*Tons per year (tpy)*
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide, SO_2, and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$ Direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

Abbreviations:
CFR = Code of Federal Regulations
CO = carbon monoxide
NO_2 = nitrogen dioxide
NO_x = nitrogen oxides
O_3= ozone
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter
PM_{10} = particulate matter less than or equal to 10 microns in diameter
SO_2 = sulfur dioxide
VOC = volatile organic compound[1]

[1] The State of California refers to reactive organic gases (ROG) rather than VOC in some of its ozone-related SIP submissions. ROG and VOC refer essentially to the same set of chemical constituents, and for the sake of simplicity, this set of gases as will be referred to as VOC in this document (USEPA, 2020).

1.0 PROPOSED ACTION

Action Proponent: United States Navy

Location: Pier 5000 South at Naval Base Point Loma (NBPL)

Proposed Action Name: Pier 5000 South Side Inner (SSI) Berth Expansion Dredging at Naval Base Point Loma

Proposed Action and Emissions Summary: The Proposed Action would involve dredging of sediment adjacent to the Pier 5000 South Side Inner (SSI) berth and sediment transport for offsite disposal. The proposed dredge footprint is located outside of areas previously dredged by the Navy. Under the Proposed Action, depths at the Pier 5000 SSI berth would be increased to accommodate all classes and sizes of submarines in the Navy fleet. The Proposed Action would provide the benefit of maximizing the use of naval property, consistent with the policy objectives of the NBPL Activity Overview Plan to increase existing capabilities, sustainability, and efficiencies.

Depths adjacent to the pier vary from -28 feet (ft) mean lower low water (MLLW) near the shore to -44 ft MLLW in the Main Channel. The required operational depth for navigation and berthing of large current and future submarines is -36.6 ft MLLW, based on Naval Sea Systems Command (NAVSEA) Memo 3120 Ser 39T236/088, which specifies that water depth at the berth for all classes of submarine in the Navy fleet. Depths in the proposed dredge footprint range from -28 to -34 ft MLLW. The Pier 5000 SSI berth would be dredged to a depth of -36.6 ft MLLW, plus an additional 2 ft of overdredge allowance to accommodate variance in the precision of dredging equipment and methods. Therefore, the maximum dredge footprint is to an approximate depth of -38.6 ft MLLW and would be permitted for removal of 6,635 cubic yards (cy) of sediment.

Dredging would occur within a 19,050-square-foot area (0.44 acres) and would last up to 10 days. Dredging would most likely involve a barge-mounted clamshell dredge.

Under the Proposed Action, sediment disposal would comply with the relevant natural resource protection regulations and program requirements referenced in the Environmental Assessment (EA). The Proposed Action consists of three options for sediment disposal, determined by results of sampling and laboratory testing: beneficial reuse, offshore disposal, and upland disposal. Sediment characterization and chemistry test results will determine whether allowable parameters for beneficial reuse or unconfined ocean disposal are met. Nevertheless, this EA analyzes the Nearshore Replenishment Option (beneficial reuse), Offshore Disposal Option, and the Upland Disposal Option.

Future maintenance dredging may be necessary to maintain the operational depth requirement of -36.6 ft MLLW at the Pier 5000 SSI berthing area. Maintenance dredging refers to the routine removal of accumulated sediment to maintain the required operations. Routine maintenance dredging would not include any expansion of the previously dredged area.

Option 1: Nearshore Replenishment – Beneficial Reuse

The Nearshore Replenishment Option would involve loading the dredged sediment into barges and transporting it to a Nearshore Replenishment site for beneficial reuse. Beneficial reuse sites considered were the Silver Strand Boat Lanes or a similar beneficial reuse location. The location of the beneficial reuse site relative to NBPL is approximately 6 miles. The round-trip duration from the dredging site to the Silver Strand Boat Lanes beneficial replenishment site would be approximately 10 to 12 hours. Although the dredged materials for the Proposed Action were ultimately not approved for placement at the Silver Strand Boat Lanes because of sediment grain size characteristics, this alternative is still analyzed within this EA to determine potential impacts of placement to a nearshore beneficial reuse/placement area.

Option 2: Ocean Disposal

The *Ocean Disposal Option* for disposal of sediment associated with the Proposed Action involves loading the dredged sediment into barges and transporting it to the LA-5 Ocean Dredged Material Disposal Site (ODMDS). LA-5 ODMDS is a designated offshore open-water disposal site located on the ridged slope of the continental shelf at a depth of approximately 600 ft, 5.4 nautical miles from Point Loma, off the San Diego Coast. One tug/barge would be loaded with material at the dredge site, while the other is disposing of sediment at LA-5 ODMDS, ensuring that dredging can be completed in a timely manner while complying with LA-5 restrictions prohibiting more than one barge onsite at a time. Round trip from the Pier 5000 project site to LA-5 ODMDS is expected to take about 10 to 12 hours. The ocean disposal of dredged sediment is regulated under Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) and disposal operations would need to comply with permitting and dredging regulations published in Title 33 CFR Parts 320 through 330 and 335 through 338 (33 CFR 320–330 and 33 CFR 335–338). Dredged materials to be removed under the Proposed Action were approved for disposal at the LA-5 ODMDS by the USACE and USEPA in March 2021; however, the impact of sediment disposal at three alternative locations were evaluated within this EA.

Option 3: Upland Disposal

The *Upland Disposal Option* would be implemented if it is determined that the sediment is not suitable for either beneficial reuse or ocean disposal. Upland disposal involves transporting dredged sediment via barge to an upland confined drying facility (CDF) at Naval Base San Diego or other suitable drying facility. A round trip to that facility would be expected to take about 4 to 6 hours.

Once adequately dried, the sediment would be placed on a dump scow and mixed with a thickening agent. The sediment would then be transferred to a secondary holding site and tested for pH and water content in accordance with applicable landfill requirements and then transported via large trucks to a landfill such as the Otay Landfill or Sycamore Landfill, both of which are permitted Class III Landfills (Otay Landfill USEPA Facility Registration System ID 110000832243; Sycamore Landfill USEPA Facility Registration System ID 110070092140). Otay Landfill is located at 1700 Maxwell Road in Chula Vista, California, approximately 12.2 miles from the CDF

at Naval Base San Diego (NBSD), and Sycamore Landfill is located at 8514 Mast Blvd in Santee, California 92071, approximately 20.2 miles from NBSD.

Of the permitted maximum disposal rate of 6,700 tons per day, the Otay landfill has the capacity to accept 1,000 tons per day of dried dredged sediments while Sycamore Landfill can accept up to 700 tons per day of either dry or wet dredged sediments. For a fleet of 12-cy-capacity trucks, each carrying approximately 50,000 pounds (25 tons), the maximum number of trucks per day would be limited to 40 one-way sediment haul trips from the CDF to the Otay Landfill and 28 one-way sediment haul trips to the Sycamore Landfill.

Although the dredged materials for the Proposed Action were approved for unconfined aquatic disposal at the LA-5 ODMDS in March 2021, this alternative was still analyzed within this EA to determine potential impacts of placement to an upland placement location.

Air Emissions Summary

The Proposed Action would result in air emissions from sediment dredging, transport, and disposal activities. Because no changes in existing Pier 5000 operations (transit, berthing, maintenance, and repair of submarines) are proposed as part of the Proposed Action, operational emissions would not differ from baseline conditions. Dredging operations identified under the Proposed Action are assumed to be completed in approximately 10 days. Based on the air quality analysis for the Proposed Action, the maximum estimated emissions would be below the conformity *de minimis* levels and are summarized in Table 2.

Table 2
Proposed Action Emissions and Comparison to *de minimis* Thresholds

Construction Year	*Emissions (tpy)*					
	CO	*VOC*	*NO_x*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Proposed Action – Nearshore Replenishment (Silver Strand Boat Lanes)						
2021	0.65	0.16	1.78	0.00	0.06	0.06
de minimis Threshold/Major Source Threshold	100	50	50	100	70	70
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Proposed Action – Ocean Disposal Option (LA-5 ODMDS)						
2021	0.65	0.16	1.78	0.00	0.06	0.06
de minimis Threshold/Major Source Threshold	100	50	50	100	70	70
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Proposed Action – Upland Disposal Option (Otay or Sycamore Landfill)						
2021	1.37	0.24	2.56	0.00	0.11	0.11
de minimis Threshold/Major Source Threshold	100	50	50	100	70	70
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: tpy = tons per year. San Diego Is currently designated as a serious nonattainment area, however it may soon be redesignated as a severe nonattainment area. This redesignation to severe would reduce the *de minimis* thresholds for VOC and NOx to 25 tpy.

2.0 EMISSIONS EVALUATION AND CONCLUSION

The Navy concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting the conclusion shown in Table 2 above are included in the attachment to the RONA. Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this Record of Non-Applicability.

3.0 RONA APPROVAL

To the best of my knowledge, the information presented in this Record of Non-Applicability is correct and accurate and I concur with the finding that the Proposed Action does not require a formal Conformity Determination.

Date: _____

Signature: _____

REDUCED DREDGING FOOTPRINT ALTERNATIVE - Ocean Disposal

EQUIPMENT

Engine	Model Year	Maximum HP	Assumed Hours of Operation per Day	Assumed Days of Operation per Year
Main genset	2000	2935	12	7
Aux genset	2000	550	12	7
Spud winch	2000	250	12	7
Tugboat with Barge (1)	NA	800	12	7

Equipment	Load Factor	Emission Factors (g/HP-hr)								
		CO (2)	Nox (2)	PM_{10} (2)	$PM_{2.5}$ (2)	SO_2 (3)	VOC (2)	CO_2 (3)	CH_4	N_2O
Main Genset	0.51	1.83	6.25	0.184	0.184	0.006	0.53	568.3	0.048	0.594
Aux Genset	0.74	1.49	4.8	0.164	0.164	0.003	0.46	568.3	0.041	0.456
Spud Winch	0.51	1.39	5.23	0.172	0.172	0.006	0.48	568.3	0.043	0.497
Tugboat with Barge	0.2	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594

Equipment		Emissions (lbs/yr)								
		CO (2)	Nox (2)	PM_{10} (2)	$PM_{2.5}$ (2)	SO_2 (3)	VOC (2)	CO_2 (3)	CH_4	N_2O
Main Genset		507	1732	51	51	2	147	157531	13	165
Aux Genset		112	362	12	12	0	35	42833	3	34
Spud Winch		33	123	4	4	0	11	13418	1	12
Tugboat with Barge		252	273	16	16	0	30	15591	1	18
Total (lbs/yr)		904	2490	83	83	2	223	229373	18	228
Total (tons/yr)		**0.45**	**1.25**	**0.042**	**0.042**	**0.0011**	**0.11**			

Green House Gas Potential*	1	21	310	
Total CO_2e (metric tons/yr)	104.04	0.17	32.11	**136.33**

NOTES:

(1) Assumes 12 hours roundtrip barge trip

(2) Tier 1 Nonroad diesel engine standards. Taken from http://www.dieselnet.com/standards/us/nonroad.php

(3) AP-42 Section 3.4, sulfur content of fuel assumed to be 0.0015%

* IPCC Second Assessment Report (1996)

REDUCED DREDGING FOOTPRINT ALTERNATIVE - Upland Disposal Option

EQUIPMENT

Engine	Model Year	Maximum HP	Assumed Hours of Operation per Day	Assumed Days of Operation per Year
Main genset	2000	2935	12	7
Aux genset	2000	550	12	7
Spud winch	2000	250	12	7
Shore-Based Crane	NA	240	12	7
Loader	NA	900	12	7
Dump Truck - 12 CY HP-hrs (1) (2)	NA	6240	NA	NA

Equipment	Load Factor	Emission Factors (g/HP-hr)								
		CO (3)	Nox (3)	PM_{10} (3)	$PM_{2.5}$ (3)	SO_2 (4)	VOC (3)	CO_2 (4)	CH_4	N_2O
Main Genset	0.51	1.83	6.25	0.184	0.184	0.006	0.53	568.3	0.048	0.594
Aux Genset	0.74	1.49	4.8	0.164	0.164	0.003	0.46	568.3	0.041	0.456
Spud Winch	0.51	1.39	5.23	0.172	0.172	0.006	0.48	568.3	0.043	0.497
Shore-Based Crane	0.6	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594
Loader	0.5	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594
Dump Truck - 12 CY	NA	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594

Equipment		Emissions (lbs/yr)								
		CO (3)	Nox (3)	PM_{10} (3)	$PM_{2.5}$ (3)	SO_2 (4)	VOC (3)	CO_2 (4)	CH_4	N_2O
Main Genset		507	1732	51	51	2	147	157531	13	165
Aux Genset		112	362	12	12	0	35	42833	3	34
Spud Winch		33	123	4	4	0	11	13418	1	12
Shore-Based Crane		227	245	14	14	0	27	14032	1	16
Loader		708	767	45	45	0	83	43850	2	50
Dump Truck - 12 CY		117	127	7	7	0	14	7239	0	8
Total (lbs/yr)		1704	3356	134	134	3	317	278903	21	284
Total (tons/yr)		**0.85**	**1.68**	**0.067**	**0.067**	**0.0014**	**0.16**			

Green House Gas Potential*	1	21	310	
Total CO_2e (metric tons/yr)	126.51	0.20	39.97	**166.68**

NOTES:

(1) One-way distance from NBSD to Otay Landfill = 5.2 miles

(2) Assumed 120 roundtrip truck trips per day

(3) Tier 1 Nonroad diesel engine standards. Taken from http://www.dieselnet.com/standards/us/nonroad.php

(4) AP-42 Section 3.4, sulfur content of fuel assumed to be 0.0015%

* IPCC Second Assessment Report (1996)

