Draft FINDING OF NO SIGNIFICANT IMPACT
HUMBOLDT HARBOR AND BAY
MAINTENANCE DREDGING OF FEDERAL
NAVIGATION CHANNELS DREDGING YEARS
2026 - 2030, EUREKA, CALIFORNIA

The U.S. Army Corps of Engineers, San Francisco District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. This Finding of No Significant Impact (FONSI) accompanies the draft Environmental Assessment (EA) dated XX026, for the maintenance dredging of federal navigation channels in Humboldt Harbor and Bay and the disposal at Humboldt Open Ocean Disposal Site (HOODS) and/or placement at the Humboldt Nearshore Placement Study Area (HNSPA) to increase the beneficial use of dredged material.

The EA evaluated seven alternatives that would maintain navigational access and safety in the study area.

No Action Alternative
Alternative 1 – Maintenance Dredging, with Placement at HOODS and HNSPA
Alternative 2 – Maintenance Dredging with Placement at the Samoa Lagoon Dredge Material Dewatering Area Alternative 3 – Maintenance Dredging with Placement at Power Poles Beach
Alternative 4 - Maintenance Dredging with Placement at Samoa Beach
Alternative 5 - Maintenance Dredging with Placement at the Superbowl Site Maintenance Dredging, with Placement at an Upland Site
Alternative 6 - Maintenance Dredging with Placement at SF-3
Alternative 7 - Maintenance Dredging with Placement at the Nearshore Disposal Site

Only the No Action and Alternative 1 were carried forward for full consideration.

The Proposed Action is Alternative 1, annual maintenance dredging of the Bar and Entrance, North Bay, Eureka, Samoa, and Field's Landing Channels and associated turning basins located in Humboldt Harbor & Bay for the 2026-2030 timeframe. It is anticipated up to 1,500,000 cy of material would be dredged annually with disposal at HOODS or placing dredged material at the HNPSA for beneficial uses when feasible.

Under the No Action Alternative, the federal channels in Humboldt Habor and Bay would shoal in causing adverse effects to navigational safety, commerce, other maritime related activities and refuge for ships during storms. This would subsequently have a long-term adverse impact on the local economy of Humboldt County, compromise the use of the harbor for refuge during storms and the operation of U.S. Coast Guard ships based in the Bay, and impact National Economic Development. Therefore, the No Action Alternative is eliminated.

Table 1. Summary of the Potential Effects of the Proposed Action

Resource	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Erosion and Accretion Patterns	☒	☐	☐
Substrate	☒	☐	☐
Sediment Quality	☒	☐	☐
Turbidity	☒	☐	☐
Water Quality	☒	☐	☐
Special Aquatic Sites	☐	☐	☒
Planktonic Community	☒	☐	☐
Benthic Community	☒	☐	☐
Fish Communities	☒	☐	☐
Marine Mammals	☒	☐	☐
Special Status Species and Endangered Species Act Consultations, Including Essential Fish Habitat	☐	☒	☐
Air Quality	☒	☐	☐
Noise	☒	☐	☐
Cultural and Historic Resources	☐	☐	☒
Historic Monuments, Parks, Seashores, etc.	☐	☐	☒
Socioeconomics	☐	☐	☒
Navigation	☒	☐	☐
Public Health and Safety	☐	☐	☒
Hazardous and Toxic Materials	☐	☐	☒
Recreation	☒	☐	☐
Aesthetics and Visual Impact	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) and avoidance or minimization measures as detailed in the EA, will be implemented, as appropriate, to minimize these impacts. No compensatory mitigation is required as part of the recommended plan.

Environmental Compliance Requirements:

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the USACE, in informal consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine

Fisheries Service (NMFS), determined that the recommended plan may affect, but is not likely to adversely affect, the following federally listed species, or its designated critical habitat, within the project footprint:

- ✓ Marbled Murrelet *(Brachyramphus marmoratus)*
- ✓ Northern California (NC) Steelhead *(Oncorhynchus mykiss)* and Critical Habitat
- ✓ Southern Distinct Population Segment (DPS) of North American Green Sturgeon *(Acipenser medirostris)* and Critical Habitat

The USACE, in formal consultation with NMFS, determined that the recommended plan is likely to adversely affect, but is not likely to jeopardize the continued existence of or adversely modify the following federally listed species and critical habitats, respectively, within the project footprint:

- ✓ Southern Oregon/Northern California Coastal (SONCC) Coho Salmon *(O. kisutch)* and Critical Habitat
- ✓ California Coastal (CC) Chinook Salmon *(O. tshawytscha)* and Critical Habitat

Requests for consultation documenting these determinations were submitted to USFWS on December 12, 2025, and to NMFS on January 5, 2026. The USACE requested a 1-Year Biological Opinion extension from NMFS by March 1st, 2026 and requested concurrence from USFWS by March 1st, 2026.

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act - Fishery Conservation Amendments of 1996, (16 USC § 1801 et seq), USACE submitted an Essential Fish Habitat (EFH) Assessment to NMFS on December 12, 2025, and requested a response from NMFS by March 1st, 2026.

The HNPSA is located within state waters and is subject to Sections 401 and 404 of the CWA. For Section 401, the USACE received a Water Quality Certification in February 2025 and is pursuing an amendment for 2026-2030. For Section 404, the USACE, as the permitting authority, cannot issue a permit to itself. Therefore, the USACE is required to complete an effects analysis under the Section 404(b)(1) Guidelines and disclose these findings to the public. The USACE also prepared an Environmental Assessment (EA) that also incorporates and fulfills the requirements of that 404(b)(1) analysis.

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

The USACE has applied to the California Coastal Commission (CCC) for a Negative Determination (ND) under the Coastal Zone Management Act of 1972. An ND is given when consistency with the California Coastal Zone Management Program is demonstrated. Historically, the USACE has received consistency determinations from the CCC every year in the past for its annual maintenance dredging of Humboldt Harbor and Bay. The USACE has requested the CCC to concur with this ND submittal by March 1, 2026.

Public and Agency Review:

A 30-day public and agency review of the draft EA and draft FONSI will occur between January 21, 2026 and February 21, 2026.

FINDING

Technical, environmental, and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the initial and early review by other State agencies, technical experts, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____ _____

Date

Virginia R. Brickner
Lieutenant Colonel, U.S. Army Commanding

Humboldt Harbor & Bay Maintenance Dredging, Fiscal Year 2026-2030 Environmental Assessment

U.S. Army Corps of Engineers, San Francisco District

JANUARY 2026

U.S. ARMY

US Army Corps of Engineers

Contents

Appendices

List of Figures

List of Tables

Acronyms & Abbreviations

ADCP	acoustic doppler current profiler
B&E	Bar & Entrance Channel
BA	Biological Assessment
BO	Biological Opinion
BPMs	best management practices
CARB	California Air Resources Board

CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
City	City of Eureka
dB	decibel
dBA	A-weighted decibel
DO	dissolved oxygen
DPS	distinct population sediment
EA	Environmental Assessment
EFH	Essential Fish Habitat
ERDC	USACE Engineering Research and Design Center
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FMP	fishery management plan
FONSI	Finding of No Significant Impact
Harbor District	Humboldt Bay Harbor, Recreation and Conservation District
HNPPP	Humboldt Nearshore Placement Pilot Project
HNPSA	Humboldt Nearshore Placement Study Area
HOODS	Humboldt Open Ocean Disposal Site
HSMP	Humboldt Shoreline Monitoring Program
MLD	most likely descendant
MLLW	mean lower low water
MPRSA	Marine Protection Research and Sanctuaries Act
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NCRWQCB	North Coast Regional Water Quality Control Board
ND	Negative Determination
NDS	Nearshore Disposal Site
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOx	nitrous oxide
NTU	nephelometric turbidity units
O&M	operations & maintenance
ODA	Ocean Dumping Act
PAH	polycyclic aromatic hydrocarbon
PERP	Portable Equipment Registration Program
PM	particulate matter
Port	Port of Humboldt Bay
ppt	parts per thousand
Samoa SMCA	Samoa Offshore State Marine Conservation Area
SHPO	State Historic Preservation Officer
SOx	sulfur oxide

SUAD	suitable for unconfined aquatic disposal
THPO	Tribal Historical Preservation Officer
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WQO	water quality objective
WRDA	Water Resources Development Act

1 Introduction

1.1 Location

Humboldt Harbor & Bay is located in Humboldt County on the coast of Northern California (***Figure 1***), approximately 225 nautical miles north of San Francisco and approximately 156 nautical miles south of Coos Bay, Oregon. Humboldt Bay is the second largest coastal estuary in California. It is the only harbor between San Francisco and Coos Bay with channels large enough to permit the passage of large ocean-going vessels.

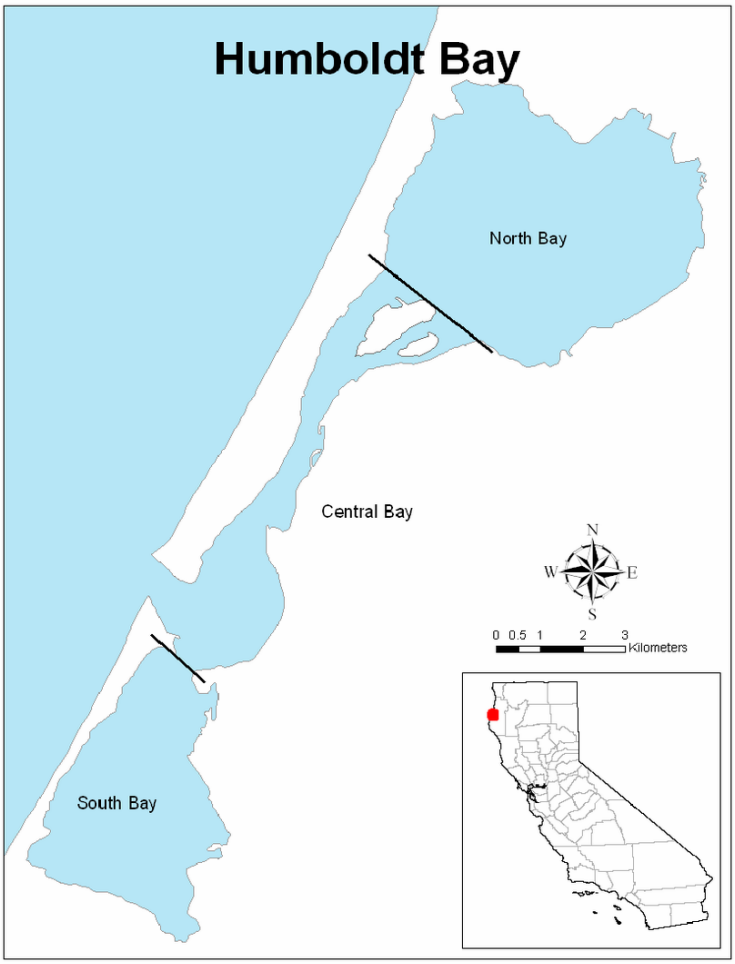

Figure 1. Map of Humboldt Bay, California *(ResearchGate)*

Humboldt Bay is a naturally land-locked estuary composed of two large bays: the relatively shallow South Bay to the south and the larger North Bay (also referred to as Arcata Bay). A long, narrow thalweg and a small bay, the Entrance Bay, connect the South and Arcata bays and also provide an outlet to the Pacific Ocean. Humboldt Bay is separated from the Pacific Ocean by a sand spit that is incised by two large, armored rubble-mound jetties, the North and South jetties. These man-made rubble-mound jetties, constructed by USACE, are approximately 2,000 feet apart and provide a stable entrance to

Humboldt Harbor. The Bay extends north and south for approximately 14 miles, covering 26.5 square miles at high tide and approximately 7.8 square miles at low tide.

1.2 Navigation and Dredging History

For over 140 years (***Table 1***), Humboldt Bay has been dredged to maintain navigable waterways. The U.S. Army Corps of Engineers (USACE) initiated dredging of Humboldt Bay's Interior Channels in 1881 to ensure safe navigation. In 1889, they began constructing the North and South Jetties to stabilize the Bar & Entrance Channel (B&E); these jetties were completed in 1900. Since then, modifications to Humboldt Harbor & Bay have periodically occurred to accommodate ocean-going vessels of various sizes. Humboldt Bay is also a designated harbor of refuge[1] with an important U.S. Coast Guard presence.

Table 1. General Chronology of Humboldt Harbor & Bay Navigation Improvements

Date	Description
1806	First recorded chart of Humboldt Bay (Bay of the Indians) by the Wiyot Tribe
1849	Humboldt Bay rediscovered and named Trinity Bay
1850	Renamed Humboldt Bay
1853	First marker buoys used for the Bay
1856	Light tower construction completed on North Spit
1871	Studies for navigation improvements begin
1881	600 vessels per year using the Bay
1881	Brush and plank jetties constructed but destroyed the following winter
1881	First USACE project authorized, the Eureka Channel is dredged
1881	Arcata, Samoa, and Hookton Channels dredged for the first time
1883	First survey for a low water jetty on the South Spit
1884	South Jetty authorized
1887	Training wall was shown on South Spit Jetty plans
1888	Dual jetties authorized
1889	South Jetty construction commences (brush and stone construction)
1891	North Jetty construction commences
1894	North Jetty built out to Bend 420, South Jetty built out to Bend 230
1896	Bar Channel deepened to 25 feet deep and 100 feet wide
1900	Initial jetty construction completed: 8,000 feet long, 5 to 10 feet above MLLW
1911-1917	Jetties damaged, repaired, and raised from original elevation of 10 to 12 feet MLLW to a reconstructed height of 18 feet above MLLW
1939	Dual rubble-mound jetties completed
1939	Entrance Channel completed: 30 feet deep and 500 feet wide
1939	Eureka, Samoa, Arcata, and Fields Landing Channels initial construction completed
1954	Entrance Channel deepening completed to 40 feet

[1] Humboldt Harbor & Bay is listed as a "harbor of refuge" under California Harbors and Navigation Code § 70.5. 46. CFR 175.400 further defines a "harbor of safe refuge" as a port, inlet, or other body of water that is naturally sheltered from heavy seas by land and where a vessel can navigate and anchor securely.

1954	Eureka and Samoa Channels deepening (30 feet) completed and North Bay Channel initial construction completed
1959	Engineering and design study; repair North and South Jetties
1960-1963	Repair jetty damage of winter 1957–1958
1964-1965	Extreme damage to jetties, 100-ton blocks washed away
1966-1967	Repair and maintenance on North and South Jetties
1969	Jetty repair study and model conducted by the USACE' Engineering Research and Design Center (ERDC) in Vicksburg, Mississippi
1971	Humboldt Bay Bridge completed, connecting the North Spit with Eureka
1971-1973	Heads of both jetties destroyed, Dolos blocks placed on jetties
1977	USACE names jetties a historical engineering landmark
1995	EPA designates HOODS as a new permanent Ocean Dredged Material Disposal Site
1999	Bar and Entrance Channel deepened to 48 feet MLLW and segments of the Interior Channels to –38 MLLW
1999	Deepening of Samoa Turning Basin to 38 feet MLLW
1999-2025	USACE places an average of ~1,000,000 cy/year of sand at HOODS
2020	USEPA expands HOODS in response to sand mounding
2025	USACE places ~300,000 cy at HNPSA

Operations and maintenance (O&M) dredging to maintain Humboldt Bay's navigation channels takes place in both the B&E and the Interior Channels (***Table 2***), generally between March and November. Due to the rough seas of the B&E, large hopper dredges like the *Essayons* are typically employed, as smaller dredges cannot operate safely. For the more sheltered channels inside the Bay, smaller hopper dredges such as the *Yaquina* are preferred.

Table 2. Humboldt Harbor and Bay Federal Channel Specifications

Navigation Channels	Depth	Width	Length	Allowable Overdepth
Bar and Entrance Channel *Stations 0+00-135+00*	48	500-1,600	8,500	3
North Channel *Stations 135+00-309+00*	38	400	18,500	2
Samoa Channel & Turning Basin *Stations 309+00-392+46*	38	400-1,000	1,746-6,600	2
Eureka Channel Outer *Stations 0+00-44+00*	35	400	4,400	2
Eureka Channel Inner *Stations 44+00-89+70*	26	400	4,570	2
Field's Landing Channel & Turning Basin *Stations 0+00-124+36*	26	300-800	735-10,900	2

All specifications are measured in feet, except for depth which uses feet Mean Lower Low Water.
Width and length vary from channel to turning basin.
Stations 0+00-8+00 of the Field's Landing Channel and Stations 124+00-136+00 of the North Bay Channel are considered a part of the Bar and Entrance Channel and are dredged as such.

Currently, the USACE conducts annual O&M dredging of the Federal Channels in Humboldt Bay, primarily disposing of the dredged material at the Humboldt Open Ocean Disposal Site (HOODS), ***Figure 2***. However, in 2025, the USACE initiated the Humboldt Nearshore Placement Pilot Project (HNPPP), a pilot project to increase the beneficial use of dredged material by utilizing the Humboldt Nearshore Placement Study Area (HNPSA).

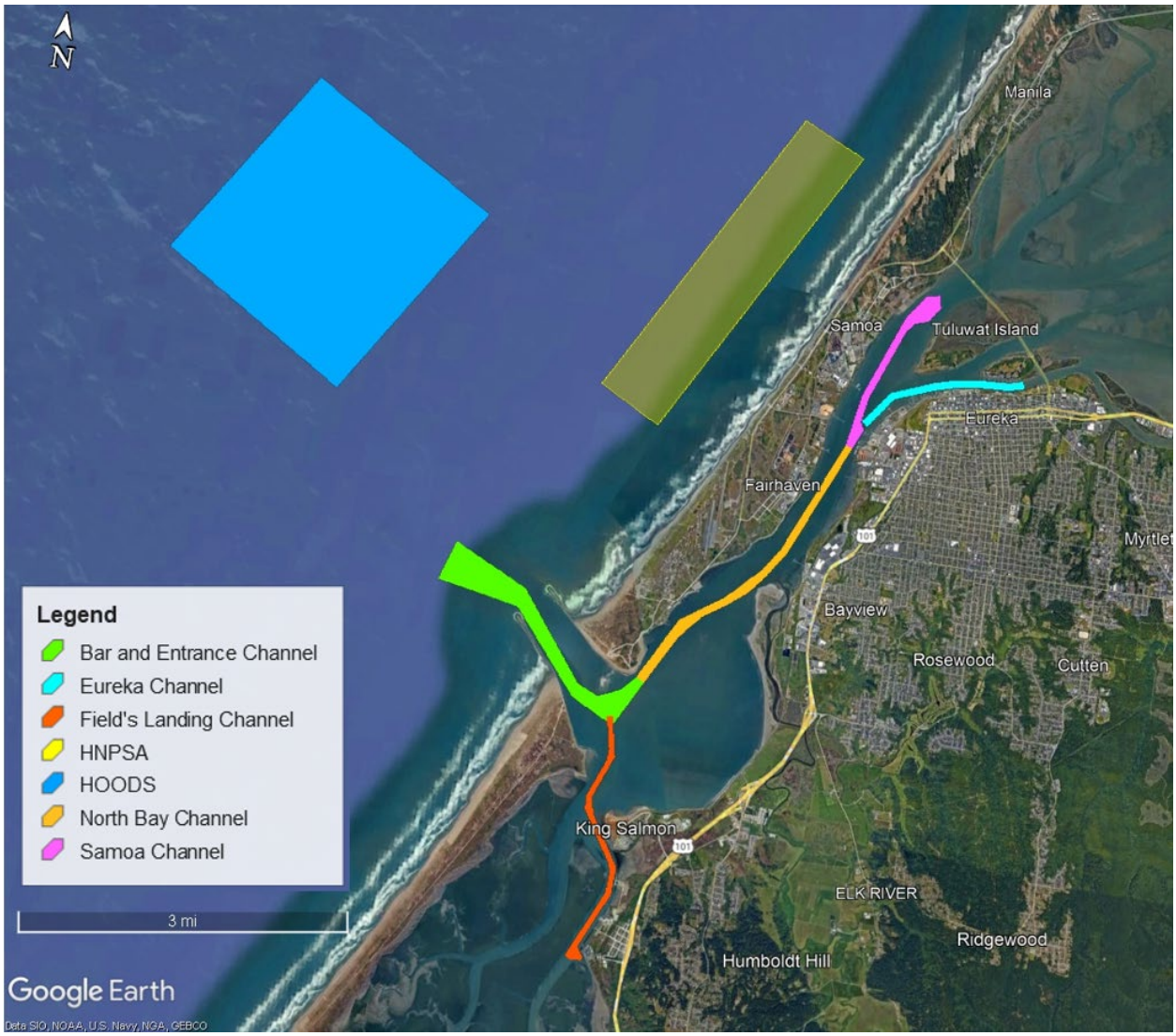

Figure 2. Humboldt Harbor & Bay Federal Channels and Placement Areas

To maintain navigable depths, the USACE dredges an average of one million cy from the B&E and 50,000 cy from the combined interior channels annually, see ***Table 3***.

Table 3. Historic Dredge Volumes

Year	Bar & Entrance Channel	Interior Channels	Total
2015	432,490	-	432,490
2016	715,296	20,777	736,073
2017	1,588,906	-	1,588,906
2018	1,115,051	-	1,115,051
2019	1,181,388	-	1,181,388
2020	1,047,669	110,834	1,158,503
2021	1,305,149	-	1,305,149
2022	895,063	-	895,063
2023	597,470	254,425	851,895
2024	758,903	59,925	818,828
2025	1,361,074	60,841	1,421,915
10-Year Average	**999,860**	**46,073**	**1,045,933**
All values measured in cubic yards			

2 Purpose and Need for Action

2.1 Statutory and Regulatory Requirements

Under the Water Resources Development Act (WRDA) of 1999, Pub. L. No. 106-53, 113 Stat. 269, 273, USACE is authorized to deepen Humboldt Harbor and Bay to accommodate the upcoming generation of deep-draft ships. Improvements to and maintenance dredging of the Federal Channels has been accomplished pursuant to the following authorities:

- River and Harbor Act of 1910, Pub. L. No. 61-264, 36 Stat. 630, 661
- Rivers and Harbors Appropriations Act of 1917, Pub. L. No. 65-37, 40 Stat. 250, 259
- Rivers and Harbors Act of 1927, Pub. L. No. 69560, 44 Stat. 1010, 1014
- Rivers and Harbors Act of 1930, Pub. L. No. 71-520, 46 Stat. 918, 931
- Rivers and Harbors Act of 1945, Pub. L. No. 75-14, 59 Stat. 10, 21
- Rivers and Harbors Act of 1962, Pub. L. No. 87-874, 76 Stat 1173, 1176
- Water Resources Development Act of 1986, Pub. L. No. 99-662, § 202, 100 Stat. 4082, 4092

These acts collectively authorize the USACE to construct, maintain, and improve navigable waterways for the purposes of commerce, navigation, and national defense.