PROPOSED ACTION - Ocean Disposal Option

EQUIPMENT

Engine	Model Year	Maximum HP	Assumed Hours of Operation per Day	Assumed Days of Operation per Year
Main genset	2000	2935	12	10
Aux genset	2000	550	12	10
Spud winch	2000	250	12	10
Tugboat with Barge (Two units operating at opposite ends of route) (1)	NA	800	12	10

Equipment	Load Factor	Emission Factors (g/HP-hr)								
		CO (2)	Nox (2)	PM_{10} (2)	$PM_{2.5}$ (2)	SO_2 (3)	VOC (2)	CO_2 (3)	CH_4	N_2O
Main Genset	0.51	1.83	6.25	0.184	0.184	0.006	0.53	568.3	0.048	0.594
Aux Genset	0.74	1.49	4.8	0.164	0.164	0.003	0.46	568.3	0.041	0.456
Spud Winch	0.51	1.39	5.23	0.172	0.172	0.006	0.48	568.3	0.043	0.497
Tugboat with Barge	0.2	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594

Equipment		Emissions (lbs/yr)								
		CO (2)	Nox (2)	PM_{10} (2)	$PM_{2.5}$ (2)	SO_2 (3)	VOC (2)	CO_2 (3)	CH_4	N_2O
Main Genset		725	2475	73	73	2	210	225044	19	235
Aux Genset		160	517	18	18	0	50	61190	4	49
Spud Winch		47	176	6	6	0	16	19169	1	17
Tugboat with Barge		360	389	23	23	0	42	22273	1	25
Total (lbs/yr)		1292	3558	119	119	3	318	327676	26	326
Total (tons/yr)		**0.65**	**1.78**	**0.060**	**0.060**	**0.0016**	**0.16**			

Green House Gas Potential*	1	21	310	
Total CO_2e (metric tons/yr)	148.63	0.25	45.87	**194.76**

NOTES:

(1) Assumes 12 hours roundtrip barge trip

(2) Tier 1 Nonroad diesel engine standards. Taken from http://www.dieselnet.com/standards/us/nonroad.php

(3) AP-42 Section 3.4, sulfur content of fuel assumed to be 0.0015%

* IPCC Second Assessment Report (1996)

PROPOSED ACTION - Upland Disposal Option

EQUIPMENT

Engine	Model Year	Maximum HP	Assumed Hours of Operation per Day	Assumed Days of Operation per Year
Main genset	2000	2935	12	10
Aux genset	2000	550	12	10
Spud winch	2000	250	12	10
Shore-Based Crane	NA	240	12	10
Loader	NA	900	12	10
Tugboat with Barge	NA	800	12	10
Dump Truck - 12 CY HP-hrs (1) (2)	NA	6240	NA	NA

Equipment	Load Factor	Emission Factors (g/HP-hr)								
		CO (3)	Nox (3)	PM_{10} (3)	$PM_{2.5}$ (3)	SO_2 (4)	VOC (3)	CO_2 (4)	CH_4	N_2O
Main Genset	0.51	1.83	6.25	0.184	0.184	0.006	0.53	568.3	0.048	0.594
Aux Genset	0.74	1.49	4.8	0.164	0.164	0.003	0.46	568.3	0.041	0.456
Spud Winch	0.51	1.39	5.23	0.172	0.172	0.006	0.48	568.3	0.043	0.497
Shore-Based Crane	0.6	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594
Loader	0.5	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594
Tugboat with Barge	0.2	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594
Dump Truck - 12 CY	NA	8.5	9.2	0.54	0.54	0.0055	1.0	526.2	0.029	0.594

Equipment		Emissions (lbs/yr)								
		CO (3)	Nox (3)	PM_{10} (3)	$PM_{2.5}$ (3)	SO_2 (4)	VOC (3)	CO_2 (4)	CH_4	N_2O
Main Genset		725	2475	73	73	2	210	225044	19	235
Aux Genset		160	517	18	18	0	50	61190	4	49
Spud Winch		47	176	6	6	0	16	19169	1	17
Shore-Based Crane		324	350	21	21	0	38	20046	1	23
Loader		1012	1095	64	64	1	119	62643	3	71
Tug with Barge		360	389	23	23	0	42	22273	1	25
Dump Truck - 12 CY		117	127	7	7	0	14	7239	0	8
Total (lbs/yr)		2744	5130	211	211	4	489	417604	31	428
Total (tons/yr)		**1.37**	**2.56**	**0.106**	**0.106**	**0.0020**	**0.24**			

Green House Gas Potential*	1	21	310	
Total CO_2e (metric tons/yr)	189.43	0.30	60.15	**249.87**

NOTES:

(1) One-way distance from NBSD to Otay Landfill = 12.2 miles

(2) Assumed 120 roundtrip truck trips per day

(3) Tier 1 Nonroad diesel engine standards. Taken from http://www.dieselnet.com/standards/us/nonroad.php

(4) AP-42 Section 3.4, sulfur content of fuel assumed to be 0.0015%

* IPCC Second Assessment Report (1996)

Appendix C
Essential Fish Habitat Assessment and Endangered Species Act Documentation

ESSENTIAL FISH HABITAT ASSESSMENT

Pier 5000 South Side Inner Berth Expansion Dredging

NAVAL BASE POINT LOMA, SAN DIEGO, CALIFORNIA

March 2021

Prepared for:

NOAA National Marine Fisheries Service
West Coast Region
Protected Resources Division
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Enclosure (2)

ACRONYMS AND ABBREVIATIONS

ac	acres
CCP	Caulerpa Control Protocol
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
cy	cubic yards
dB	decibel(s)
EFH	essential fish habitat
FMP	Fishery Management Plan
ft	feet/foot
ha	hectares
HAPC	Habitat Area of Particular Concern
µPa	microPascal
m	meter(s)
MLLW	mean lower low water
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MPRSA	Marine Protection, Research, and Sanctuaries Act of 1972
NAVFAC SW	Naval Facilities Engineering Command Southwest
NAVFACSYSCOM	Naval Facilities Engineering Systems Command
NBPL	Naval Base Point Loma
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
ODMDS	Ocean Dredged Material Disposal Site
PFMC	Pacific Fishery Management Council
POSD	Unified Port of San Diego
Proposed Project	NBPL Pier 5000 South Side Inboard Berth Expansion Dredging Project
RHA	Rivers and Harbors Act
RMS	root mean square
SEL	sound exposure level
SELcum	SEL cumulative sound pressure level
SUAD	suitable for unconfined aquatic disposal
USC	United States Code
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Applicant: United States Department of the Navy (Navy)

Project Name: Naval Base Point Loma (NBPL) Pier 5000 South Side Inner Berth Expansion Dredging

Location: NBPL, San Diego, California

The objective of this Essential Fish Habitat (EFH) Assessment is to assess the potential effects of dredging and sediment disposal proposed at the Pier 5000 South Side Inner Berth Expansion Dredging Expansion project (Project) at NBPL, in San Diego, California. The proposed Project would likely take place in late 2021 through early 2022 and outside of the California least tern (*Sterna antillarum browni*) breeding and nesting season (April 1 to September 15). Figure 1 displays the Project location.

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) on activities that "may adversely affect" EFH for relevant, commercially important, federally managed fisheries species within a proposed Project area. It also describes conservation measures to avoid, minimize, or otherwise offset potential adverse effects on designated EFH resulting from implementation of the proposed Project. This assessment of EFH is being provided in conformance with the 1996 amendments to the MSFCMA as well as the Navy Policy Regarding Essential Fish Habitat Assessments and Consultations (Navy 2011).

The objective of this EFH Assessment is to determine whether the actions proposed "may adversely affect" designated EFH for relevant commercially important, federally managed fisheries species. The proposed Project occurs in EFH for various federally managed fish species within the Pacific Coast Groundfish and Coastal Pelagic Species Fishery Management Plans (FMPs).

The Navy recently submitted a request to NMFS to approve a maintenance dredging project in an area contiguous with this location. The project, entitled the Pier 5000/5002 Inner Berths Dredging and Disposal Project (Naval Facilities Engineering Systems Command [NAVFAC SW] 2020a) was approved by NMFS November 24, 2020 under the Navy's *Programmatic Endangered Species Act Section 7(2) and Magnuson-Stevens Fishery Conservation and Management Act 305(b)(4)(A) for waterfront structure maintenance and new construction projects occurring in San Diego Bay conducted by the Navy* (NMFS 2017). The project, entitled the Pier 5000/5002 Inner Berths Dredging and Disposal Project is expected to be performed prior to dredging for this Project; however, proposed Project activities will be the same for both areas.

Comprehensive descriptions of the marine environment including climate; marine geology, physical, chemical, and biological oceanography; marine habitats; and protected species in the Project site has been documented in the following:

- San Diego Bay Integrated Natural Resources Management Plan, Final. San Diego, California. (Naval Facilities Engineering Command Southwest [NAVFAC SW] and Port of San Diego [POSD] 2013);
- Environmental Assessment for the Naval Base Point Loma Pier 5000 North Side Outer Berth and Pier Approach Dredging (NAVFACSW 2019a);
- Essential Fish Habitat Assessment for the Pier 5000 Northside Outer Berthing and Approach Area Dredging at Naval Base Point Loma, CA (NAVFACSW 2019b).

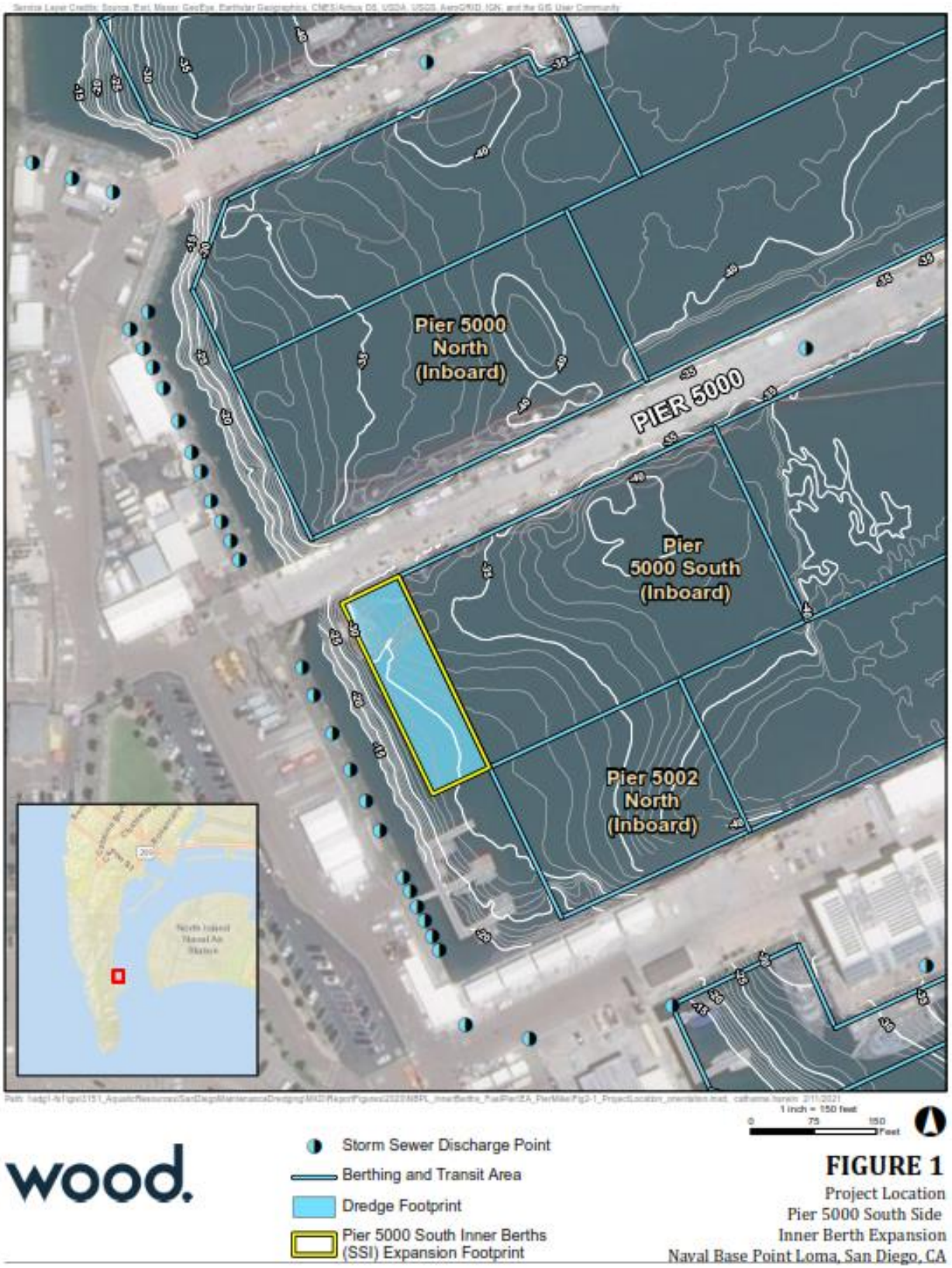

Figure 1.Project Location.

2.0 PROJECT DESCRIPTION

The Navy is proposing to expand and deepen the berthing area at the Project site within San Diego Bay in San Diego, California in late 2021 through early 2022. All dredging and disposal activities would occur outside of the California least tern nesting season.

Pier 5000 has historically been used for berthing large submarines. It was constructed in 1962 and last refurbished in 1991 (NAVFAC SW 2007). Previous dredging activities at the Pier 5000 site occurred in the 1940s and then again in 2014 and 2019 (Peeling 1975; Navy 2014; NAVFAC SW 2019a). A map from the Port of San Diego archives that identifies San Diego Bay dredging projects between 1935 and 1960 shows that the majority of the Project area was dredged to a depth of -11.0 meters (m; -36 feett [ft]) mean lower low water (MLLW) in 1940. However, as-built drawings for Pier 5000 show that areas closer to shore, including those that underlie the proposed Project area, were only dredged to -10.9 m (-36 ft) MLLW. The Project area is approximately 0.17 hectares (ha; 0.44 acres) and was previously occupied by a floating dock used for mooring small vessels. After review by Navy facility planners, it was determined that the floating dock would be removed and disposed of to accommodate future ship berthing of all classes and sizes of Navy submarines and create more berthing flexibility by expanding the Project area.