2.2 Purpose of the Proposed Action

The purpose of the Proposed Action is to maintain the congressionally authorized depths of the Federal Channels within Humboldt Harbor & Bay, and continued operation of the U.S. Coast Guard, through annual maintenance dredging. This also ensures the harbor's continued availability as a safe refuge during storms. Maintenance dredging is critical to the U.S. Coast Guard's ability to effectively respond to emergencies and conduct search and rescue operations, allowing for unimpeded passage of their vessels during all tidal conditions.

Because the Proposed Action involves the discharge of dredged material into waters of the U.S., Section 404 of the Clean Water Act requires an evaluation of alternatives that would avoid or minimize impacts to aquatic ecosystems. The dredged material will be managed to minimize environmental impacts and, where feasible, provide beneficial use.

2.3 Need for the Proposed Action

The need for the Proposed Action arises out of the fact that without proper maintenance dredging, all of the Federal Channels into and within Humboldt Harbor & Bay would eventually shoal to the point that the safe, efficient passage of commercial deep-draft vessels to the port would not be possible. This situation would discourage shippers from using Humboldt Bay for commerce because it would require additional vessel trips to accommodate 'light-loaded' vessels (vessels carrying less cargo than their maximum capacity), resulting in increased transportation costs and emissions, decreased vessel safety, and maneuvering problems. In addition, ship groundings caused by unmaintained deep-draft channels could result in oil and fuel spills. Grounding spills could cause serious environmental damage through the release of pollutants. This would subsequently have a long-term adverse effect on the local economy of Humboldt County, compromise the use of the harbor for refuge during storms and the operation of U.S. Coast Guard ships based in the Bay, and impact National Economic Development. Maintaining the navigability of Humboldt Bay supports National Economic Development by facilitating the efficient transport of goods, connecting regional industries to national and international markets, supporting job creation in maritime-related sectors (e.g., fishing, shipping, tourism), and ensuring the reliable delivery of essential commodities.

3 Scope of the Analysis

This Environmental Assessment (EA) has been prepared following the process established by the Department of Defense (DOD) National Environmental Policy Act (NEPA) Implementing Procedures, June 2025.

The scope of project analysis is limited in time and space by the reasonably foreseeable adverse effects of the Proposed Action. This Environmental Assessment (EA) primarily focuses on the potential impacts of maintenance dredging occurring within the Federal Channels of Humboldt Harbor & Bay, and the placement of dredged material at the HOODS and the HNPSA in the Pacific Ocean for the period of 2026-2030.

The spatial scope of analysis includes:

- The water column, benthic habitat, and adjacent intertidal zones within and immediately adjacent to the Federal Channels of Humboldt Harbor & Bay.
- The water column and seafloor at the HOODS.
- The water column, seafloor, and adjacent shoreline at the HNPSA.

For certain environmental parameters, such as air quality and noise, the scope of analysis extends beyond these immediate areas to include the surrounding terrestrial environment due to the potential for impacts related to vessel traffic and equipment operation during dredging activities.

4 Alternatives, Including the Proposed Action

This Environmental Assessment evaluated various alternatives that would maintain navigational access and safety in the study area. The purpose of this section is to describe the Proposed Action and No Action Alternative, as well as summarize alternatives considered but eliminated from further study.

4.1 Alterative 1: Maintenance Dredging, with Placement at HOODS and HNPSA (Proposed Action)

The Proposed Action involves the annual maintenance dredging of the B&E, North Bay, Eureka, Samoa, and Field's Landing Channels and associated turning basins located in Humboldt Harbor & Bay for the 2026-2030 timeframe. ***Table 2*** provides an overview of the congressionally authorized depths, widths, and lengths of the navigation channels. ***Table 3*** shows recent dredging volumes from the Proposed Action Area.

Based on recent dredging history, a maximum of 1,500,000 cy are expected to be dredged annually from the B&E and combined Interior Channels during 2026-2030 by the USACE hopper dredges *Essayons* and *Yaquina*, or with contracted hopper dredges, during the March-November work window.

Depending on the result of sediment characterization, material dredged from the Federal Channels between 2026-2030 would be placed at the permanently designated disposal site, the HOODS, or the pilot site, the HNPSA.

4.1.1 Humboldt Open Ocean Disposal Site (HOODS)

Since 1995, dredged material from the Federal Channels has historically been placed at HOODS, which is a Federally designated site located approximately three miles northwest of the entrance to the Harbor, ***Figure 3***. The original HOODS is square with sides one nautical mile in length. This site was subdivided into 36 cells, each 1/6 of a nautical mile on a side. In January 2021, U.S. Environmental Protection Agency (USEPA) officially expanded the boundary of HOODS to minimize the mounding effect that had begun taking place (U.S. Environmental Protection Agency, 2020). The original HOODS, shown as "Quadrant 1" in the above figure is now closed to further disposal.

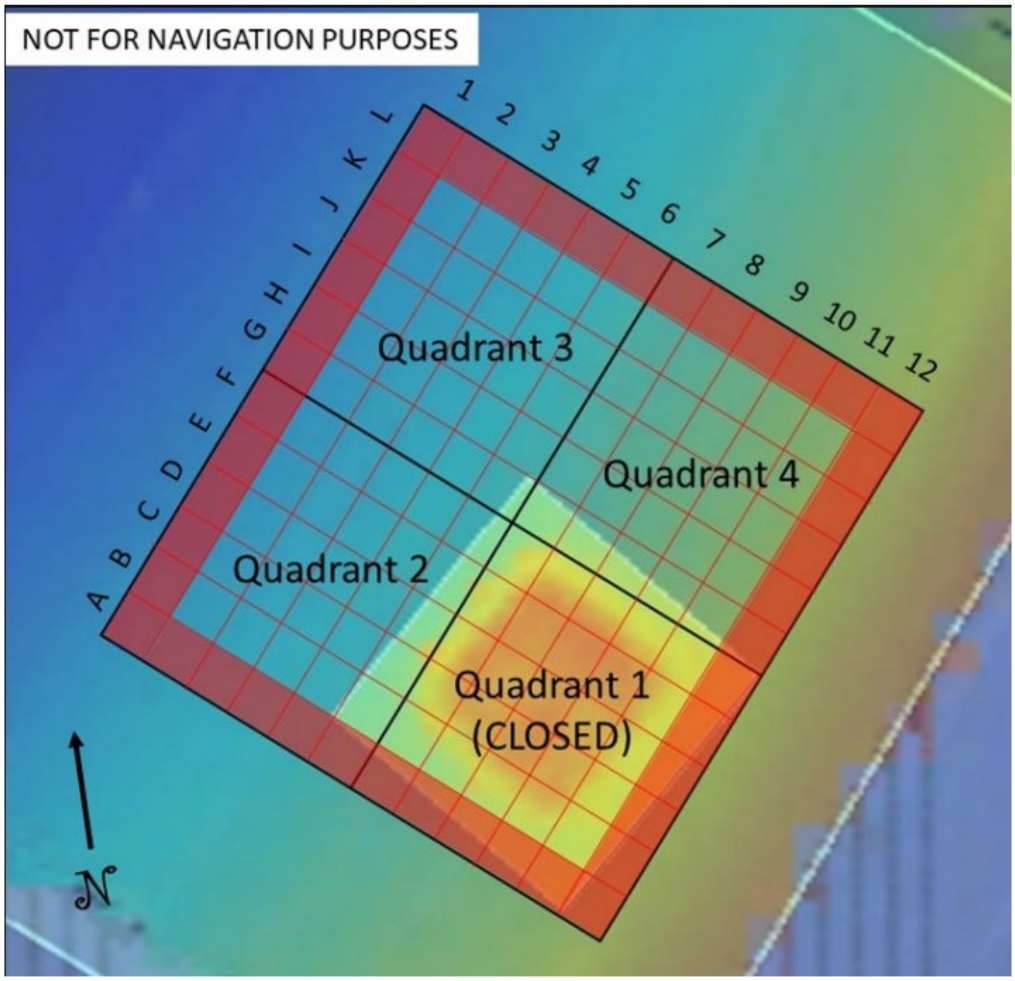

Figure 3. Humboldt Open Ocean Disposal Site Boundaries *(U.S. Environmental Protection Agency, 2025)*

4.1.2 Humboldt Nearshore Placement Study Area (HNPSA)

The HNPSA was selected based on extensive wave and sediment transport modeling focused on the potential benefits for material to disperse and supply sediment to the erosional area along the North Spit, while ensuring safe and efficient access for hopper dredges with water depths between 40 and 70 feet mean lower low water (U.S. Army Corps of Engineers, 2010). The nearshore site provides multiple benefits by redirecting material from disposal at HOODS and augmenting natural sediment supply to the beach and sandbar system.

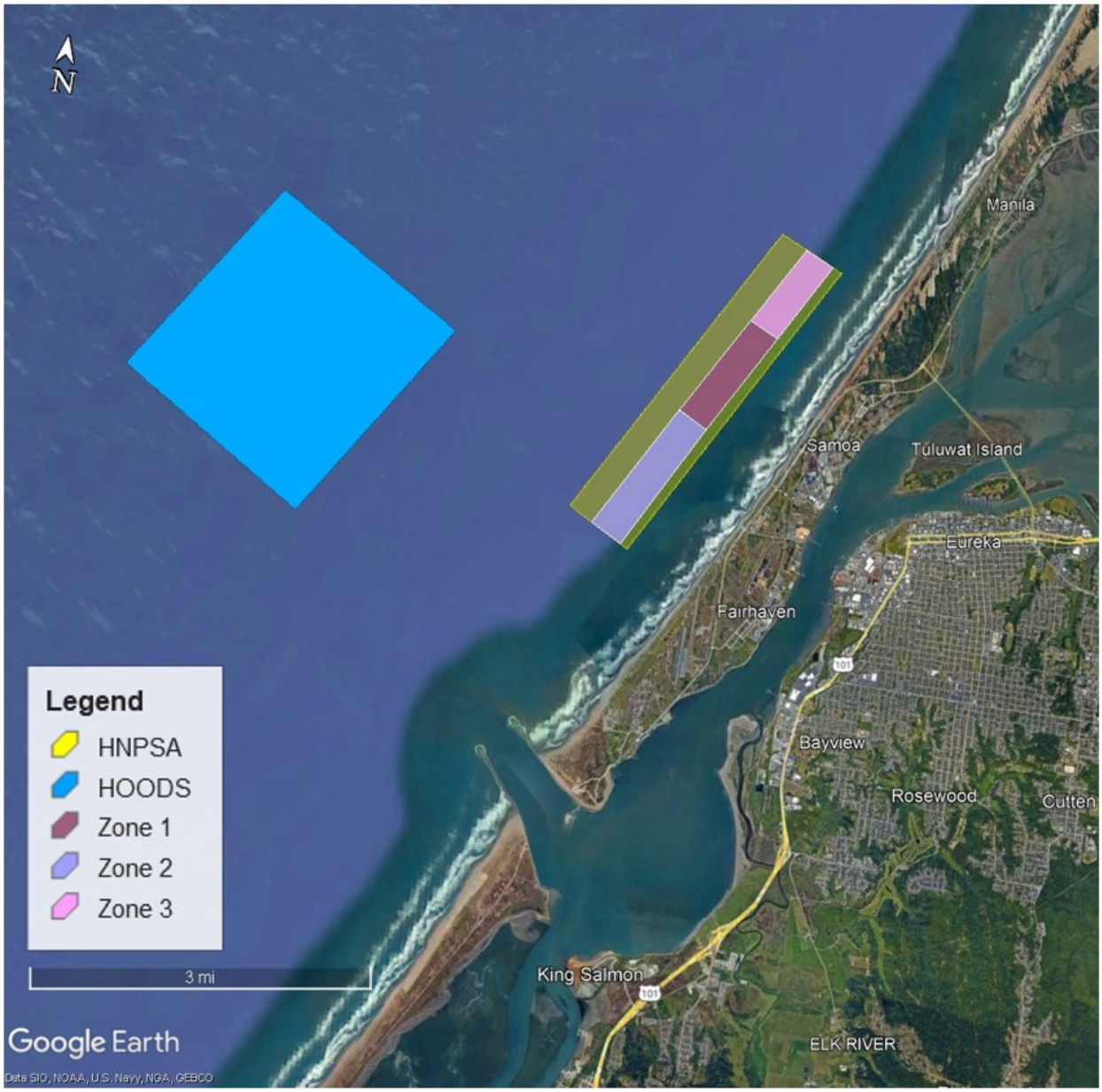

Figure 4. Humboldt Nearshore Placement Study Area Zones

The HNPSA was divided into three placement areas, or "zones" (***Figure 4***), within the permitted placement area to facilitate rotational placement and better analyze sediment dispersal patterns over time. All zones are the same cross-shore width and orientation, but vary in alongshore length:

- Zone 1: 6,000-feet alongshore direction x 1,700-feet cross-shore direction
- Zone 2: 7,250-feet along shore direction x 1,700-feet cross-shore direction
- Zone 3: 4,800-feet along shore direction x 1,700-feet cross-shore direction

Annual placements will rotate between zones, Zone 1: 2025, 2028. Zone 2: 2026, 2029. Zone 3: 2027, 2030. Pre-placement bathymetric surveys will be conducted annually to determine zone capacity; as such, the rotational zone placement schedule may differ based on these results.

Placements will be capped at 300,000 cy per year per zone, until more data is available on the sediment dispersion rates and effects to benthic communities.

Year 1 (2025) of the Humboldt Nearshore Placement Pilot Project
In May 2025, the USACE conducted an inaugural pilot placement, depositing 315,170 cy of sandy dredged material at the HNPSA: Zone 1 (***Figure 4***).

The U.S. Geological Survey (USGS) is monitoring the sediment migration and potential impact on species through benthic invertebrate analysis, epibenthic invertebrate analysis, and nearshore bathymetric surveys.

Please note, while post-placement data has been collected, the USGS is delayed in its analysis due to the lengthy government shutdown in October and November 2025. As such, the following monitoring summary is incomplete, but consists of the best available data at this time.

Benthic Invertebrate Analysis

The pre-placement survey was conducted in April 2025, followed by the post-placement survey in September 2025, ***Figure 5.*** Samples were collected from the placement area (Zone 1) and a reference site of similar size and orientation to the north, ***Figure 6.***

Figure 5. Benthic Samples collected using a Smith-Mac Grab from the USGS R/V Parke Snavely and Cal Poly Humboldt R/V North Wind

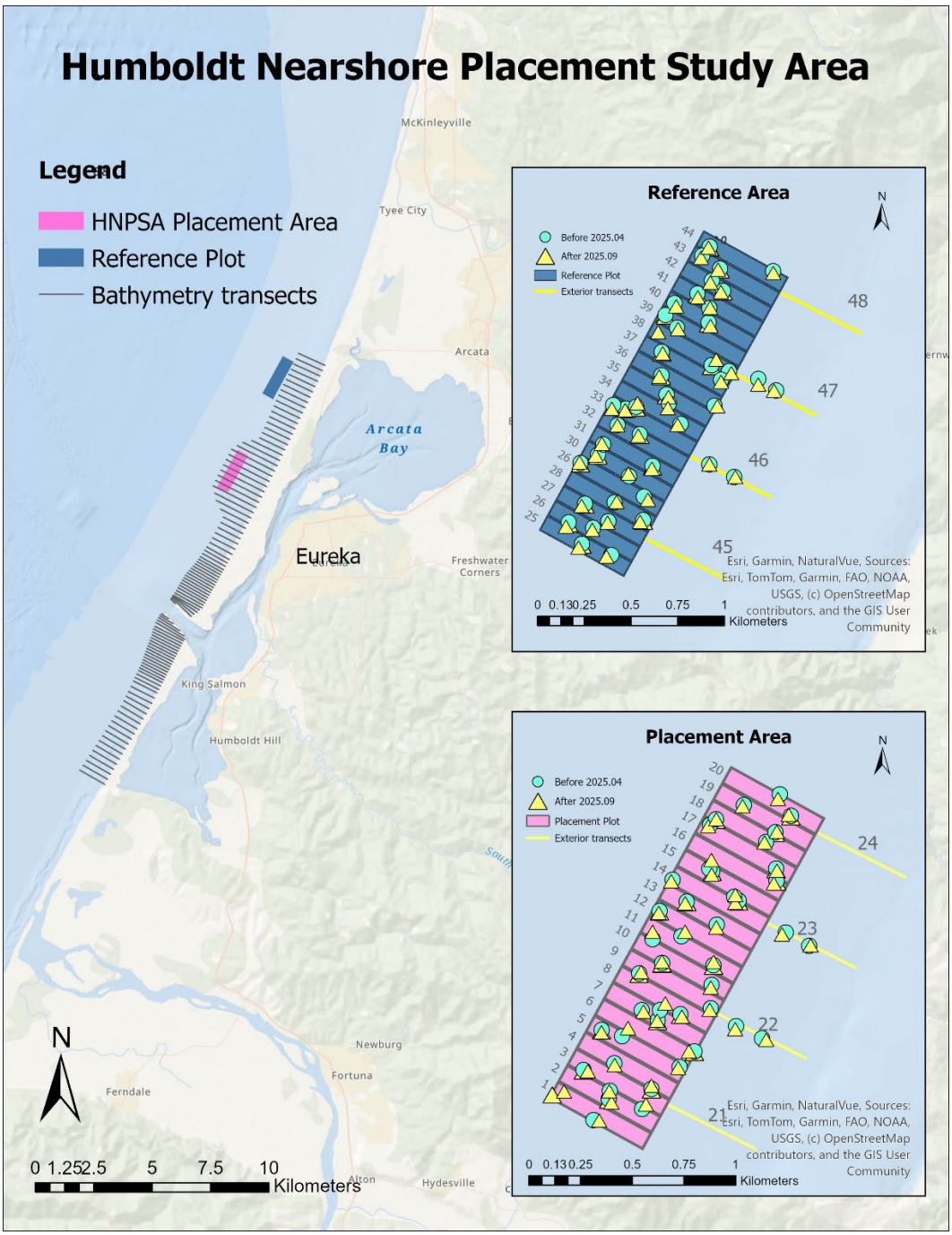

Figure 6. Map showing nearshore (a) Zone 1 Placement and (b) Reference areas in 2025, overlaid with bathymetry transects and benthic grab sample locations before and after placement

Epibenthic Invertebrate Analysis

The during-placement survey was conducted in May 2025, followed by the post-placement survey in August 2025***, Figure 7.***

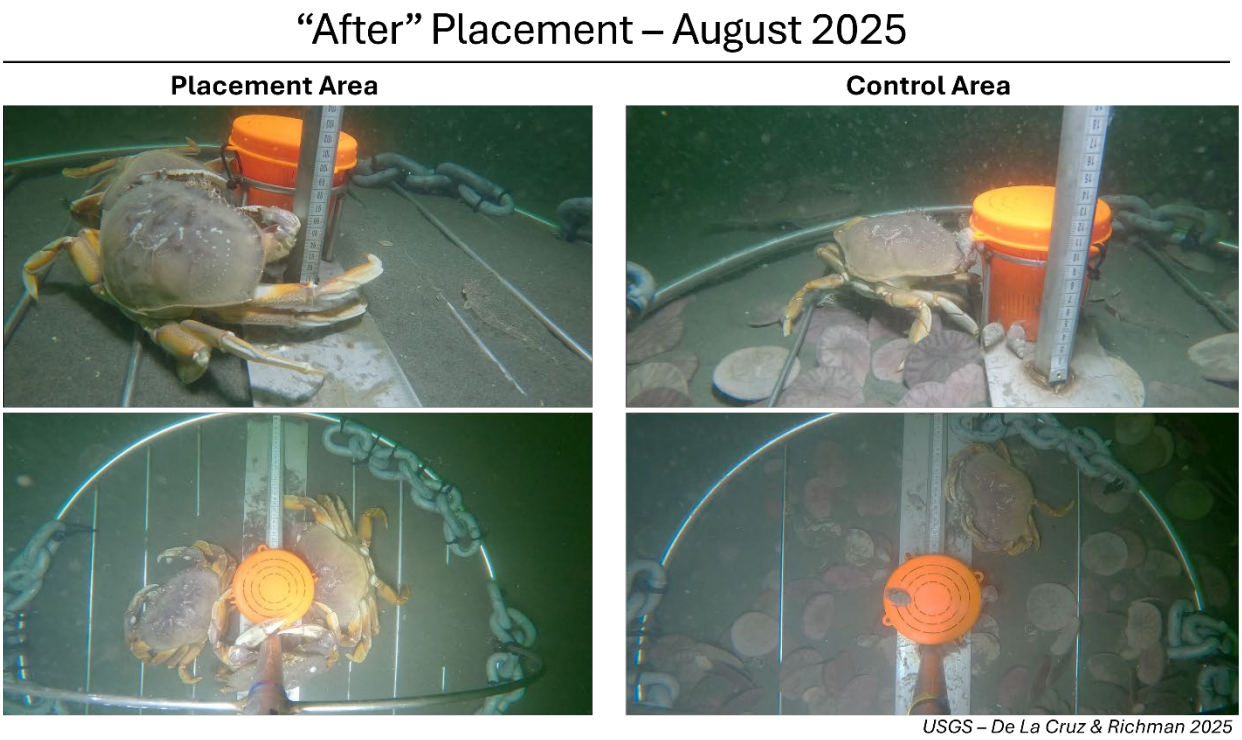

Figure 7. Epibenthic monitoring "After" placement (August 2025) in the HNPSA, Zone 1 and Control Area

Sediment Sampling

The Federal Channel sediments were analyzed to evaluate suitability of the material to be dredged for placement at the HOODS or HNPSA. Grain size analysis indicated that sediments from the B&E, the North Bay Channel, and the Samoa Channel and Turning Basin were >80% sand. The USACE received sediment suitability concurrence from the Environmental Protection Agency on January 10, 2025 and the North Coast Regional Water Quality Control Board on February 12, 2025. Agency sediment suitability correspondence can be provided upon request. More information on Sediment Quality can be found in ***Section 5.1.3.***

Placement Zone and Nearshore Area Bathymetric Surveys

The pre-placement survey was conducted in April 2025, followed by the post-placement survey in September 2025. Preliminary post-placement bathymetry data from September 2025, indicates that approximately 262,000 CY of the placed sediment remains within the HNPSA. The maximum elevation change between the pre-and-post placement surveys is 2.1 feet, ***Figure 8***.