Project-related activities actions would consist of dredging the seafloor in the Project dredge footprint to a depth of -11.2 m (-36.6 ft) MLLW, with an estimated 0.6-m (2-ft) of overdredge (to -11.8 m [-38.6 ft] MLLW). Dredging would likely be performed using a mechanical clamshell bucket dredge to remove an estimated total dredged volume of 6,365 cubic yards (cy) of sediment. The proposed placement location for the dredged materials is at the LA-5 Ocean Dredged Material Disposal Site (ODMDS) located approximately 5.4 nautical miles (6.2 miles) from Point Loma, off the San Diego Coast (Figure 2), or at the Silver Strand Boat Lanes located approximately 5.2 nautical miles (6 miles) southeast of the Project site (Figure 3). Additionally, an upland disposal option such as the Otay Landfill (a Class III Landfill) would be pursued if the sediment is determined to be not suitable for in water placement.

In-water actions and disposal will comply with pertinent regulatory programs, including the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), Sections 401 and 404 of the Clean Water Act (CWA), and Section 10 of the Rivers and Harbors Act (RHA). The proposed Project evaluated several alternatives for placement for the proposed dredged material including: 1) nearshore beneficial reuse at the Silver Strand Boat Lanes, 2) ocean disposal at the LA-5 ODMDS, and 3) upland disposal. A sediment characterization study was performed by NAVFACSYSCOM in May 2020 and February 2021 in support of this determination.

<u>Dredged Material Placement and Disposal of Debris</u>

The disposal site for the dredged material from the Project area will be determined based on physical and chemical testing results and similarity to sediments from the directly adjacent Pier 5000/5002 Inner Berths maintenance dredging area. Dredged materials from the maintenance dredging area were approved as suitable for unconfined aquatic disposal by the United States Army Corps of Engineers (USACE) and United States Environmental Protection Agency (USEPA) in December 2020. If dredged material from the Project site is considered by the agencies to have low chemical levels, similar to the maintenance area dredged materials, then the dredged materials will be placed at either the LA-5 ODMDS or the Silver Strand Boat Lanes.

Placement of dredged material for the proposed Project would involve loading sediment onto barges and transporting it to the LA-5 ODMDS, a designated offshore open-water disposal site located on the ridged slope of the continental shelf at a depth of approximately 5.4 nautical miles (6.2 miles) from Point Loma,

off the San Diego coast (Figure 2), or the Silver Strand Boat Lanes, a beneficial reuse receiver site located approximately 5.2 nautical miles (6 miles) from the Project site (Figure 3). Unconfined aquatic disposal of dredged material in the ocean is regulated under MPRSA Section 103, and disposal operations must comply with permitting and dredging regulations published in Title 33 Code of Federal Regulations (CFR) Parts 320 through 330 and 335 through 338 (33 CFR 320-330 and 33 CFR 335-338).

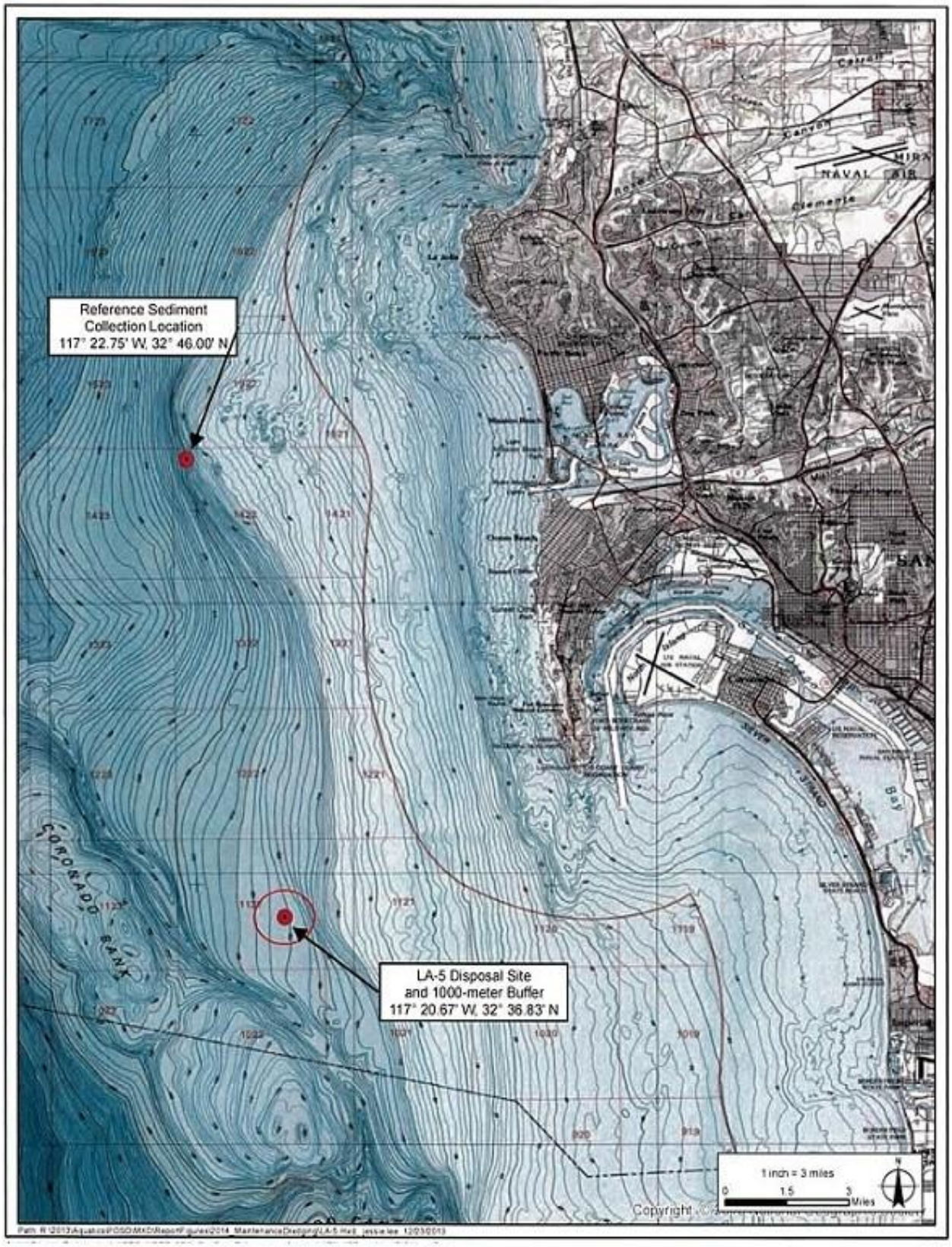

Figure 2. LA-5 Ocean Dredged Material Disposal Site.

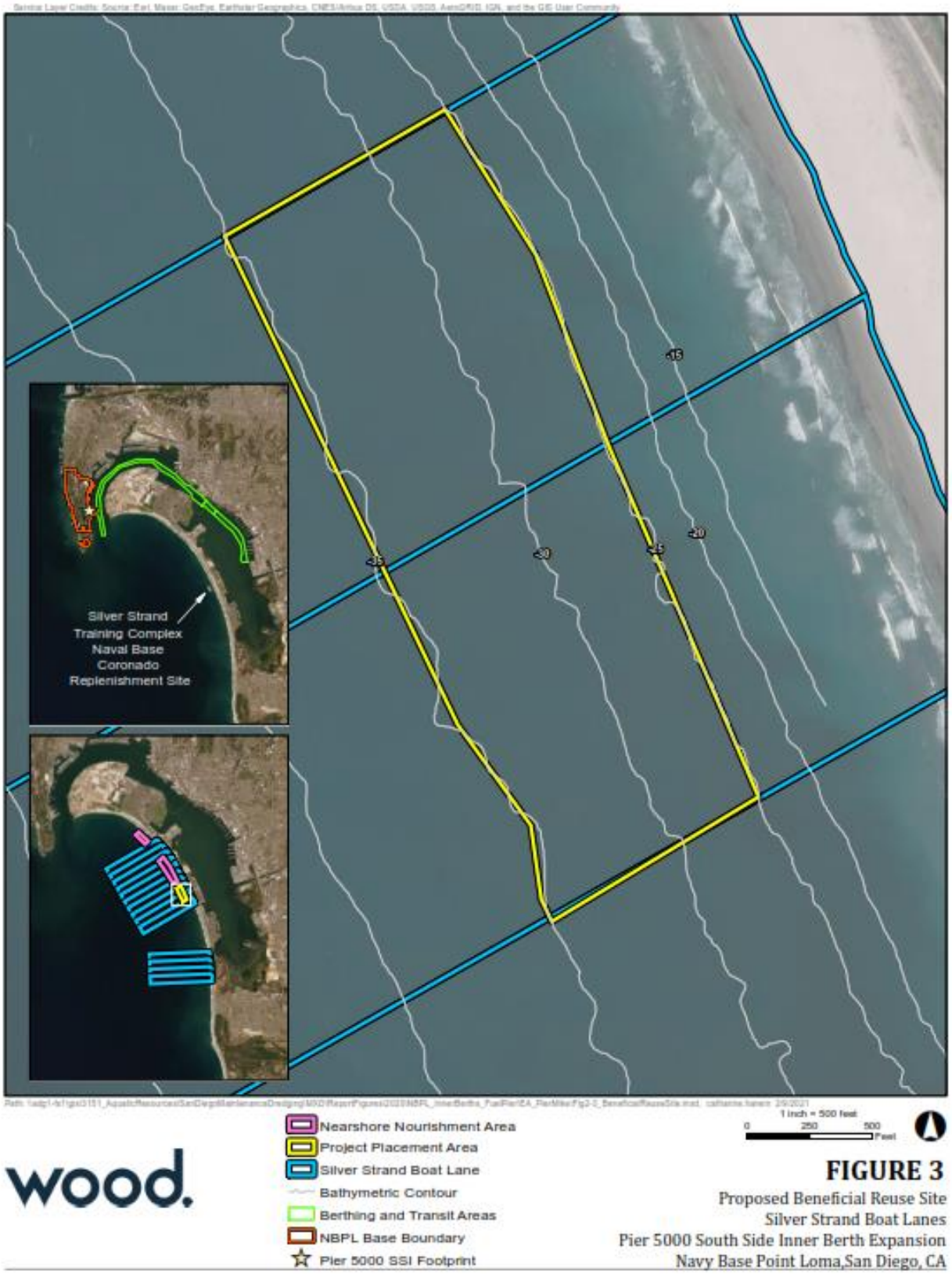

Figure 3. Silver Strand Boat Lanes Dredged Material Disposal Site.

2.1 Project Location

The Project site is located at NBPL Pier 5000, San Diego, CA. NBPL is located on the northwestern side of San Diego Bay, opposite Naval Air Station North Island, and adjacent to the mouth of the Bay. NBPL is bordered to the north by the communities of La Playa and Sunset Cliffs, to the south and west by the Pacific Ocean, and to the east by San Diego Bay. The area to be dredged is shown on Figure 1.

San Diego Bay is a naturally formed embayment and is the largest estuary between San Francisco Bay and Baja California. The Bay is long and narrow with a crescent shape extending in a northwest to southeast direction. The North Bay is connected to the Pacific Ocean through a mouth approximately 1 kilometer (0.62 mile) wide. The South Bay is closed and without substantial tributaries. The San Diego River has been diverted from the Bay, and two small channels (the Otay River and Sweetwater River) provide intermittent seasonal flows. The Otay River enters San Diego Bay at its southernmost extent, and the Sweetwater River enters approximately 7 kilometers (4.3 miles) to the north on the eastern shore. Freshwater input to the Bay is limited for the most part to surface runoff from urban areas (e.g., from more than 200 storm drains). For about nine months of the year, the Bay receives no significant amount of fresh water and normal estuarine circulation in the Bay is weak during these periods (NAVFAC SW 2010). Given its proximity to the mouth of the Bay and little freshwater input through much of the year, the proposed Project area in the North Bay is strongly influenced by the coastal marine environment outside of the Bay.

San Diego Bay presently has 3,552 ha (8,779 acres) of shallow and deep-water habitat. Aquatic habitats within the San Diego Bay are differentiated by depth, substrate, and man- made or natural biological features. The San Diego Bay Integrated Natural Resources Management Plan (NAVFAC SW and POSD 2013) identified habitats based on the depth regimes in Table 1.

Table 1. Aqutic Habitats and Depth Regimines in San Diego Bay (NAVFAC SW and POSD [2013])

Aquatic Habitat	Depth Regime (MLLW)
Intertidal habitat	+2.4 to -0.67 m (+7.8 to -2.2 ft)
Shallow subtidal habitat	-0.67 to -3.7 m (-2.2 and -12 ft)
Moderately deep subtidal habitat	-3.7 to -6.1 m (-12 and -20 ft)
Deep subtidal habitat	greater than -6.1 m (-20 ft)

Moderately deep and deep habitats maintain similar biological functions, while shallow habitat has the potential to support greater primary productivity and overall greater diversity of habitats and ecological communities. San Diego Bay is characterized by a wide range of marine habitats including the water column, soft bottom which predominates in the bay, eelgrass, and artificial hard substrates primarily associated with piers and jetties. These habitats represent important breeding, nursery, and feeding areas for numerous fish species and their prey (NAVFAC SW and POSD 2013).

As a result of human development, San Diego Bay has experienced substantial historical degradation and loss in quantity and quality of intertidal and subtidal habitat. Losses of intertidal habitat have been severe with up to 90 percent of intertidal areas in the north and central San Diego Bay lost, partially because of the diversion of the San Diego River (NAVFAC SW and POSD 2013), and also because these areas have historically been filled with dredged material for shoreline reclamation (Peeling 1975). The intertidal zone is also threatened by shoreline alteration and development such as the building of piers, docks and seabreaks, as well as riprap placement to slow erosion of crumbling sandstone cliffs, which often leads to

unintended changes in sedimentation along the shoreline. Currently, less than 25.7 kilometers (16 miles) of "soft," undeveloped, shoreline remain in San Diego Bay (NAVFAC SW and POSD 2013).

2.2 Habitats at the Project Site

Habitats observed at the Project area include the following:

- Piers/Wharves – piers, wharves, and their associated pilings attract many fish species such as surfperches, rockfish, algae, barnacles, and mussels.
- Open Water – the entire dredge footprint is comprised of open water habitat, consisting of deep subtidal areas. Common fish species known to occur in open water habitats of San Diego Bay include topsmelt (*Atherinops affinis*) and anchovy (*Engraulis* sp. and *Anchoa* sp.). The occurrence of these fish species in open water is important for several species of piscivorus birds including pelicans, terns, loons, grebes, cormorants, and mergansers.

The proposed Project area has never supported eelgrass, with deep subtidal habitat (greater than -6.1 m [-20 ft]) in the Project footprint. The nearest known eelgrass patches are approximately 233 m (765 ft) to the southeast and 293 m (960 ft) to the north of the Project area (Merkel & Associates, Inc. 2017; 2020a). In March 2020, a subaquatic vegetation survey adjacent to the Project area was completed and none was identified (Merkel & Associates, Inc. 2020a, 2020b, 2020c).

3.0 ESSENTIAL FISH HABITAT AND HABITAT OF PARTICULAR CONCERN

EFH is described as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (50 CFR Section 600.10). Regional Fishery Management Councils are required by the MSFCMA to identify EFH in FMPs (16 U.S. Code [USC] Sections 180l–189ld). The Pacific Fishery Management Council (PFMC) is responsible for designating EFH for all federally managed species occurring in the coastal and marine waters off the coasts of Washington, Oregon, and California. The PFMC has designated EFH for species within the FMPs for each of the four primary fisheries that they manage: Pacific Coast Groundfish (PFMC 2016a), Coastal Pelagic Species (PFMC 2019), Pacific Coast Salmon (PFMC 2016b), and West Coast Fisheries for Highly Migratory Species (PFMC 2018).

In addition to designating EFH, the PFMC is also responsible for identifying Habitat Areas of Particular Concern (HAPCs) for federally managed species. EFHs that are considered to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation, may also be identified by NMFS as HAPCs. For types or areas of EFHs to be considered HAPCs, at least one of the following must be demonstrated:

- The importance of the ecological function provided by the habitat;
- The extent to which the habitat is sensitive to human-induced environmental degradation;
- Whether, and to what extent, development activities are, or would be, negatively impacting the habitat type; and
- The rarity of the habitat.

The PFMC has designated HAPCs for groundfish only. The HAPCs are seagrass, canopy kelp, rocky reef, and estuarine habitats along the Pacific coast (PFMC 2016a). Two HAPCs (seagrass [*Zostera marina*, a species of seagrass] and estuarine habitats) are found within San Diego Bay but do not occur within the Project area (NAVFAC SW 2010).

The nearest estuarine habitat to the Project site is located in the southern part of San Diego Bay associated with the Sweetwater Marsh and, to a very limited extent, in the Paleta Creek channel, 12.7 kilometers (8 miles) and 9.8 (6 miles) southeast, respectively, from the Project site (Navy 2014; NAVFAC SW and POSD 2013). It is recognized, however, that Southern California bays, including San Diego Bay, are generally classified as estuarine HAPC by NMFS because of their importance as nursery habitat.

Eelgrass habitat is extensive in San Diego Bay. This shallow water habitat supports a unique assemblage of juvenile and adult fishes (Pondella and Williams 2009a, 2009b). It provides important nursery areas for fish and invertebrates that are prey for the California least tern and other marine birds. Furthermore, these sites are noted for overall higher diversity compared to the unvegetated bottom habitat that characterizes the Project area. Results of recent eelgrass habitat mapping of San Diego Bay indicated that approximately 11 percent of the Bay is vegetated with eelgrass (Merkel & Associates, Inc. 2017). Approximately 109 species of fish have been documented in San Diego Bay. There is a greater variety of fish species in the North Bay area than in the South Bay, and the greatest fish diversity can be found at artificial reefs. Increased levels of flushing found in the North Bay also increase food availability, supply of larval recruits, and water quality (Navy 2010). Eelgrass beds, in particular, are recognized as highly productive and important nursery habitat in San Diego Bay; however, they do not occur directly within the Project area (NAVFAC SW and POSD 2013, Merkel & Associates, Inc. 2020a, 2020b, 2020c), with the closest eelgrass bed 233 m (765 ft) to the southeast of the project area. Although there is no commercial fishing within San Diego Bay, seven fish species inhabiting San Diego Bay support commercial fisheries elsewhere in Southern California waters. Examples of notable fishery populations found in San Diego Bay include California halibut (*Paralichthys californicus*) and white seabass (*Atractoscion nobilis*).

4.0 EFH-MANAGED SPECIES

The Project location, including disposal options, occurs in EFH for various federally managed fish species within the Pacific Coast Groundfish and Coastal Pelagic Species FMPs. In addition, the proposed Project occurs within an estuary, identified as HAPC for various federally managed fish species within the Pacific Coast Groundfish FMP.

Of the 109 fish species identified in San Diego Bay (NAVFAC SW and POSD 2013), 11 are managed by NMFS and may occur at the Project site. Four are managed under the Coastal Pelagic Species FMP (PFMC 2019): northern anchovy (*Engraulis mordax*); Pacific sardine (*Sardinops sagax*); Pacific [chub] mackerel (*Scomber japonicus*); and jack mackerel (*Trachurus symmetricus*). Seven species covered under the Pacific Groundfish FMP (PFMC 2016a) may occur, although not in abundance, in San Diego Bay: California scorpionfish (*Scorpaena guttata*); grass rockfish (*Sebastes rastrelliger*); English sole (*Parophrys vetulus*); curlfin sole (*Pleuronichthys decurrens*); leopard shark (*Triakis semifasciatus*); and soupfin shark (*Galeorhinus galeus*); and spiny dogfish (*Squalus acanthias*). These managed groundfish species are not common and are not expected in the vicinity of Project dredge footprint.

Because the Project region is located within an area designated as EFH by the Pacific Coast Groundfish and Coastal Pelagic Species FMPs, species covered by these plans are considered in this EFH Assessment.

5.0 ASSESSMENT OF POTENTIAL IMPACTS

An adverse effect on EFH is "any impact that reduces the quality and/or quantity of EFH" (see 50 CFR Section 600.910(a) for further clarification). Potential impacts on EFH associated with the proposed Project would occur temporarily during dredging and offshore sediment disposal. Proposed Project activities may impact EFH as a result of changes in water quality, underwater noise, or alterations to habitat or fish communities.

Water Quality

Impacts on water quality could potentially result from suspension of sediments in the water column during dredging, and in-water placement of dredged material. The size and shape of a turbidity plume from dredging, and disposal are difficult to quantify because of variability in naturally occurring conditions, such as wind and currents, and type of dredging equipment. Consequently, it is difficult to predict the specific areas that may be influenced by a plume.

Sediment from the proposed dredged footprint is silty with low chemical concentrations (NAVFAC SW 2021). The types of water quality impacts that may occur during the proposed Project construction include the following:

- Increased turbidity (sediment suspension resulting in reduced water clarity and light transmittance)
- Increased dissolved or particulate contaminants (that were previously bound to dredged sediment or in pore water)
- Reduced dissolved oxygen (from suspension of sediments with low oxygen)

Sediment disturbance caused by activities performed for the Project would cause minor and short-term impacts on EFH. In addition, Project activities may potentially affect existing unvegetated soft-bottom benthic communities and any marine species within the immediate vicinity. Effects would potentially occur through exposure to short-term changes in suspended sediments, turbidity, dissolved oxygen, or light diffusion. Based on observations of turbidity caused by bottom disturbances in areas similar to the Project site, turbidity plumes are expected to be limited to the areas of bottom disturbance and would persist for less than one hour following disturbance (NAVFAC SW 2016; AMEC 2008). Furthermore, sediment resuspension, increased turbidity, or chemical changes would be limited to the areas of bottom disturbance and would persist only for the duration of dredging activities.

Turbidity would vary spatially based on currents and sediment grain size. Increased turbidity may result in temporary decreases in light penetration and levels of dissolved oxygen. To minimize turbidity, a clamshell bucket dredge would be used for the proposed Project because it causes less turbidity than the cutter head/hopper dredge method. Decreases in levels of light penetration and dissolved oxygen would occur only within a few hundred feet of the dredging site and would end shortly after cessation of dredging activities and subsequent settling of disturbed sediments, making a permanent decline in aquatic primary productivity unlikely.

Overall, it is anticipated that decreased water quality may impact fish species due to increased physiological stress, reduced feeding, and avoidance of the area, which could potentially result in impaired growth, reduced lipid stores, and increased likelihood of mortality for individual fishes (NMFS 2008). However, it is anticipated that the effects of short-term dredging- related impacts, as described above, would be temporary and minor at a population scale.

Underwater Noise

Noise levels that may cause injury are defined by NOAA-Fisheries as those noise levels above 206 peak dB (dB_{PEAK}) and 187 decibels (dB) sound exposure level (dB_{SEL}) for fish over 2 grams and noise levels above 206 dB_{PEAK} and 183 dB_{SEL} for fish under 2 grams. Behavioral disturbance has been suggested at noise levels above 150 dB root mean square dB (dB_{RMS}) (Caltrans 2015). The likelihood of behavioral responses is qualitatively considered to be high within tens of meters, intermediate within hundreds of meters, and low at thousands of meters (Popper et al. 2014).

Dredge-related activities: Dredging activities are estimated to occur for approximately 10 days. Jones et al. (2015) assessed noise in both coarse sand/gravel and unconsolidated sediment, with the noise associated with bucket/clamshell dredging operations ranging from 99 (dB_{RMS}) at 150 m (492 ft) for the bucket closing to 124 dB_{RMS} at 150 m (492 ft) for the bucket contacting the bottom. Dickerson et al (2001) found similar results with the noise levels for the bucket making contact with the bottom measured at 124 dB_{RMS} at 158 m (518 ft). Ambient levels in north San Diego Bay were found to be 129.6 dB_{RMS} based on several years of noise monitoring (NAVFAC SW 2020b). Assuming a simplistic spreading loss model using practical spreading, dredging noise would reach ambient levels between 63 and 74 m (207 to 243 ft) from a bucket closing. While noise levels near the dredge activities would exceed ambient levels near to the clamshell bucket, the noise would be temporary and short-term, and there would be no long- term change in the noise environment in the Project area. While fish may leave the Project area due to disturbance from dredging noise, the expectation would be that they would return to the Project area once dredging had been completed.

Vessel Movement: Anthropogenic noise consists of vessels (small and large), dredging, aircraft overflights, and construction noise. Known noise levels and frequency ranges associated with anthropogenic sources similar to those that would be used for this Project include:

- Small vessels: 141-175 dB at 1 meter (Galli et al. 2003, Matzner and Jones 2011; Sebastianutto et al. 2011)
- Large vessels: 157-188 dB at 1 meter (McKenna 2011, Kipple and Gabriele 2007)
- Tug docking gravel barge: 149 dB at 100 m (Blackwell and Greene 2002)

Vessel traffic in the Project area during non-dredging times would primarily consist of small vessels and tugboats used during boat/submarine docking and or Port Operations. During dredging, vessels would be excluded from the immediate project area, with a majority of the project-related noise related to dredging.

Alteration of Marine Habitats and Communities

The proposed Project area includes deep subtidal habitat with depths greater than 6.1 m (20 ft) MLLW. Dredging of the Project area to final depth of -11.2 m (-36.6 ft) MLLW, plus a 0.4-meter (2-foot) overdredge allowance to -11.8 m (-38.6) ft MLLW, would not change the subtidal habitat depth classification, as current depths range from approximately 8.5 to 10.4 m (-28 to -34 ft), and is not expected to alter fish density or habitat functions.

Any benthic flora within the immediate Project area would be eliminated by the dredging activities because of site excavation and substrate removal. Invertebrates within the dredging footprint would be either lost or relocated with sediment but are expected to recover from the disturbance upon completion of the dredging activities.

Any fish in the area would be capable of avoiding Project equipment. Any impacts on marine algae and meioflora would be localized, minimal, and not significant. Dredged material would be moved to a

previously permitted disposal site. Therefore, dredging may have some adverse, but less than significant, impacts on marine life.

A survey for *Caulerpa* consistent with NMFS and the California Department of Fish and Wildlife (CDFW) requirements would be conducted before initiating in-water Project activities. If *Caulerpa* is found in the Project area during this survey, Caulerpa Control Protocol (CCP) would be followed. Therefore, implementation of the proposed Project would not result in significant impacts on special aquatic sites associated with the spread of *Caulerpa*.

Fish Species

The proposed Project would potentially affect fish species through physical, chemical, and biological changes to the environmental baseline (as discussed above), and through direct effects. These effects include disruption of pathways, decreased benthic and pelagic foraging opportunities, short-term negative water quality effects, suspension of contaminated sediments, and direct abrasion from increased sedimentation.