The left panel of ***Figure 8*** shows the bathymetric surface from the pre-placement survey and locations of the survey lines. The right panel shows the difference between the pre-and-post placement surveys. For display purposes, elevation changes less than +/- 10 cm were set to zero. The above is an estimate given the sparse coverage of the survey area but suggests that a large portion of the dredged sediment remains within the placement area. Large winter waves are likely needed to disperse the dredged sediment at these water depths.

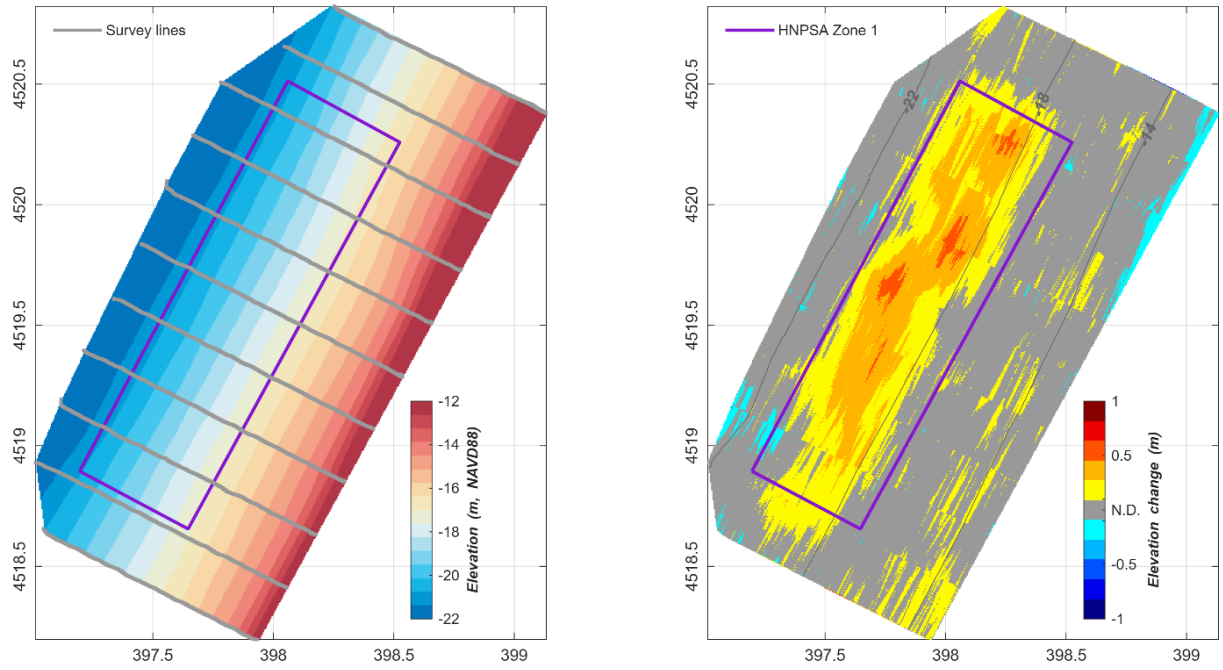

Figure 8. Pre-and-Post Placement Change Analysis Example *(U.S. Geologic Service, 2025)*

More information on future monitoring plans for the HNPPP can be found in the appendix.

4.2 No Action Alternative

The No Action Alternative defines the “without project condition.” Without proper maintenance dredging, all of the Federal Channels into and within Humboldt Harbor & Bay would eventually shoal to the point that the safe, efficient passage of commercial deep-draft vessels to the port would not be possible. This situation would discourage shippers from using Humboldt Bay for commerce because it would require additional vessel trips to accommodate 'light-loaded' vessels (vessels carrying less cargo than their maximum capacity), resulting in increased transportation costs and emissions, decreased vessel safety, and maneuvering problems. In addition, ship groundings caused by unmaintained deep-draft channels could result in oil and fuel spills. Grounding spills could cause serious environmental damage through the release of pollutants. This would subsequently have a long-term adverse effect on the local economy of Humboldt County, compromise the use of the harbor for refuge during storms and the operation of U.S. Coast Guard ships based in the Bay, and impact National Economic Development. Maintaining the navigability of Humboldt Bay supports National Economic Development by facilitating the efficient transport of goods, connecting regional industries to national and international markets, supporting job creation in maritime-related sectors (e.g., fishing, shipping, tourism), and ensuring the reliable delivery of essential commodities.

4.3 Alternatives Considered, but Eliminated from Further Study

4.3.1 Maintenance Dredging with Placement at the Samoa Lagoon Dredge Material Dewatering Area

The Samoa Lagoon Dredge Material Dewatering Area, or "Samoa Lagoon", is an upland site designed and constructed to receive dredge materials, drain residual water back into the bay, and then temporarily store the dried sediment. The "dewatered" dredge material can then be hauled offsite for beneficial use or disposal (Humboldt Bay Harbor, Recreation and Conservation District, 2023).

This site is not a viable primary disposal method due to its limited capacity relative to the annual dredging need. For example, the Samoa Lagoon has an estimated maximum capacity of 30,000 cy; this is just ~2% of the total dredged from the Federal Channels annually. Furthermore, many potential upland sites include sensitive habitats (e.g., wetlands, coastal dunes), which can lead to permitting challenges and logistical limitations.

It is possible that as additional upland disposal or beneficial use site becomes available over time; however, these opportunities are speculative and would require significant investment in the planning, permitting, and development of such a site. The USACE remains committed to exploring and promoting beneficial reuse opportunities and will continue to evaluate the feasibility of incorporating upland beneficial use into future dredging plans, as appropriate.

4.3.2 Maintenance Dredging with Placement at Power Poles Beach

In 2007, the Humboldt Bay Harbor, Recreation and Conservation District (Harbor District) and the City of Eureka (City) placed approximately 200,000 cubic yards of fine-grained material at the Samoa Beach access point known as "Power Poles". Material was transported to the site via pipeline over the dunes. The dredge slurry created a temporary barrier, hindering access for beachcombers, runners, dog walkers, horseback riders, and other daily users of the Samoa and Manila beaches (Bense-Kang, 2017). In addition to impeded recreational access, the Harbor District and City struggled to combat the public perception that the fine-grained dredged material was a "contaminated sludge", in part due to its dark color and pungent smell, though contaminant concentrations tested below regulatory standards (Sims, CITY OF EUREKA: We Gotta Dredge the Marinas, and Dumping the Spoils on the Beach is the Least ENvironmetnally Impactful Option on the Table, 2017).

The California Coastal Commission, along with the U.S. EPA and California Dept. of Fish & Wildlife, made clear that any future projects must be better planned and that a similar project would not be a viable option (Burns, 2017) (Driscoll, 2008).

As such, future placements at the Power Poles Beach would require significant investment in the planning and permitting of the site and special consideration for public and agency sensitivities. This site could be cost-prohibitive as well, given the required use of a pipeline for placement.

4.3.3 Maintenance Dredging with Placement at Samoa Beach

The placement of sandy dredged material at Samoa Beach offers potential for beneficial use to supplement the sediment supply, and potentially alleviate the erosional trend in the area. Furthermore, the Harbor District has an outfall pipeline along Samoa Beach that requires ongoing protection, and dredged material placement could potentially serve to cover and protect this infrastructure (***Figure 9***).

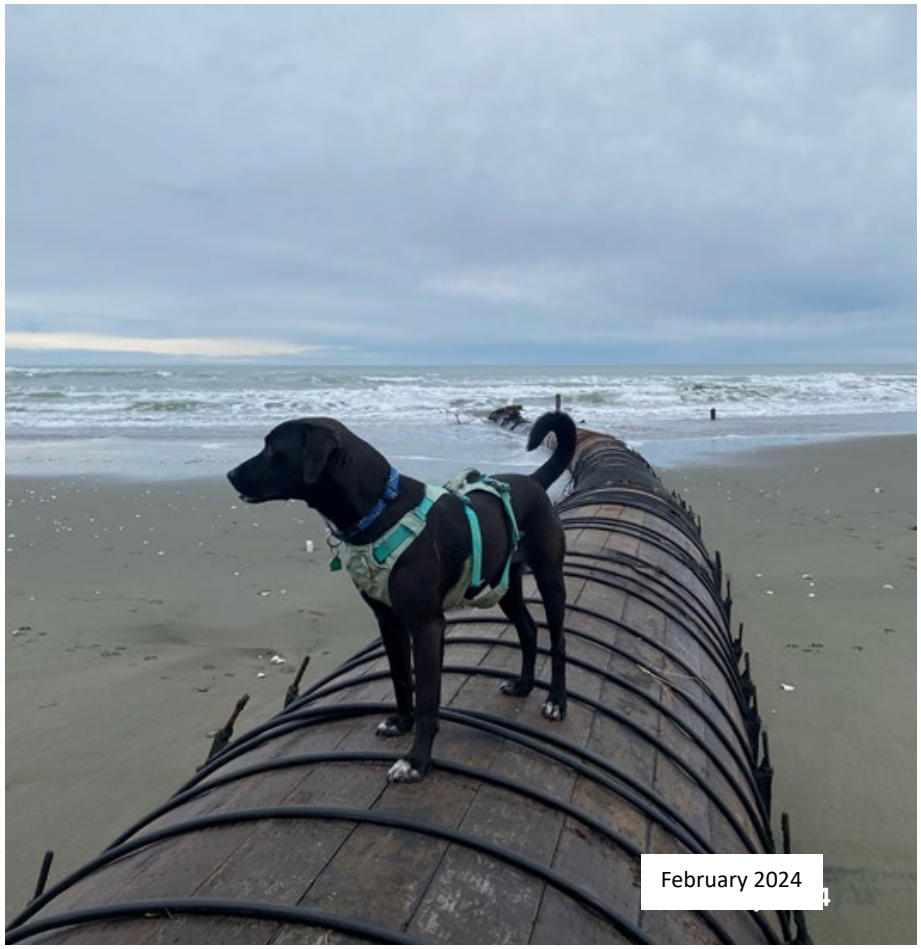

Figure 9. Outfall pipeline location in relation to HNPSA and HOODS. Note, pipeline only exposed after severe erosional events. Emergency temporary measures have been taken to cover the pipeline, highlighting the ongoing need for sediment management in this area

The outfall pipeline extends from DG Fairhaven Power LLC's Fairhaven Power Facility on the Samoa Peninsula to ~1.3 miles offshore (***Figure 9***). Fairhaven Power is permitted to discharge a maximum of 0.35 million gallons per day of powerplant-related process water, cooling tower water, and other wastewater under terms of their current National Pollutant Discharge Elimination System (NPDES) permit No. CA0024571, issued by the State of California's North Coast Water Board. The NPDES permit prohibits discharging wastewater in violation of effluent standards, it also prohibits discharging sewage sludge.

Placement at Samoa Beach would require significant investment in the planning, permitting, and development of such a site. This site could be cost-prohibitive as well, given the required use of a pipeline for placement; though the Harbor District may be able to contribute as a cost-share partner.