Fish species occurring in the immediate area would likely be displaced during Project activities, either directly by equipment, dredging, or disposal activities or indirectly by short- term changes in suspended sediments, turbidity, and changes in light diffusion. Noise levels are expected to be far below the effects thresholds discussed above. Thus, impacts on fish from underwater noise would not be significant under the National Environmental Policy Act because of the limited geographic and temporal scale, and because fish species would return to the project area following completion of project activities. Impacts on EFH under the MSFCMA are discussed below.

Sediment testing results for the proposed Project area showed that several chemicals were elevated above effects range low sediment quality guidelines (NAVFAC SW 2021). However, results of recent toxicity tests , which evaluate various exposure routes and feeding types to comply with ocean disposal testing requirements (USACE and USEPA 1991), performed on sediments from the adjacent maintenance dredging footprint indicated that there would not be a significant biological effect to fish and invertebrate species exposed to the dredged materials (NAVFAC SW 2020a). In addition, there was no significant bioaccumulation of any chemical in clam or worm tissues when exposed to sediments from the adjacent footprint after a 28-day exposure period. Therefore, no long- term effects to species either directly exposed to the dredged materials or at higher trophic levels is expected to occur.

Although the outer edges of piers support increased fish biomass, abundance, and species richness, managed species expected to occur in the Project area are highly mobile and are not closely tied to artificial substrates. If present, such species would likely leave the immediate Project area during dredging and return when dredging is completed. Hence, there would be minimal short-term adverse effects on EFH from dredging per the MSFCMA.

The area surrounding the Project footprint is not optimal habitat for FMP species in San Diego Bay due to the existing usage of the facilities, armored shoreline, and historic dredging in the channel adjacent to the site. Juvenile and adult pelagic fish of species which might visit the area are mobile and would be able to avoid any action that may occur at the Project site. Fish species that are known to occur around eelgrass habitat, non-vegetated intertidal and subtidal mud and sand habitats, and man-made structures in San Diego Bay may already avoid the proposed Project site due to the large amount of vessel traffic through the area and operational activities. Eggs and larvae would not be harmed by any dredging in the area.

Short-term impacts associated with dredging will occur from increased suspended sediments and noise levels. Turbidity may impact sight feeding but affected fish species will presumably disperse to surrounding habitats where feeding will be less problematic.

Impacts from in-water Project activities would adversely affect EFH by temporarily displacing fish due to increased sediment suspension and underwater noise from dredging activities. However, all the managed fish species are not dependent on either eelgrass habitat or artificial substrates, and routinely experience turbid and noisy conditions due to natural processes and ship traffic within the bay. For these reasons and for the reasons discussed below, the adverse effects that would be created by the proposed Project would be minimal.

Four managed coastal pelagic fish species (jack mackerel, northern anchovy, Pacific mackerel, and Pacific sardine) and seven managed groundfish species (curlfin sole, California scorpionfish, English sole, grass rockfish, leopard shark, soupfin shark and spiny dogfish) have the potential to occur in the Project area (Allen et al. 2002; Pondella and Williams 2009a, 2009b; Williams et al. 2016, 2019). Northern anchovy and Pacific sardine can be found throughout San Diego Bay. Jack mackerel were found only on the North Bay survey area and Pacific mackerel were found at all locations except the South Bay (Allen et al. 2002). All of these species are highly transient, are not tied to artificial substrates, and routinely experience turbid and noisy conditions from natural processes and ship traffic within San Diego Bay. Impacts from dredging activities from the proposed Project would be the same as those described for other fish communities in the discussion above. Other effects would occur from increased suspended sediments and turbidity. These impacts would result in minimal adverse effects per the MSFCMA.

An indirect effect of the temporary reduction in invertebrate populations would be a reduction in forage base for fish and other organisms feeding on invertebrates. Nevertheless, colonization of the sands would begin almost immediately, and development of the invertebrate prey base would proceed naturally. Based on field data from the sediment collection effort in 2021 that showed sediments in the over dredge layer (between approximately -11.2 (-36.6) and -11.8 m [-38.6 ft] MLLW) to be comprised of poorly graded sand, it is anticipated that the resultant sediment within the Project area would be sandy, similar to adjacent berthing areas at Pier 5000. Therefore, because of the relatively rapid recovery rates of sandy subtidal invertebrates, direct and indirect impacts on prey/marine organisms within the replenishment site are expected to be less than significant. Additionally, nearshore replenishment provides beneficial beach nourishment, which is ultimately positive for marine organisms and coastal ecology. Hence, there would be minimal, short-term adverse effects on EFH from project activities.

5.1 Proposed Placement Sites

Impacts on managed fish species are anticipated to be temporary and minimal. Impacts could include localized increases in turbidity and sedimentation in the water column during dredged material placement. Direct impacts on the soft bottom benthic community would include loss or mortality of any benthic infauna and epifauna within the sediment placement footprint. As discussed previously, it is anticipated that the benthic community would recolonize rapidly following disturbance. Motile fish species would be expected to relocate during sediment placement.

5.2 Conservation Measures

5.2.1 Consideration of NMFS (2017) Programmatic Consultation for Waterfront Structure Maintenance and New Construction Projects

NMFS prepared a Programmatic Endangered Species Act and EFH Consultation for the Navy's Maintenance and Construction Program pursuant to Section 7(a)(2) of the ESA and Section 305(b)(4)(A)

of the MSFMCA dated 4 April 2017. Applicable project design criteria identified in the 2017 Programmatic Consultation are intended to avoid, minimize, and/or offset potential adverse effects associated with "All Activities;" The activities that fall under the "All Activities" Programmatic Consultation project design criteria are incorporated here as Best Management Practices:

All Activities (relevant to this action)

1. All vessels associated with the construction Project shall operate at "no wake/idle" speeds at all times while in the construction area and while in-water depths where the draft of the vessel provides less than a 1.2-meter (4-foot) clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
2. Prior to any bottom disturbing activities, a pre-construction survey of the Project area for *Caulerpa* should be conducted in accordance with the CCP not earlier than 90 days, and not later than 30 days, prior to planned construction unless exempted by the CCP. The results of that survey should be furnished to NMFS and the CDFW within 15 days of completion of each survey per the CCP. In the event that *Caulerpa* is detected within the project area, the Navy shall not commence work until such time as the infestation has been isolated, treated, and the risk of spread eliminated.
3. Spill kits and cleanup materials will be present during construction should there be a leak into the surrounding water.
4. The discharge of oil, fuel, or chemicals to waters of the state is prohibited; therefore, less hazardous materials (e.g., vegetable oil) will be used when practicable.
5. All debris will be transported to, and disposed of at, an appropriate upland disposal site, or recycled, if appropriate. The release of debris into the water will be controlled by use of surface booms and other methods, as appropriate.

6.0 ASSESSMENT SUMMARY

Of the approximately 109 fish species that are federally managed under these plans (i.e., Pacific Coast Groundfish and Coastal Pelagic Species FMPs), 11 have potential to occur near the Project site; However, these managed groundfish species are not common and are not expected in the vicinity of the dredge footprint. Potential impacts on EFH would differ from species to species, depending on life history, habitat use (by demersal or pelagic species), and abundance in the Project area. The temporary effects of the proposed Project would include localized increases in noise levels and turbidity. Juvenile and adult pelagic fish of species that might visit the area are mobile and would be able to avoid any activities that may occur at the Project site. Most species may already avoid this area because of the large amount of vessel traffic through the area. No permanent effects of the proposed Project are expected.

Beyond immediate impacts to fish species, sediment sampling within the Project area (NAVFAC SW 2021) has also shown the dredged materials are suitable for placement at the LA-5 ODMDS based on meeting limiting permissible factors as defined in the Evaluation of Dredged Material Proposed for Ocean Disposal (USACE and USEPA 1991).

Overall, the Navy has determined that the Project may have minor but adverse temporary on EFH for federally managed fish species with the Coastal Pelagic Species and Pacific Groundfish Species FMPs.

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Endangered Species Act Assessment for the Pier 5000 South Side Inner Berth Expansion Dredging Project at Naval Base Point Loma

The purpose of the Proposed Action is to conduct deepening dredging activities at the Pier 5000 South Side Inner (SSI) Berth Expansion project (Project) at Naval Base Point Loma (NBPL) within San Diego Bay in late 2021 through early 2022. The proposed dredging is necessary to accommodate future ship berthing and create more berthing flexibility at Pier 5000. The Project footprint was previously occupied by a floating dock. After review by Navy facility planners, it was determined the floating dock would be removed and disposed of offsite. Based on the proposed dredge depth (-11.2 meters [-36.6 feet] MLLW) and continuity with the Pier 5000/5002 Inner Berths footprint, the Project footprint is proposed to be included with the United States Army Corps of Engineers and Untied States Environmental Protection Agency approved unconfined aquatic disposal option for Pier 5000/5002 Inner Berths if the physical and chemical characteristics are similar. Project actions would consist of dredging and deepening the 0.17 hectares (0.44 acre) footprint to a depth of -11.2 meters (-36.6 feet) mean lower low water (MLLW), with an estimated 0.6 meters (2 feet) of overdredge, for an estimated dredge volume of 6,365 cubic yards. Additional details of the proposed in-water activities are provided in the accompanying EFH Assessment. This assessment addresses the effects of implementing the Project at a single location at NBPL.

The Navy is requesting Section 7 consultation regarding the Project's potential to affect the green sea turtle (GST; *Chelonia mydas*), the blue whale (*Balaenoptera musculus*), the fin whale (*B. physalus*), the western northern Pacific gray whale (*Eschrichtius robustus*), the sperm whale (*Physeter macrocephalus*), humpback whale (*Megaptera novaeanglae*) and the Guadalupe fur seal (*Arctocephalus townsendi*). The proposed dredge footprint is located in north San Diego Bay and placement of sediment would occur at the LA-5 Ocean Dredged Material Disposal Site (ODMDS) or the Silver Strand Boat Lanes. The LA-5 ODMDS is the USEPA designated ocean disposal site located approximately 5.4 nautical miles (6.2 miles) offshore of Point Loma, and the Silver Stand Boat Lanes is a beneficial use receiver site located approximately 5.2 nautical miles (6 miles) southeast of the Project site. The Navy has been in informal consultation with NOAA for GST since initiating a study (NOAA, Scripps, Port of San Diego [POSD] and Navy Partners) in December of 2007. Although no GST have been observed, or are expected to be observed, within the dredge footprints, GST may seasonally move through the northern part of San Diego Bay. The dredge footprint is in a heavily used maritime industrial area and lacks eelgrass or other habitat features that might attract GST. The nearest known eelgrass patches are approximately 233 meters (765 feet) to the southeast and 293 meters (960 feet) to the north of the closest point of the Project area (Merkel & Associates, Inc. 2017; 2020a). A subaquatic vegetation survey of the Project area was completed in March 2020 and none was identified (Merkel & Associates, Inc. 2020a, 2020b). Although transient GST may occur in the vicinity of the proposed dredging footprint, it is highly unlikely for any of the ESA-listed marine mammals to be found at the dredging footprint. However all species listed above may potentially transit through the LA-5 ODMDS area or Silver Strand placement site.

Dredging activities associated with the Proposed Action have the potential to disturb marine species in the immediate vicinity because of vessel movement, as well as to change the underwater noise environment and water quality. Vessel movement is associated with the transportation of water-based construction equipment and removal of demolition debris from the site as needed. Collision with vessels is

a known cause of injury and mortality to sea turtles and marine mammals. However, given the slow speed of water-based construction equipment and transports, the potential for collision is unlikely. Further, other support vessels (such as barges) are limited in number, will be required to maintain established speeds, and are consistent with baseline conditions in San Diego Bay. The risk of injury by dredging equipment is considered negligible as GST are not likely to be present at those sites given that no eelgrass or other forage habitat is present in the Proposed Action Area. While eelgrass habitat is known to occur between 233 and 293 meters (765 and 960 feet) southeast and north, respectively, of the Project Area, the patches are relatively small, and GST would be anticipated to remain in deeper waters. Active monitoring for the GST will be implemented following the protocols outlined in the 2017 Navy / NMFS Programmatic Agreement (PA). The marine species monitoring will incorporate the specific requirements for both GST and marine mammals.

Dredging activities are estimated to occur for approximately 10 days. Jones et al. (2015) assessed noise in both coarse sand/gravel and unconsolidated sediment, with the noise associated with bucket/clamshell dredging operations ranging from 99 decibels (dB) at 150 m (492 ft) for the bucket closing to 124 dB at 150 m (492 ft) for the bucket contacting the bottom. Dickerson et al (2001) found similar results with the noise levels for the bucket making contact with the bottom measured at 124 dB at 158 m (518 ft). Ambient levels in north San Diego Bay were found to be 129.6 dB based on several years of noise monitoring (NAVFAC SW 2020b). Assuming a simplistic spreading loss model using practical spreading loss, dredging noise would reach ambient levels at between 63 and 74 meters (207 to 243 feet) from the dredging location. Because noise would reach ambient levels within the monitoring zones identified in the 2017 NAVY / NMFS PA (130 meters [427 feet]), it is anticipated that any GST in the Project vicinity would be observed prior to being exposed to any noise above ambient levels, and appropriate steps would be taken to address their presence in the Project area, consistent with the 2017 NAVY / NMFS PA.

Water quality will be temporarily degraded due to increased turbidity from dredging and disposal. Based on observations of turbidity caused by bottom disturbances in areas similar to the Project site, turbidity plumes are expected to be limited to the areas of bottom disturbance and would persist for less than one hour following disturbance (NAVFAC SW 2016; AMEC 2008). This analysis indicates minor, inconsequential effects, if any, on sea turtles that would not rise to a level of "take" under the ESA.

Dredged material disposal at LA-5 or Silver Strand has the potential to have impacts to GST and ESA-listed marine mammal species transiting in the vicinity of the sites. Potential effects are from temporary, localized turbidity during, and shortly after, active disposal as well as vessel strikes during dredge disposal. To avoid adverse effects to GST and marine mammals in the vicinity of the LA-5 ODMDS or the Silver Strand, the Navy will employ avoidance and minimization measures consistent with the 2017 Navy / NMFS PA. Specifically the Navy will implement the following avoidance and minimization measures:

- The Navy will provide pre-construction environmental education to contract personnel to instruct them on environmental resources within the Project footprint as well as avoidance and minimization measures and permit conditions to be implemented to protect resources during relevant Project-related activities.
- All personnel associated with the Project shall be instructed of the potential presence of protected species and the need to maintain a 20 meter (66 foot) buffer and avoid collisions with sea turtles

and marine mammals. All construction personnel are responsible for observing water-related activities for the presence of these species.

- All vessels associated with the construction Project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a 1.2 meter (4 foot) clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- All in-water Project-related activities will be monitored out to a distance of 130 m (427 feet). If a sea turtle or marine mammal is seen within the vicinity of active Project activities, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 20 meters (66 feet) from a sea turtle or marine mammal. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or marine mammal is seen within a 20 meters (66 feet) radius of the equipment. No discharge of dredge material at the disposal site will occur if a sea turtle or marine mammal is within 100 meters (328 feet) of the dump scow. Activities may not resume until the protected species has departed the Project/disposal area of its own volition, or has not been sighted for 15 minutes.
- During Project implementation the Navy will regularly monitor activities to ensure that no deviation from the proposed action is occurring.

As a result, the Navy believes the proposed action may affect but is not likely to adversely affect GST or ESA-listed marine mammals. Accordingly, the Navy requests written concurrence from NOAA on the finding of "may affect, not likely to adversely affect" for GST, blue whale, fin whale, western northern Pacific gray whale, sperm whale, humpback whale and Guadalupe fur seal for the proposed Project at NBPL.

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Appendix D
Supplemental Analysis for Affected Environment and Environmental Consequences

Other Considerations Required by NEPA – Section 3 Supplemental Materials

Appendix D1
Affected Environment and Environmental Consequences Considered but Dismissed for Focused EA

Geological Resources: No changes to terrain within the terrestrial environment would occur as a result of the Proposed Action (e.g., no construction is proposed). Dredging would not result in impacts to geology. San Diego is a seismically active region, as is most of Southern California. Seismic hazards can include landslides, ground shaking, surface displacement, and rupture, liquefaction, and tsunamis. The Proposed Action would incorporate best management practices (BMPs) specifically addressing susceptibility to geological/seismic hazards (e.g., overdredge limit); therefore, with these design considerations incorporated, implementation of the Proposed Action would result in negligible impacts to geological resources.

Cultural Resources: Implementation of the Proposed Action would not affect any archaeological sites or other cultural resources, as defined under the Commanding Officer Naval Base Point Loma (CONBPL) Programmatic Agreement (PA) (CONBPL 2014). Consistent with Stipulation 6.A. of the CONBPL PA, the Area of Potential Effect (APE) is defined as the discrete site of the undertaking and any associated staging or laydown areas. The Proposed Action consists of in-water dredging activities and would not require any associated staging or laydown areas. Therefore, the APE for the Proposed Action consists of the submerged 0.44-acre (19,050-square feet [sq ft]) dredge area. The project area is located on bay bottom that was created in 1942 by backfilling tidelands with excavated material; given that development history, there is no potential for buried archaeological resources (including shipwrecks) to occur or to be adversely affected by the Proposed Action.

The Proposed Action would not affect listed, contributing, or eligible properties on the National Register of Historic Places. Consistent with Stipulation 8.A. of the CONBPL PA, the Proposed Action qualifies for a determination of "No Historic Properties Affected," in accordance with 36 Code of Federal Regulations (CFR) §800.4 (d)(1). Therefore, implementation of the Proposed Action would not have a significant impact to cultural resources.

Land Use: The Coastal Zone Management Act of 1972 (CZMA) (16 U.S.C. Section 1451) encourages coastal states to be proactive in managing coastal zone uses and resources. The CZMA established a voluntary coastal planning program and required participating states to submit a Coastal Management Plan to the National Oceanic and Atmospheric Administration (NOAA) for approval. Under the CZMA, federal agency actions within or outside the coastal zone that affect any land or water use or natural resource of the coastal zone shall be carried out in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved state management programs. Each state defines its coastal zone in accordance with the CZMA. Excluded from any coastal zone are lands the use of which by law is subject solely to the discretion of the federal government or which is held in trust by the federal government (16 U.S.C. 1453).

Accordingly, although Naval Base Point Loma (NBPL) land is federal government property and therefore excluded from the coastal zone, the Navy conducted an effects analysis of the Proposed Action's reasonably foreseeable future direct and indirect effects on coastal uses and resources. The Proposed

Action area is currently used for the transit, berthing, and repair of submarines among other general marine, industrial, and military uses characteristic of NBPL. Public access, including coastal recreation, is restricted at the site because it is a federal defense installation. Additionally, this project is located in a designated United States (U.S.) Coast Guard (USCG) Security Zone, which, under the exclusive jurisdiction of the Navy, requires vessels desiring entry into, remaining in, or transiting the Security Zone to receive authorization from the Captain of the Port of San Diego or CONBPL. Recreation in the surrounding Bay is similarly restricted in the project area for safety and anti-terrorism/force protection concerns. The Proposed Action is consistent with existing and ongoing use and would neither directly affect nor further restrict access to, or use of, the area to the public at large. Other effects to coastal resources are minimal and have been analyzed in previous dredging projects conducted at military installations in San Diego. Therefore, the Proposed Action would have no adverse effect on coastal zone uses or resources and would be consistent with the California Coastal Management Plan. The Navy has prepared a coastal consistency negative determination and seek concurrence from the California Coastal Commission in compliance with the CZMA. No changes to shoreside land use would occur as a result of the Proposed Action. The existing military land use at the Pier 5000 South Side Inner (SSI) berth expansion area would continue to support naval operations and no land use compatibility issues or conflicts would occur. Each of the proposed disposal placement options – the beneficial reuse location, LA-5 Ocean Dredged Material Disposal Site (ODMDS), and Otay or Sycamore Landfills – are permitted to operate as receiving sites for dredged material. As such, potential use of any of these locations is consistent with current land use designations and is compatible with ongoing activities. Therefore, no land use impacts would occur.

Visual Resources: There would be no changes to the existing views at NBPL under the Proposed Action. Views within the San Diego Bay (Bay) would remain consistent with the military and industrial nature of the project site surrounding area. Dredging operations would occur over a 10-day period; such activities are common and consistent with both existing military and civilian waterfront and in-water activities, which include frequent and ongoing dredging operations. Upon completion of the proposed dredging project, temporarily placed dredging equipment would be removed; development of permanent structures is not proposed. Each of the proposed disposal placement options – the beneficial reuse location, LA-5 ODMDS, and Otay or Sycamore Landfills – are permitted to operate as receiving sites for dredged material. As such, potential use of any of these locations is consistent with existing visual resources. Therefore, aesthetic or visual quality impacts would not occur as a result of the Proposed Action.

Airspace: There would be no changes to local air traffic in the vicinity of NBPL, including at Naval Air Station North Island or San Diego International Airport, under the Proposed Action. The Proposed Action would neither create any obstructions to the safe operation of aircraft in the project vicinity nor necessitate any substantial increases in military or civilian air traffic in the project vicinity during dredging activities. Therefore, no impacts to airspace would occur.

Infrastructure: No new public services or utility connections would be needed or constructed under the Proposed Action. There would be no changes to the existing public services and utility connections to the existing Pier 5000. Otay and Sycamore Landfills, permitted as existing dredged sediment disposal locations under the upland disposal option for the Proposed Action and Reduced Dredging Footprint Alternative, have permitted disposal rates of 6,700 tons per day total with a daily dredged sediment capacity of 1,000 tons per day for Otay Landfill and 2,689 tons per day with a totally daily dredged sediment capacity of 700 tons per day for Sycamore Landfill. Under the upland disposal option, transport of suitably dried sediment

from the CDF at NBSD would be metered to ensure that it would not exceed the daily dredged material limits for the landfill. Therefore, no impacts to public services or utilities would occur.

Public Health and Safety: Executive Order (EO) 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* states that each federal agency must, to the extent permitted by law and appropriate and consistent with the agency's mission: (a) make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) ensure that policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks (62 Federal Register 19885). The Proposed Action would neither require the use of any hazardous materials nor produce any hazardous wastes, and it would not introduce a new hazardous use at NBPL. No hazardous sediments are present in the proposed dredged materials, as discussed in Section 3.2, *Water Resources*. The area to be dredged is located offshore of NBPL and is not occupied by any residents, including children. Therefore, the Proposed Action would not substantially affect human health or the environment and thus would not create disproportionate risks for children. Additionally, contractors would be required to comply with safety requirements of Occupational Safety and Health Administration (OSHA), the most recent versions of U.S. Army Corps of Engineers (USACE) EM 385-1-1 Safety and Health Requirements (USACE 2014), and multiple other Naval Facilities Command Southwest (NAVFAC SW) and Navy health and safety instructions. Further, dredging would be completed to a depth and will be sloped such that the structural integrity of the pier and quay walls will be maintained and therefore would not affect the stability of Pier 5000. All of these requirements and regulations address the potential risks to health and safety and would be followed; therefore, impacts to public health and safety would not be significant.

Socioeconomics and Environmental Justice: The Proposed Action would be temporary in nature and would generate short-term employment opportunities, a beneficial impact, but negligible at a local or regional scale. There would be minor materials spending, which would be negligible in the context of the regional San Diego Economy. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that "each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health effects in its programs, policies, and activities on minority populations and low-income populations" (59 Federal Register 7629). The Proposed Action would not substantively affect human health or the environment. Proposed dredging would occur within NBPL property boundaries; dredge transport would be within San Diego Bay and potentially the Pacific Ocean; and nearshore placement would occur at one controlled location. For all three project elements, implementation of the Proposed Action would occur on submerged federal lands, over open water, or at a restricted beneficial reuse location. No permanent populations – minority, low-income, or otherwise – would be directly affected. Therefore, there would be no disproportionate environmental or health impacts to low-income populations or minority populations as a result of the implementation of the Proposed Action.

Appendix D-2. Water Resources – Definitions

Surface water resources generally consist of marine waters, wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. A total maximum daily load (TMDL) is the maximum amount of a substance that can be assimilated by a water body without causing impairment. A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards occur.

Marine waters typically include estuaries, waters seaward of the historic height of tidal influence, and offshore high salinity waters. Marine water quality is described as the chemical and physical composition of the water as affected by natural conditions and human activities. Additionally, marine waters may include an area within a National Marine Sanctuary requiring an action proponent to avoid adverse water quality impacts in order to prevent damage to resources within the sanctuary.

Wetlands are jointly defined by USEPA and USACE as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamps, marshes, bogs, and similar areas."

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100-year and 500-year flood. Floodplain delineation maps are produced by the Federal Emergency Management Agency and provide a basis for comparing the locale of the Proposed Action to the floodplains.

Shorelines can be located along marine (oceans), brackish (estuaries), or fresh (lakes) bodies of water. Physical dynamics of shorelines include tidal influences, channel movement and hydrological systems, flooding or storm surge areas, erosion and sedimentation, water quality and temperature, presence of nutrients and pathogens, and sites with potential for protection or restoration. Shoreline ecosystems are vital habitat for multiple life states of many fish, birds, reptiles, amphibians, and invertebrates. Different shore zones provide different kinds and levels of habitat, and when aggregated, can significantly influence life. Organic matter that is washed onto the shore, or "wrack," is an important component of shoreline ecosystems, providing habitat for invertebrates, soil and organic matter, and nutrients to both the upland terrestrial communities and aquatic ecosystems.

Appendix D-3. Additional Special Status Species Observed or with Potential to Occur at NBPL on the Peninsula (from Section 3.2.2)

This section describes the existing conditions for each of the categories under biological resources at NBPL. Threatened and endangered species are discussed in each respective section below, with a composite list applicable to the Proposed Action provided in Table 3-5.