4.3.4 Maintenance Dredging with Placement at the Superbowl Site

The Superbowl Site is a 60-acre area on the North Spit adjacent to the Old Eureka Airport/Samoa Drag Strip, is enclosed by a levee and situated within a depression in the coastal dune habitat. It was previously used as a dredged material placement site during the 1978-1979 North Bay Channel Improvement Project. Although the California Coastal Commission (CCC) initially required revegetation after placement, this requirement was later removed to allow the site to function as an upland placement site for future, small improvement projects. However, since its use in 1979, a freshwater marsh has developed in the lower northern section of the Superbowl Site, providing habitat for waterfowl species during the rainy season.

The Superbowl Site was eliminated from consideration due to concerns about potentially degrading the established freshwater marsh habitat and potential impacts from pipeline placement on the Samoa Dunes to Menzies' wallflower (*Erysimum menziesii*), a sensitive plant species. Additionally, using this site is significantly more expensive than current alternatives, such as the HOODS, primarily due to the need for pipeline placement.

4.3.5 Maintenance Dredging with Placement at SF-3

The SF-3 Site served as an interim dredged material placement site, with its use dating back to the 1940s. Hydrographic surveys in 1984 showed an average depth of approximately 55 feet Mean Lower Low Water[2] (MLLW). However, between 1984 and 1988, the average depth decreased to approximately 40 feet MLLW, indicating significant shoaling from continued disposal.

SF-3 is susceptible to navigation hazards for commercial fishing and recreational boats because of breaking waves in the area. The mounding of dredged material and subsequent concerns about navigational safety have severely limited its use; therefore, disposal at SF-3 has occurred only once since 1988. The commercial fishing community strongly opposes the continued use of SF-3 due to these shoaling and navigational concerns.

4.3.6 Maintenance Dredging with Placement at the Nearshore Disposal Site

The Nearshore Disposal Site (NDS) was used in 1988 and 1989 when the USACE placed sandy dredged material from the B&E and North Bay Channels at this location. The NDS is located between the 50-foot

[2] Mean Lower Low Water is the average of the lowest tide each day over a 19-year period. It's used as the zero point for depths on nautical charts in the United States.

and 60-foot MLLW contours near the South Spit. *Please note that the NDS is distinct from the Humboldt Nearshore Placement Study Area (HNPSA).*

The intent of placing sand at the NDS was twofold: to alleviate navigation problems associated with the heavily mounded sediment at SF-3 and to keep the material within the Eureka littoral cell. However, the suitability of the NDS as a placement site quickly came into question. The Humboldt Fisherman's Marketing Association and the Commercial Fishermen's Wives of Humboldt voiced strong objections to the use of the site, citing adverse effects to navigational safety near the southern approach to Humboldt Bay. These groups feared that the placed sediment would migrate north and shoal in the area between SF-3 and the end of the South Jetty, creating hazardous navigation conditions. In addition, local fishermen, private citizens, and the California Department of Fish and Wildlife expressed concerns regarding adverse effects to commercial fishery resources in the nearshore area. Due to these significant concerns regarding navigational safety and potential impacts to fishery resources, the NDS was not considered further as a viable placement site for maintenance material.

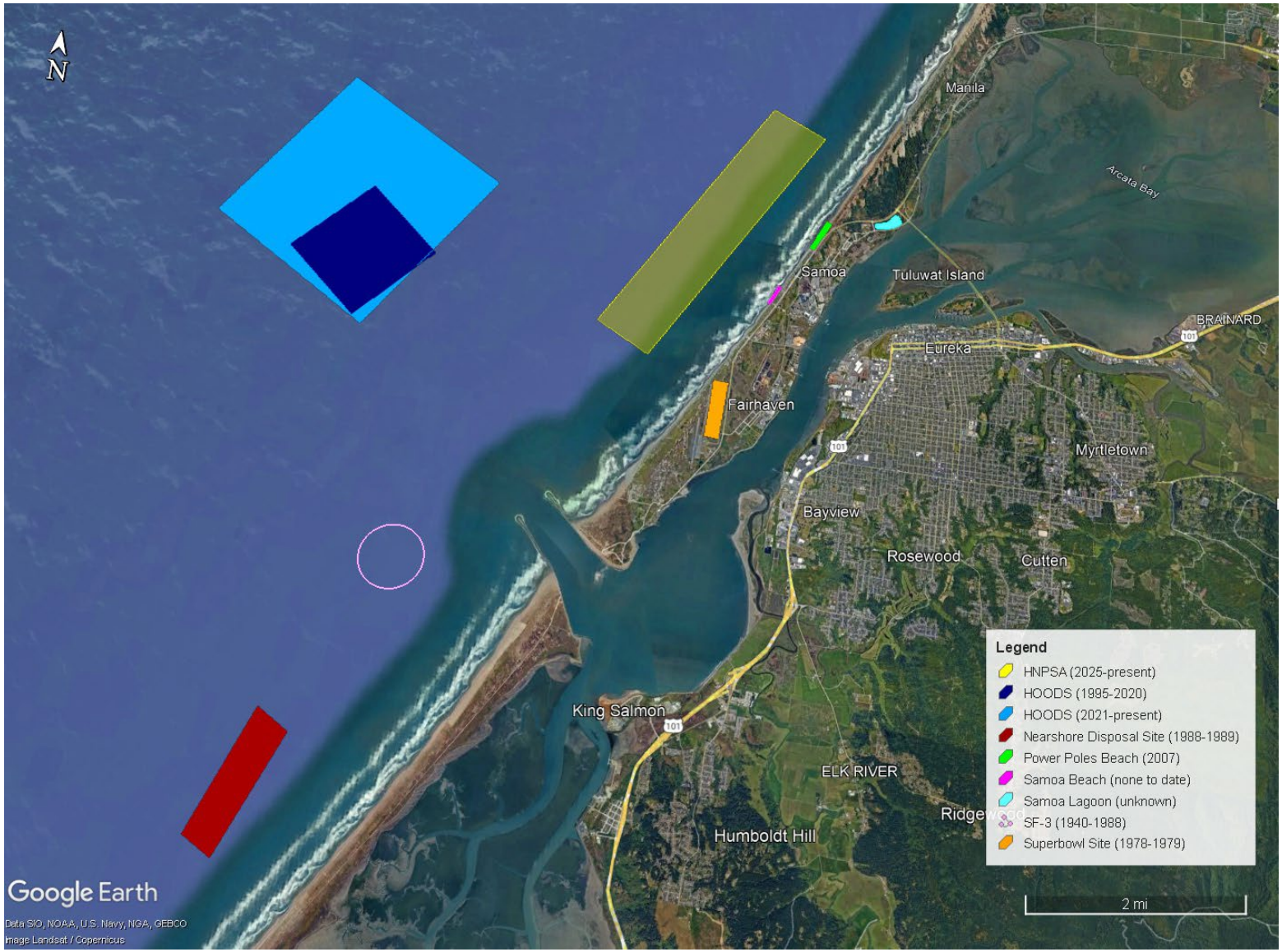

Figure 10. Active, Historic, and Potential Future Placement Sites

Table 4. Summary of Active, Historic, and Potential Future Placement Sites

Site Type	Site Name	Accepted Sediment Type	Transport Method	Placement Years	Capacity	Reason for Elimination
Ocean	Humboldt Open Ocean Disposal Site	sand, silt	barge	1995-present	1,000,000 cy (annually)	none, current placement site
Nearshore	Humboldt Nearshore Placement Study Area	sand	barge	2025-present	300,000 cy (annually)****	none, current placement site
	SF-3	sand	barge	1940-1988	unknown	hazardous navigational conditions
	Nearshore Disposal Site	sand	barge	1988-1989	unknown	hazardous navigational conditions
Beach	Power Poles Beach	sand*	pipeline	2007**	unknown	recreational impacts, unsuitable sediment type
	Samoa Beach	sand	pipeline	none to date***	unknown	none, potential future placement site
Upland	Samoa Lagoons	sand, silt	pipeline	unknown**	30,000 cy	insufficient site capacity, cost prohibitive
	Superbowl Site	sand, silt	pipeline	1978-1979	unknown	habitat degradation, cost prohibitive

**In 2007, the City of Eureka and the Humboldt Harbor District placed ~200,000 cy of predominantly silty material at the Power Poles Beach. If placement were to happen at this location again, material must have a higher sand content.*

*** Indicates placement by other dredging entities, mainly the City of Eureka and the Humboldt Harbor District. The USACE has not used this location for dredged material placement.*

**** The Samoa Beach has been identified as a potential future beneficial use site; no placements have occurred at this site to date.*

***** Placements at the HNPSA will be capped at 300,000 cy per year per zone, until more data is available on the sediment dispersion rates and effects to benthic communities.*

5 Existing Environment and Environmental Effect

5.1 Physical Environment

5.1.1 Erosion and Accretion Patterns

Erosion is the process by which land is worn away by water or wind, while accretion is the opposite process where land is built up by the deposition of sediment.

Existing Environment

The Humboldt Bay region is a highly dynamic coastal environment with distinct erosion and accretion patterns on its ocean and in-bay shorelines. On the ocean side, the sandy spits north and south of the harbor entrance are part of the Eureka littoral cell, a coastal compartment where sand naturally moves along the shore. The Humboldt Shoreline Monitoring Program (HSMP) was established in 1990 specifically to quantify the effects of removing large volumes of sand from this system for deep-water disposal at HOODS.

Through more than a dozen comprehensive surveys using topographic analysis and aerial photography, the HSMP has identified a general sediment transport trend of seaward movement and accretion of the beach along the South Spit and shoreward movement and erosion of the beach along the North Spit; see ***Figure 11.***

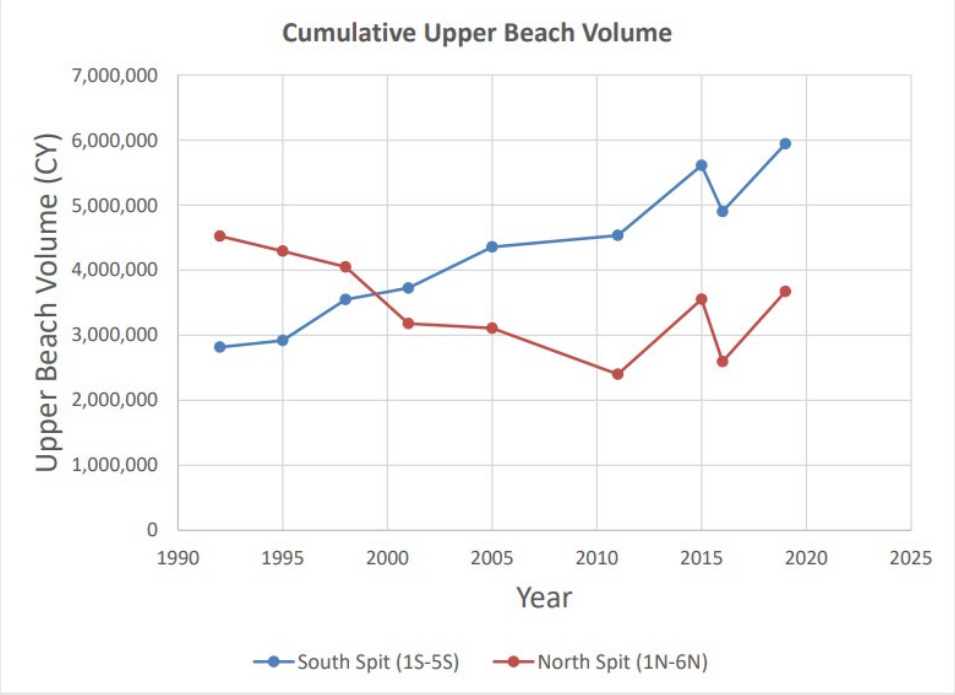

Figure 11. Cumulative upper beach volume for South Spit and North Spit over the time period of 1990 to 2019 (U.S. Army Corps of Engineers, 2024)

Environmental Effects

Proposed Action: The Proposed Action is expected to have a *long-term, beneficial impact* on regional erosion patterns. The placement of dredged sand at the Humboldt Nearshore Placement Study Area (HNPSA) represents a beneficial use of this material, directly addressing the findings of the HSMP. This action reintroduces sand into the Eureka littoral cell where it can naturally nourish the eroding North Spit, helping to counteract the long-term erosion documented by the monitoring program. Conversely, the Proposed Action is not expected to affect in-bay erosion. Dredging is confined to deep channels away from the shorelines and does not significantly alter the tidal currents that are the primary drivers of in-bay erosion. Therefore, impacts to the in-bay shoreline are considered negligible.