D.1 Special Status Species Observed or with the Potential to Occur at NBPL on the Peninsula (Supplement to Table 3-5)

Common Name	***Scientific Name***	***Federal Status***	***State Status***	***NBPL Presence***	***Presence Within or Adjacent to the Project Footprint[1]***
			Plants		
Orcutt's Spineflower	*Chorizanthe orcuttiana*	FE	SE	Documented occurrences	Not expected to occur
Shaw's Agave	*Agave shawii*		CNPS 3-3-1	Documented occurrence	Not expected to occur
Cooper's Rein Orchid	*Piperia cooperi*		CNPS 1-2-2	Documented occurrences	No expected to occur
			Invertebrates		
Black Abalone	*Haliotis cracherodii*	FE		Low potential to occur	Not expected to occur
White Abalone	*Haliotis sorenseni*	FE		Documented occurrences	Not expected to occur
Pinto Abalone	*Haliotis kamtschatkana*	SC		Documented occurrences	Not expected to occur
Pink Abalone	*Haliotis corrugate*	SC		Documented occurrences	Not expected to occur
Green Abalone	*Haliotis fulgens*	SC		Documented occurrences	Not expected to occur
			Birds		
Western Snowy Plover	*Charadrius alexandrinus nivosus*	FT	SSC	Occasional (non-breeder)	Not expected to occur
Coastal California Gnatcatcher	*Polioptila californica*	FT	SSC	Breeding	Not expected to occur
California Least Tern	*Sterna antillarum browni*	FE	SE	Forages in Bay	Expected occur within the project area
Least Bell's Vireo	*Vireo bellii pusillus*	FE	SE	Occasional migrant	Not expected to occur
Swainson's Hawk	*Buteo swainsonii*	BCC	ST	Migrant	Not expected to occur
California Black Rail	*Laterallus jamaicensis coturniculus*	BCC	ST	Occasional migrant	Not expected to occur
Bank Swallow	*Riparia*		ST	Rare migrant	Not expected to occur

D.1 Special Status Species Observed or with the Potential to Occur at NBPL on the Peninsula (Continued)

Common Name	*Scientific Name*	*Federal Status*	*State Status*	*NBPL Presence*	*Presence Within or Adjacent to the Project Footprint*[1]
Bald Eagle	*Haliaeetus leucocephalus*		SE	Low potential to occur	Not expected to occur
Great Egret*	*Ardea alba*			Breeding	Not expected to occur
American Peregrine Falcon	*Falco peregrinus anatum*	BCC		Breeding	Not expected to occur
Osprey*	*Pandion haliaetus*			Breeding	Expected to occur within the project area
California Brown Pelican*	*Pelicanus occidentalis californicus*			Year-round foraging	Expected to occur within the project area
Amphibians and Reptiles					
Orange-Throated Whiptail	*Aspidoscelis hyperythra*		SSC	Stable population	Not expected to occur
Green Sea Turtle	*Chelonia mydas*	FT		Forages in bay	May occur in project area
Mammals					
Pacific pocket mouse	*Perognathus longimembris pacificus*	FE	SSC	Low potential to occur	Not expected to occur
Wester Mastiff Bat	*Eumops perotis californicus*		SSC	Documented Occurrences	Not expected to occur
Western Red Bat	*Lasiurus blossevillii*		SSC	Documented Occurrences	Not expected to occur
Pocket Free-Tailed Bat	*Nyctinomops femorosaccus*		SSC	Documented Occurrences	Not expected to occur
Big Free-Tailed Bat	*Nyctinomops macrotis*		SSC	Documented Occurrences	Not expected to occur

Notes: * Species actively managed for compliance with requirements such as MBTA
Selections for Listing Status Column include: CNPS = California Native Plant Society; FE = Federal Endangered, FT = Federal Threatened, SE = State Endangered, SSC = Species of Special Concern (state designation), ST = State Threatened, BCC = Birds of Conservation Concern Status.
Source: NAVFAC SW 2012; California Native Plant Society 2001

The MBTA (16 U.S. Code (U.S.C.) 703 *et seq.*) and the Migratory Bird Conservation Act (16 U.S.C. 715 *et seq.*) of 1929 (45 Stat. 1222) are the primary legislation in the U.S. established to conserve migratory birds. These statutes implement the U.S. commitment to four bilateral treaties, or conventions, with Canada, Mexico, Russia, and Japan for protection of shared migratory bird resources. The MBTA prohibits the taking, killing, or possessing of migratory birds, or the parts, nests, or eggs of such birds, unless permitted by regulation. The species of birds protected by the MBTA are listed in 50 CFR §10.13 and represent almost all avian species found in North America (NAVFAC SW 2014a).

Migratory bird conservation relative to non-military readiness is addressed separately in a Memorandum of Understanding (MOU) developed in accordance with EO 13186. The MOU between the DoD and the USFWS was signed on July 31, 2006. DoD responsibilities discussed in the MOU include, but are not limited to (NAVFAC SW 2014a):

1. Obtaining permits for import and export, banding, scientific collection, taxidermy, special purposes, falconry, raptor propagation, and depredation activities;
2. Encouraging incorporation of comprehensive migratory bird management objectives in the preparation of DoD planning documents;
3. Incorporating conservation measures addressed in Regional or State Bird Conservation Plans in Integrated Natural Resource Management Plans;
4. Managing military lands and activities other than military readiness in a manner that supports migratory bird conservation;
5. Avoiding or minimizing impacts to migratory birds, including incidental take and the pollution or detrimental alteration of the environments used by migratory birds; and/or
6. Developing, striving to implement, and periodically evaluating conservation measures for management actions to avoid or minimize incidental take of migratory birds, and if necessary, conferring with the service on revisions to these conservation measures.

The most common bird species in the Bay include surf scoter, eared grebe (*Podiceps nigricollis*), scaup (lesser [*Aythya affinis*] and greater [*Aythya marila*]), bufflehead (*Bucephala albeola*), black brant (*Branta bernicla nigricans*), Western grebe (*Aechmophorus occidentalis*), American wigeon (*Anas americana*), ruddy duck (*Oxyura jamaicensis*), mallard (*Anas platyrhynchos*), red-breasted merganser (*Mergus serrator*), Northern pintail (*Anas acuta*), Northern shoveler (*Spatula clypeata*), and American coot (*Fulica americana*).

Western snowy plover (*Charadrius alexandrinus nivosus*)

The western snowy plover is a federally threatened bird species that nests in colonies on sandy beaches along the west coast of the U.S. and into southern Baja California (USFWS 2007). The western snowy plover is also a California Species of Special Concern (SSC) and it is on the U.S. Bird Conservation and Audubon Watch List. It inhabits sandy ocean beaches and the drying margins of lagoons. It also inhabits tidal mud flats during migration and in winter (U.S. Department of the Navy [DON] 2011a).

Adults and chicks feed on terrestrial and aquatic invertebrates such as amphipods, sand hoppers, and flies (NAVFAC SW 2013). Kelp wrack provides an abundant food source of the invertebrates that frequent these kelp piles. Critical habitat was designated for this species in December 1999. The decline in populations of the western snowy plover has been attributed to lower reproduction caused by human disturbance, predation, and loss of habitat through invasion by nonnative plants.

No breeding western snowy plovers have been reported on Point Loma, although breeding colonies have been reported from Naval Air Station North Island, Lindbergh Field, and the Coronado Cays. The western snowy plover is not expected to occur within the area to be dredged or in the offshore dredging and sediment disposal sites.

Coastal California gnatcatcher *(Polioptila californica californica*)

The coastal California gnatcatcher is a federally threatened species and a California Species of Special Concern. The coastal California gnatcatcher is a small, slate-colored bird with a long, black tail that is edged and tipped with white, which it flicks erratically as it perches. The coastal California gnatcatcher is a non-migratory songbird found on the coastal slopes of Southern California.

The coastal California gnatcatcher is strongly associated with coastal sage scrub habitats below 820 feet (250 meters) in coastal areas and between 820 and 1,640 feet (250 and 500 meters) in inland areas and

is not expected to be present within the dredge project area. A pair of coastal California gnatcatchers was observed in September 1995 in a large patch of coastal sage scrub on the southern end of Point Loma at CNM. In September 1998, a pair was also observed adjacent to Battery Humphrey. Since that time, at least one breeding pair has been observed annually at NBPL since 2015.

Least Bell's vireo (*Vireo bellii pusillus*)

Listed as federally endangered, the least Bell's vireo is a small gray migratory songbird with generally gray plumage, rounded wings with pale white wing bars, and narrow white eye rings. It is a resident to California during the spring and summer, migrating south to Baja California, Mexico, for the fall and winter. Its preferred habitat is dense riparian vegetation dominated by willows (*Salix* spp.), with a lush understory (NAVFAC SW 2013) that is in the high-quality 5- to 10-year-old, early succession stage (Franzreb 1989). The least Bell's vireo is sensitive to changes in riparian vegetation. Populations are declining as a result of urban and agricultural development, alteration of the habitat, and parasitism of the brood by the brown-headed cowbird. Range-wide control of the brown-headed cowbird (trapping and nest monitoring) has resulted in a nearly 10-fold expansion in the population of the vireo over the last decade. Since its listing, habitat restoration and cowbird trapping programs have helped the vireo recover from near extinction. Nesting for the least Bell's vireo occurs from March 15 to September 30. These birds use non-riparian habitats occasionally and will travel an average of 50 feet (15 meters) to forage.

A low, dense shrub layer is considered essential for nesting (Franzreb 1989), and a large degree of vertical stratification is preferred. Willow is most commonly used. Most nest sites are located near the edges of thickets. Nest height on average is 3 feet (approximately 1 meter) above the ground (Regional Environmental Consultants 1988). Males are tenacious about nesting sites and return to the same site in succeeding years. Regional Environmental Consultants (1988) reported an average territory of about 0.8 hectare (2 acres).

The least Bell's vireo has been reported as a summer migrant in several vegetation communities on Point Loma. Because appropriate riparian vegetation for breeding is absent on Point Loma, least Bell's vireo is unlikely to nest there. It is unlikely that the least Bell's vireo would rest at the project area.

Swainson's hawk (*Buteo swainsoni*)

Swainson's hawks and their nests are considered threatened by the State of California as well as being designated a federal Bird of Conservation Concern (BCC). Swainson's hawks are a medium-sized, transient hawk. Those birds occurring in California spend the winter in Mexico and South America. Swainson's hawks often nest peripherally to riparian systems of the valley as well as utilizing lone trees or groves of trees in agricultural fields. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. The diet of the Swainson's hawk is varied with the California vole (*Microtus californicus*) being the staple in the Central Valley. A variety of bird and insect species are also taken.

Swainson's hawks were once found throughout lowland California and were absent only from the Sierra Nevada, north Coast Ranges and Klamath Mountains, and portions of the desert regions of the state. This species breeds throughout most of western North America. Swainson's hawks are highly migratory, breeding in North America and wintering in southern South America (Woodbridge 1998). In California, breeding populations of Swainson's hawks occur in grassland, desert, shrub steppe, and agricultural habitats. The majority of today's breeding Swainson's hawks are found in the Great Basin and California's Central Valley (Woodbridge 1998). Although this raptor was a fairly common breeder in San Diego County in the early 1900s, Swainson's hawks in Southern California are now rarely seen during spring and fall

migration (Unitt 2004). Historically, Swainson's hawks may have maintained a population in excess of 17,000 pairs. Based on a study conducted in 1994, the statewide population is now estimated to be approximately 800 pairs (CDFW 2006).

Threats to the Swainson's hawk include the loss of suitable agricultural habitat, riverbank protection projects, illegal hunting, pesticide poisoning of prey animals within wintering grounds, competition from other raptors, and human disturbance at nest sites.

Swainson's hawks have been observed during migration on Point Loma. There are no reports of Swainson's hawks breeding in the vicinity. Swainson's hawks are unlikely to forage at or near Pier 5000 and are therefore unlikely to occur within the project area.

California black rail (*Laterallus jamaicensis coturniculus*)

The California black rail is a federal BCC as well as a state-threatened species. This bird gleans isopods, insects, and other arthropods from the surface of mud and vegetation in saltwater, brackish, and freshwater marshes. Freshwater marsh vegetation used by this species includes pickleweed (*Salicornia* spp.), sedges (*Carex* spp.), saltgrass (*Distichlis* spp.) in brackish marshes, bulrushes (*Scirpus* spp.) and cattails (*Typha* spp.) (Navy 2011).

California black rails occur year-round in San Francisco Bay and the Sacramento–San Joaquin delta in northern California, along the Colorado River, near the Salton Sea, and in other desert locales in Southern California. The species has declined due to loss of coastal and inland marsh habitats, and marsh habitats along the Colorado River (Navy 2011).

Recent sightings of the California black rail have not been documented on Point Loma. They are considered a rare transient and migrant to San Diego County. Pacific Southwest Biological Services, Inc. reported California black rail as a year-round resident of intertidal flats on Point Loma and as a possible breeding population (NAVFAC SW 2012). This species was a former local resident in coastal wetlands from Santa Barbara to San Diego and still rarely winters in this range. A comprehensive record search of this species' presence in San Diego County indicates that the likelihood of this species establishing itself on Point Loma is very low; however, it may occasionally migrate through the area (NAVFAC SW 2012).

Bank swallow (*Riparia riparia*)

Nesting colonies of bank swallows are considered threatened by the State of California. Most breeding colonies are found along the banks of Central Valley streams, particularly along the Sacramento River. As a migratory bird, it is most commonly seen in the interior of California west of the deserts. Bank swallows are casual migrants to coastal Southern California in winter, arriving from South America in early April, with numbers peaking in early May. By mid-September most bank swallows have left the state. Bank swallows nest colonially in vertical sandy banks or cliffs near streams, rivers, ponds, lakes, or the ocean. During nesting season, bank swallows prey upon insects over riparian areas; during migration they feed upon insects over brushland, grassland, and agricultural fields (Navy 2011). The bank swallow's range is estimated to have been reduced by half since 1900. Loss of nesting habitat from channelization and stabilization of banks along rivers used for nesting is the primary reason for the decline of the species in California. Bank swallows are a rare migrant to San Diego County and are not expected to nest on Point Loma.