No Action Alternative: The No Action Alternative would result in *long-term, significant adverse impacts* to both the ocean and in-bay shorelines. On the ocean shoreline, the beneficial placement of sand at the HNPSA would cease, removing the primary tool for mitigating the chronic erosion of the North Spit documented by the HSMP. Inside the bay, progressive shoaling would fundamentally alter the bay's hydrodynamics, changing tidal currents and leading to unpredictable, system-wide changes in erosion and accretion patterns.

5.1.2 Substrate

Substrate refers to the composition of the seabed, including its sediment particle size, organic content, and other physical properties.

Existing Environment

Humboldt Bay region is a dynamic system with a mosaic of different substrate types, each supporting a distinct biological community, ***Figure 12***. The significance of these different seafloor types is rooted in the bay's physical forces. The high-energy environment of the Federal Channels, characterized by strong tidal currents and wave action, keeps the substrate scoured of fine particles, resulting in a coarse-grained, sandy bottom. This specific habitat is critical for species adapted to dynamic conditions, such as Dungeness crab and various flatfish. In contrast, lower-energy areas of the bay, like the expansive tidal flats, allow fine-grained silts and muds to settle, creating soft-bottom habitats that support different communities, such as eelgrass beds and burrowing clams. The placement sites at HOODS and the HNPSA are also located in a high-energy, open-coast environment and are characterized by a naturally sandy substrate.

Environmental Effects

Proposed Action: Impacts to the substrate from the Proposed Action are *considered less than significant* because the Proposed Action's primary function is to preserve the existing, high-value sandy habitat. The periodic removal of accumulated sand prevents the channels from shoaling and converting to a muddy bottom. While this maintenance temporarily disturbs the existing community, it ensures the long-term persistence of the sandy substrate that is essential for sand-dependent species. At the HOODS and HNPSA, the placement of clean, sandy material buries the existing seafloor but does so with material that is physically compatible with the native substrate, causing no net change in habitat type.

No Action Alternative: The No Action Alternative would result *in long-term, significant adverse impacts* to the substrate and the ecosystem it supports. Without dredging, the Federal Channels would progressively shoal, and water velocities would slow. This would trigger a permanent habitat conversion, changing the substrate from the existing coarse-grained sand to fine-grained silt and clay. This

fundamental change would destroy the habitat for the current benthic and fish communities and represent a significant, negative shift in the bay's overall ecological structure.

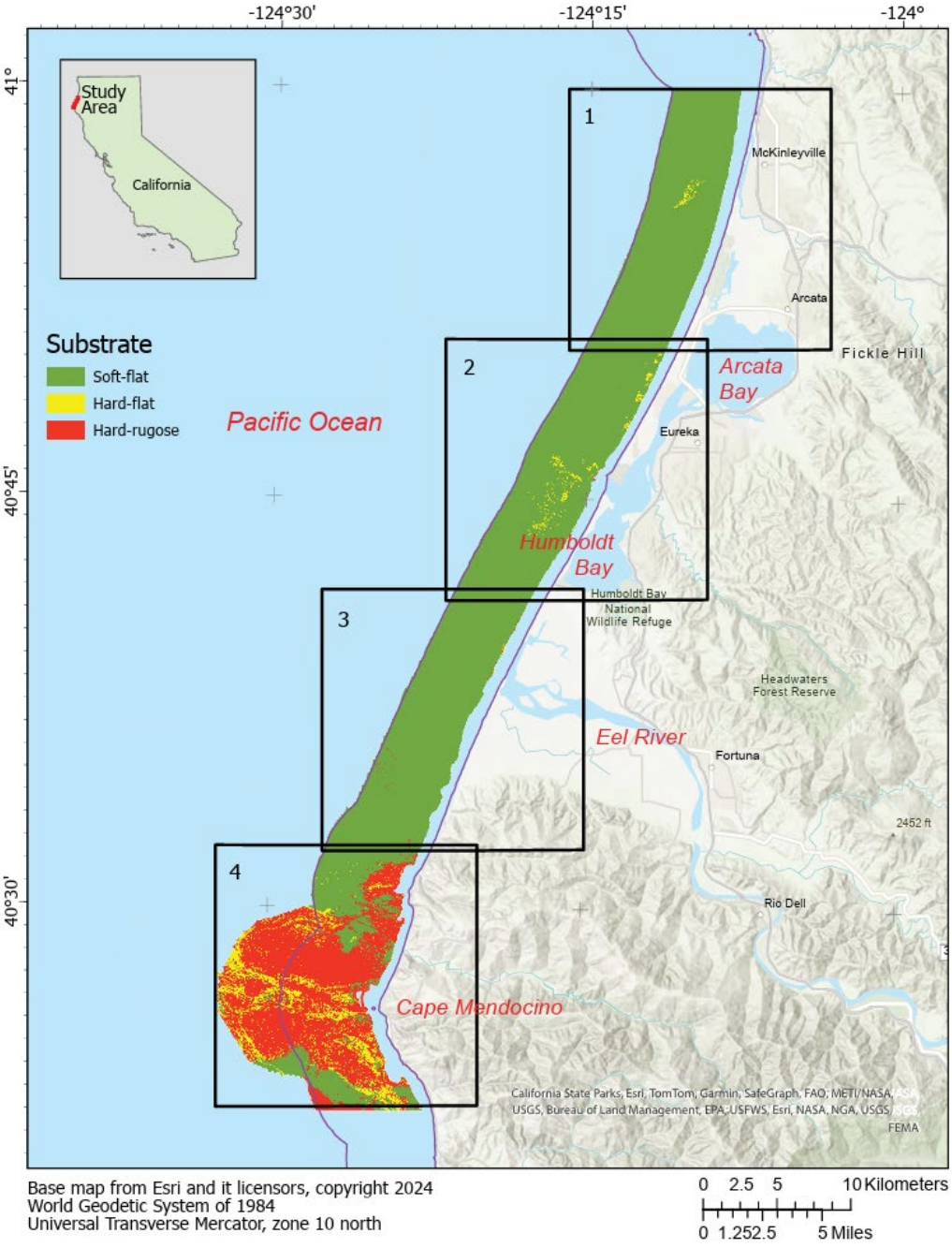

Figure 12. Map showing seafloor character raster image for the Humboldt Bay, California, Study Area (Cochrane, 2024)

5.1.3 Sediment Quality

Sediment quality refers to the physical characteristics and chemical composition of seafloor sediments, specifically concerning the presence or absence of contaminants that could pose a risk to aquatic life or human health.

Existing Environment

The USACE follows rigorous sediment testing protocols outlined in the *Ocean Testing Manual* to determine the environmental acceptability of dredged material prior to any unconfined aquatic disposal (U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, 1991). In 2025, sediments from all Humboldt Bay Federal Channels were comprehensively analyzed to evaluate their suitability for placement at HOODS and HNPSA.

The complete results are detailed in the *2025 Sampling and Analysis Report* (D.R. Reed & Associates, 2025). A summary of the key findings is provided below:

- **Grain Size Analysis:** Confirmatory testing showed that sediments from the Bar & Entrance Channel, the North Bay Channel, Samoa Channel & Turning Basins, and Eureka Outer were all greater than 80% sand, see ***Table 5.***

  Table 5. Grain Size Analysis Results from 2025 Sediment Sampling

	% Gravel *>2.00 mm*	% Sand *0.0625-2.00 mm*	% Silt *0.0039-0.0625 mm*	% Clay *<0.0039 mm*
HOODS *HUM-HOODS-2025*	0.04%	99.96%	0.00%	0.00%
HNPSA *HUM-PROP-2025*	0.35%	97.01%	2.06%	0.58%
Bar & Entrance *HUM-B&E-2025*	0.10%	98.82%	0.82%	0.26%
Samoa *HUM-SAM-2025*	6.75%	91.05%	1.75%	0.45%
Field's Landing *HUM-FL-2025*	0.23%	0.00%	48.02%	51.75%
North Bay *HUM-NB-2025*	2.25%	97.75%	0.00%	0.00%
Eureka Outer *HUM-EK1-2025*	0.59%	92.94%	4.94%	1.53%
Eureka Inner *HUM-EK2-2025*	0.20%	0.00%	51.25%	48.55%

- **Chemical and Biological Testing**: For finer-grain sediments from the Field's Landing and Eureka Inner, additional testing was performed.

- While initial chemical screening found that one or more analyte[3] concentrations were above reference levels, subsequent benthic toxicity testing confirmed that none of these compounds were biologically available to cause toxicity in the 10-day sediment tests.
- Further bioaccumulation tests indicated that while some tissue concentrations for compounds like total polycyclic aromatic hydrocarbons (PAHs) were above reference levels, they remained well below established invertebrate "effects" concentrations and below U.S. Food and Drug Administration action levels for safe food consumption.
- Sediment elutriate tests[4] also met the narrative water quality objectives[5].

Based on this comprehensive testing regime, sediments from all Federal Channels were determined to be Suitable for Unconfined Aquatic Disposal (SUAD). This finding received formal concurrence from the U.S. Environmental Protection Agency (EPA) on January 10, 2025, and the North Coast Regional Water Quality Control Board (NCRWQCB) on February 12, 2025.

Environmental Effects

Proposed Action: The Proposed Action will have *no impact* on the environment related to sediment quality. The material to be dredged has undergone rigorous physical, chemical, and biological testing in accordance with federal and state guidelines and has been determined to be clean sand, suitable for unconfined aquatic disposal by both the EPA and the NCRWQCB. Therefore, the transport and placement of this material will not introduce contaminants or cause adverse effects related to sediment quality.

No Action Alternative: The No Action Alternative would result in *long-term, significant adverse impacts* to sediment quality. The progressive shoaling of the channels would reduce tidal flushing, effectively turning the bay into a more efficient trap for pollutants originating from urban and agricultural runoff. This would lead to the degradation of sediment quality over time as contaminants accumulate in the newly deposited fine-grained sediments, particularly in the back-bay.