Noise Metrics Considered

Table D.2. Total abundance of fishes collected in San Diego Bay during 2019 by ecoregion (Williams et al. 2019)

		Ecoregions					
Scientific Name	**Common Name**	**North**	**North-Central**	**South-Central**	**South**	**Total**	**%**
Atherinops affinis	Topsmelt	4867	2892	166	119	8044	57.36
Anchoa delicatissima	Slough Anchovy		110	475	681	1266	9.03
Anchoa compressa	Deepbody Anchovy		1	1019	13	1033	7.37
Micrometrus minimus	Dwarf Perch	691				691	4.93
Heterostichus rostratus	Giant Kelpfish	133	371	83	18	605	4.31
Cymatogaster aggregata	Shiner Perch	143	139	117	137	536	3.82
Urobatis halleri	Round Stingray	117	91	82	206	496	3.54
Syngnathus californiensis	Kelp Pipefish	82	65	121	163	431	3.07
Paralabrax maculatofasciatus	Spotted Sand Bass	37	155	81	147	420	2.99
Sardinops sagax	Pacific Sardine		77	1		78	0.56
Paralichthys californicus	California Halibut	33	12	14	5	64	0.46
Clevelandia ios	Arrow Goby	8	5	18	21	52	0.37
Hypsoblennius gentilis	Bay Blenny	20	17			37	0.26
Paralabrax nebulifer	Barred Sand Bass	1	27	6	1	35	0.25
Leuresthes tenuis	California Grunion	11	21			32	0.23
Pleuronichthys guttulatus	Diamond Turbot	6	4	14	5	29	0.21
Cynoscion parvipinnis	Shortfin Corvina		1	18	1	20	0.14
Halichoeres semicinctus	Rock Wrasse	19				19	0.14
Scomber japonicus	Pacific Chub Mackerel	14	1			15	0.11
Haemulon californiensis	Salema	1	10	1	2	14	0.1
Porichthys myriaster	Specklefin Midshipman	11		2		13	0.09
Symphurus atricaudus	California Tonguefish	10	1	1		12	0.09
Paralabrax clathratus	Kelp Bass	9	1			10	0.07
Albula gilberti	Cortez Bonefish			8	1	9	0.06
Leptocottus armatus	Pacific Staghorn Sculpin		1	2	6	9	0.06
Embiotoca jacksoni	Black Perch	8				8	0.06
Myliobatis californica	Bat Ray			2	6	8	0.06
Pleuronichthys ritteri	Spotted Turbot	8				8	0.06
Hippocampus ingens	Pacific Seahorse				4	4	0.03
Hyporhamphus rosae	California Halfbeak				4	4	0.03
Cheilotrema saturnum	Black Croaker		2	1		3	0.02
Gymnura marmorata	California Butterfly Ray				3	3	0.02
Fundulus parvipinnis	California Killifish				2	2	0.01
Scorpaena guttata	California Scorpionfish	2				2	0.01
Synodus lucioceps	California Lizardfish	2				2	0.01
Acanthogobius flavimanus	Yellowfin Goby	1				1	0.01
Atherinopsis californiensis	Jacksmelt			1		1	0.01
Dasyatis dipterura	Diamond Stingray				1	1	0.01
Gibbonsia elegans	Spotted Kelpfish	1				1	0.01
Ilypnus gilberti	Cheekspot Goby				1	1	0.01
Phanerodon furcatus	White Seaperch	1				1	0.01
Pleuronichthys decurrens	Curlfin Sole	1				1	0.01
Seriphus politus	Queenfish				1	1	0.01
Umbrina roncador	Yellowfin Croaker		1			1	0.01
Xystreurys liolepis	Fantail Sole	1				1	0.01
# of Species:	45	6238	4005	2233	1548	14024	

Appendix E
Cumulative Impacts – Past, Present, and Reasonably Foreseeable Future Actions

Cumulative Impacts – Past, Present, and Reasonably Foreseeable Future Actions

E.1 Past Actions

NBSD Graving Dock Approach Maintenance Dredging - 2020

Maintenance dredging in the approach area of the NBSD Graving Dock would ensure appropriate design depths in the project vicinity. This would support the continued use of the site by ensuring appropriate depths for transit and maneuvering of NBSD vessels.

South San Diego Harbor Federal Channel Maintenance Dredging – 2020

The Los Angeles District of the U.S. Army Corps of Engineers (USACE), as part of its Operations and Maintenance Program, is proposing to perform maintenance dredging in South San Diego Harbor Federal Channel to re-establish authorized channel depths (-35 feet [-10.7 meters] MLLW, with a 2 foot (0.6 meters) allowable overdepth to -37 feet (-11 meters) MLLW (USACE 2019).

Ballast Point to Approach Federal Channel Maintenance Dredging - 2020

The USACE, as part of its Operations and Maintenance Program, will perform maintenance dredging from the federal navigation channel seaward of Ballast Point to the approach. The USACE dredges at Ballast Point approximately every seven years (USACE 2019) and the last dredging was in 2012.

Smuggler's Cove Fish, Eelgrass, Intertidal, Subtidal Habitat Reef and Enhancement – 2019 EA

The goal of this project was to restore intertidal and subtidal beach and habitat at Smugglers Cove at NBPL. An artificial reef was created using broken concrete and piles salvaged from the P-1306 Fuel Pier Replacement to create a berm to hold sand and create new shallow beach and eelgrass habitat.

NBPL Floating Dry Dock (ARCO) Dredging – 2019 CATEX

Dredging in the vicinity of the ARCO floating dry dock would ensure appropriate design depths for the dry dock and client vessels in the project vicinity. This would support the continued use of the site by ensuring appropriate depths for transit and maneuvering of NBPL vessels.

USCG Mooring Ballast Point Maintenance Dredging – 2019 EA

This project included scheduled maintenance dredging to meet existing, and future, navigational requirements at USCG Ballast Point including dredging of 28,000 cubic yards (cy) of clean sand. It was anticipated that dredged clean sand would be employed as beneficial reuse as part of the neighboring Smugglers Cove Fish, Eelgrass, Intertidal, Subtidal Habitat Reef and Enhancement.

Pier 5000 North Side Outer Berth Dredging at NBPL – 2019 EA

This project dredged approximately 6,000 cy of sediment from the NBPL Pier 5000 NSO Berth to maximize installation waterfront usability and allow for deeper dredge submarine berthing. The dredged sediment was beneficially reused nearshore of Naval Air Station North Island. An EA was completed for the project in 2013, and dredging was completed the same year.

Table E-1. Cumulative Action Evaluation

Past Actions		
Action	**Level of NEPA Analysis Completed**	**Timing**
Naval Base Point Loma Fuel Pier Replacement and Dredging (P-151)	EA	2013
NBPL Piers 5000, 5002, and Pier 5002 Approach Channel Dredging	EA	2015
NBSD Pier 12 Replacement and Dredging (P-327)	EA	2016
NBSD Pier 8 Replacement and Dredging	EA	2016
NBSD Maintenance Dredging Various Piers (Piers 2, 6, 7, 13 and 14) and	CATEX	2017
NBPL Pier 5000 North Side Outer Berth Dredging	EA	2019
US Coast Guard (USCG) Mooring Ballast Point Maintenance Dredging	EA	2019
NBPL ARCO Dry Dock Dredging	CATEX	2019
NBPL Smuggler's Cove Fish - Eelgrass, Intertidal, Subtidal Habitat Reef	EA	2019
NBSD Graving Dock Approach Maintenance Dredge	CATEX	2020
South San Diego Harbor Maintenance Federal Channel Maintenance Dredging	EA	2020
Ballast Point to Approach Federal Channel Maintenance Dredging	CATEX	2020
Present and Reasonably Foreseeable Future Actions		
Action	**Project Start Date**	
NBPL Fuel Pier Inboard and Pier 5000/5002 Inner Berths Maintenance Dredging	2021/2022	
Fleet Logistics Fuel Pier Maintenance Dredging and Pile Removal Project	2021/2022	
Naval Amphibious Base (NAB) Coronado Pier 4 Floating Docks	2022*	
NAB Coronado Pier 6 Maintenance	2022*2019–2020	
NAB Coronado Pier 14 New Docks New Piles	2021	
NAB Pier 17 Minor Repairs	2020	
NAB Coronado Mammal Pier-Replacement in Kind	2021	
NBSD Approach Channel	2021*	
NBSD Pier 6 Dredging	2022*	
NBSD Pier 6 Replacement Project	2022-2033*	
Marine Group Boatworks Floating Dry Dock	2022-2023	
NBSD Mole Pier Floating Dry Dock	2023/2024*	
BAE Systems Waterfront Improvement Project	2020-2024*	

Abbreviations:
CATEX = Categorical Exclusion
EA = Environmental Assessment
NEPA = National Environmental Policy Act
* = estimated start date

Maintenance Dredging Various Piers (Piers 2, 6, 7, 13 and 14) and in Chollas Creek – 2017 CATEX

These maintenance dredging activities began at NBSD following the completion of the Pier 12 Replacement and Dredging and the Replacement and Maintenance Dredging at Pier 8 (NAVFAC SW 2016).

NBSD Pier 8 Replacement and Dredging – 2016 EA

The Navy prepared an EA for construction of a general-purpose berthing pier to replace existing Pier 8. Utilities include potable water, sanitary sewer, compressed air, steam, oily waste, and compensating water systems. Additional ship-to-shore utilities include electrical, telephone, cable television, fiber optic communications, a Supervisory Control and Data Acquisition system for energy monitoring and control, and a fire alarm. This project will support the upgrade of shore-to-ship power of 480 volts, 4,160 volts, and 13.8 kilovolts to meet power-intensive fleet requirements. Fender systems include concrete and plastic piles with foam-filled fenders at the berths and plastic log camels. The project also includes demolition of existing Pier 8 and Facility #358.

NBSD Pier 12 Replacement and Dredging – 2016 EA

This project included construction of a general-purpose berthing pier feet to include electrical, telephone, and cable television services, fiber optic communications, a Supervisory Control and Data Acquisition system for energy monitoring and control, and a fire alarm. The project supported the upgrade of shore-to-ship power of 480 volts, 4,160 volts, and 12 kilovolts to meet power-intensive fleet requirements. Fender systems included concrete and plastic piles with foam-filled fenders at the berths and plastic log camels. The project also included demolition of existing Pier 12. This project also included dredging to meet the -37-foot MLLW depth requirement for deep-draft vessels. The project was completed in July 2016.

Piers 5000 and 5002 and Pier 5002 Approach Channel Dredging at NBPL – 2015 EA

This project involved dredging of sediment at Pier 5000 and Pier 5002 sites and the approach area, off-site aquatic sediment disposal, and fender relocation to increase depth to accommodate Ohio- and Seawolf-class submarines. Total dredge volumes included approximately 61,433 cy of sediment (across a dredge footprint of approximately 438,805 sq feet), including 21,704 cy at Pier 5000, 8,078 cy at Pier 5002, and 32,281 cy at the Pier 5002 approach area. An EA was completed for this project in 2014.

Naval Base Point Loma Fuel Pier Replacement Project at NBPL – 2013 EA

This project involved dredging and replacement of the NBPL Fuel Pier to meet state of the art environmental and seismic requirements to support the homeporting of ships, submarines, and transient vessels at NBPL. The project included construction of a 1,100-foot pier with 17 fueling stations supported by 296 steel pipe piles, 106 concrete fender piles, 132 concrete fill polymeric piles, and 54 concrete guide dock piles. The new Fuel Pier also has a fuel transfer piping system with 16,000 linear feet of fuel piping, marine loading arms, and fuel risers to transfer fuel as well as a storm water collection system that includes transportation to an existing treatment facility, and upgraded electrical, lighting, and fire suppression systems.

E.2 Present and Reasonably Foreseeable Actions

A variety of in-water projects within the San Diego Bay (Bay) are anticipated to occur within the next two years and include maintenance dredging, pier repairs, construction of new static and floating docks, and habitat enhancement projects.

Fleet Logistics Center Fuel Pier Maintenance Dredging and Pile Removal Project - 2021-2022

The goal of this project is to maintain access to one of the Navy's busiest maritime fueling facilities in the Southwest region by dredging within the fuel pier vicinity. This project would support the continued use

of the site by ensuring appropriate depths for fueling operations and client vessels through dredging and removal of remnant piles causing shoaling within the maintenance dredging area.

NBPL Pier 5000 and 5002 South Side Inner (SSI) Berth Maintenance Dredging – 2021 - 2022

This proposed project would dredge material at NBPL to meet new submarine water depth requirements for the navigation and berthing of large submarines to support continued Navy submarine fleet operations.

NAB Coronado Upgrades, Maintenance, and Repair Projects – 2020 - 2022

A number of in-water projects at NAB Coronado are planned to occur including: installation of floating docks at Pier 4, maintenance activities at Pier 6, installation of new docks and piles at Pier 14, minor repairs to Pier 17, and replacement of the existing Mammal Pier with a similar structure.

NBSD Pier 6 Replacement Project and Dredging – 2022 - 2033

This Project would demolish the aging and inadequate Pier 6 at NBSD and replace it with a new general purpose pier having the infrastructure necessary to support modern Navy ships. Completed and ongoing military construction documentation for this project (P-443) informs the scope of actions analyzed in an EA. The Project FONSI and Final EA were published in March 2021.

BAE Systems Waterfront Improvement Project - 2020-2024

This proposed project would replace aging structures, improve existing infrastructure, increase space utilization, and increase efficiency of operations at the existing BAE Systems San Diego Ship Repair Yard, located adjacent to NBSD. The proposed project includes 15 distinct project elements designed to improve efficiency and functionality of the existing BAE Systems San Diego Ship Repair Yard. Construction of various project elements would last through 2024.

Marine Group Boat Works Dredging and Commercial Out-Lease Floating Dry Dock Installation – 2022-2023

This project would deepen existing berthing areas at the Marine Group Boat Works facility in south San Diego Bay to a depth of -39 feet MLLW plus a 2-foot overdredge allowance to accommodate installation of a floating dry dock to support anticipated Navy ship repairs on LCS-2, LSD-41, and LSD-49 class vessels. Dredging would include removal of up to 165,000 cy of sediment. Construction activities would include installation of: 1) new access structures for the proposed dry dock; 2) new mooring dolphins; 3) utilities and landside improvements; and 4) emplacement of a steel floating dry dock.

NBSD Mole Pier Floating Dry Dock – 2023 - 2024

This project includes the construction and installation of an all steel floating dry dock capable of lifting a 18,000 long ton vessel. In order to implement this project, partial demolition of the existing wharf to create space for mooring piles and a “gripper” system at each end of the berth. Project-related dredging is anticipated to include approximately 65,000 cy to create a turning basing and approach channel between -40 and -53 feet MLLW.

Appendix F
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Complete List of References

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