5.1.4 Turbidity

Turbidity is a measure of water clarity affected by the concentration of suspended particulates, such as sediment. Increased turbidity can reduce light penetration for aquatic plants and affect the feeding and respiration of aquatic organisms.

Existing Environment

As a natural estuary, Humboldt Bay experiences fluctuating levels of turbidity. Water clarity is generally higher during dry summer months and decreases significantly during winter storm events when river runoff introduces large volumes of suspended sediment. Therefore, the local aquatic environment is naturally adapted to periods of elevated turbidity.

Environmental Effects

[3] An analyte is a chemical substance that is the subject of a chemical analysis.
[4] An elutriate test is a laboratory procedure designed to simulate the short-term release of contaminants from dredged sediment into the water column during disposal.
[5] A water quality objective is a target for the physical, chemical, and biological characteristics of a body of water, established to protect its designated uses like drinking, swimming, or supporting aquatic life.

Proposed Action: The Proposed Action will cause temporary and localized increases in turbidity during dredging and material placement. During dredging, studies of operations in Humboldt Bay (Dickerson, 2005) show that the resulting plumes are short-lived (persisting for 25-55 minutes) and largely confined to the immediate navigation channel. The dredges are also equipped with anti-turbidity valves to further lessen these effects.

Similarly, during dredged material placement, studies show that sediment settles rapidly. At the deep-water HOODS, modeling indicates that even fine-grained sediment concentrations return to near-ambient levels within one hour (Scheffner, 1990). At comparable nearshore sites, field data shows that turbidity values decay to background levels within one to two minutes following a placement event (Roegner, 2021). Given the well-documented temporary and localized nature of these turbidity increases, the resulting impacts are expected to be *less than significant*.

No Action Alternative: The No Action Alternative would result in *long-term, significant adverse impacts* related to turbidity and suspended particulates. While the temporary plumes associated with the project would be avoided, the progressive shoaling of the Federal Channels would fundamentally alter the bay's sediment dynamics. Slower water velocities would cause fine-grained silts and clays to accumulate, replacing the current sandy substrate. Unlike sand, these fine particles are easily resuspended by wind, waves, and vessel traffic, which would lead to a state of chronic, higher background turbidity throughout the bay. This permanent degradation of water clarity would represent a more severe and lasting impact on the aquatic ecosystem than the temporary effects of the Proposed Action.

5.2 Water Resources

5.2.1 Water Quality

Water quality refers to the physical and chemical characteristics of water—such as temperature, salinity, pH, and dissolved oxygen—which collectively determine its suitability for supporting aquatic life.

Existing Environment

Humboldt Bay generally exhibits good water quality, characterized by conditions that fluctuate based on tides, seasons, and freshwater inputs from local rivers.

- **Temperature**: Water temperatures are cool year-round, typically ranging from 50°F to 63°F.
- **Salinity**: Salinity is highly variable, ranging from near-freshwater conditions in inner sloughs to full ocean salinity (32-34 ppt) near the bay mouth.
- **pH and Dissolved Oxygen (DO)**: pH levels in the bay are relatively stable. In fact, studies have shown that the bay's pH typically remains 0.2-0.4 units higher (less acidic) than the open coast, partly due to the significant buffering capacity of its extensive eelgrass beds (Barriquand, 2023). Dissolved oxygen levels are generally high and supportive of marine life.
- **Turbidity**: As a natural estuary, the bay contains suspended sediments. Turbidity levels vary greatly, increasing significantly during winter storm events and decreasing during the dry summer months.
- **Nutrients and Contaminants**: Nutrient levels are influenced by both agricultural runoff and oceanic upwelling. The sediment within the Federal Channels is routinely tested and has consistently been determined to be clean sand suitable for unconfined aquatic disposal.

Environmental Effects

Proposed Action: The Proposed Action will have *temporary and less than significant impacts* on water quality. Studies have shown that the dredging and placement of dredged material do not cause significant short- or long-term changes in water temperature, salinity, or pH (U.S. Army Corps of Engineers, 1976). The primary effect is a temporary and localized reduction in dissolved oxygen (DO) levels. This reduction is generally on the order of one to two milligrams per liter from ambient levels, is confined to the immediate area of dredging, and is temporary in nature, persisting for only a few minutes to one hour (Phipps, 1992). This potential reduction of DO is not expected to degrade water quality to the extent that aquatic resources would be significantly affected.

No Action Alternative: The No Action Alternative would result in *long-term, significant adverse impacts* to water quality. Without dredging, the progressive shoaling of the channels would restrict tidal circulation and reduce the bay's ability to flush itself. This would likely lead to degraded water quality conditions, including higher summer water temperatures and an increased risk of hypoxic (low dissolved oxygen) events in the back-bay, which could be harmful to marine life.

5.2.2 Special Aquatic Sites

Special Aquatic Sites are geographically defined areas, such as sanctuaries, refuges, or marine protected areas, that are designated by state or federal authorities for the protection or management of significant ecological or recreational resources.

Existing Environment

The nearest designated special aquatic site to the project area is the Samoa State Marine Conservation Area (SMCA). This state-designated area is located approximately two miles from the northernmost boundary of the HNPSA and four miles from the northernmost boundary of HOODS, see ***Figure 14***. The Samoa SMCA was established primarily to protect representative sandy beach and soft-bottom habitats as part of a statewide network, rather than to protect a unique, site-specific feature.

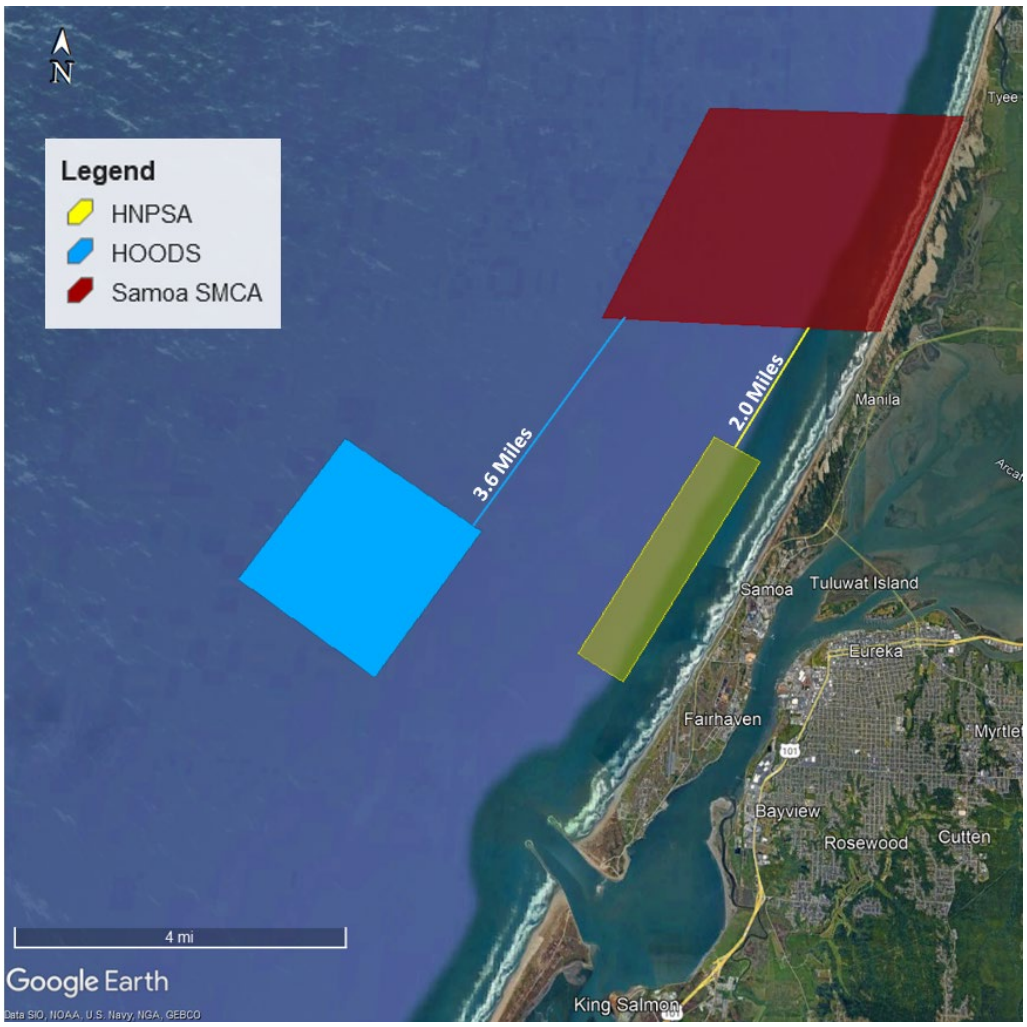

Figure 13. Samoa State Marine Conservation Area in relation to dredge material placement sites

Environmental Effects

Proposed Action: The Proposed Action will have *no impact* on any special aquatic sites. The Samoa SMCA is located a significant distance from the dredged material placement sites. Any sediment plume generated during placement activities will disperse and settle well before reaching the boundaries of the SMCA. As a result, turbidity levels within the SMCA will not be affected by the Proposed Action and will remain within the range of natural variability.

No Action Alternative: Under the No Action Alternative, no dredging or material placement would occur. Therefore, the No Action Alternative would have *no impact* on special aquatic sites.

5.3 Biological Resources

5.3.1 Planktonic Community

The planktonic community consists of microscopic organisms, including phytoplankton (plants) and zooplankton (animals), that drift in the water column and form the base of the marine food web.

Existing Environment

The open waters near the Humboldt Bay region are part of the dynamic California Current region. Plankton biomass and species composition are influenced by large-scale ocean currents, seasonal upwelling, and freshwater inputs from local rivers. This dynamic system naturally exposes the planktonic community to fluctuating levels of turbidity and nutrient availability.

Environmental Effects

Proposed Action: Dredging operations would result in a temporary and localized increase in suspended particulates (turbidity). This plume can temporarily reduce light penetration, which may briefly lower the productivity of phytoplankton in the immediate water column. Zooplankton could also experience temporary physical interference with feeding appendages.

However, implementation of the Proposed Action would result in *less than significant impacts* to the planktonic community. The turbidity generated from dredging operations is transient and would return to ambient conditions shortly after disposal ceases. Given that the Proposed Action area is an inherently dynamic and often turbid ocean environment, the planktonic community is adapted to such disturbances.

No Action Alternative: The No Action Alternative is expected to result in *less than significant, long-term adverse impacts* to the planktonic community. While project-related turbidity would be avoided, the eventual shoaling of the bay would alter its hydrodynamics. This change in water residence time and nutrient cycling could potentially alter the planktonic community structure over the long term.

5.3.2 Benthic Community

The benthic community includes all organisms living on, in, or near the seabed. In Humboldt Bay, this community is primarily composed of invertebrates such as crabs, polychaetes, cumaceans, tanaids, gammarid amphipods, copepods, oligochaetes, and nematodes (Rumrill, 2004)[6].

Existing Environment

The benthic communities within the Humboldt Bay region are adapted to frequent disturbance from strong tidal currents, waves, and large-scale sediment movement. Key species include polychaetes, amphipods, and economically important species like Dungeness crab. Trawl surveys conducted by the USACE in 2019 and 2020 confirmed the presence of thousands of juvenile and adult Dungeness crab both inside and outside of the Federal Channels (Novotny 2019, 2020), highlighting the use of these areas as habitat.

Environmental Effects

[6] **Polychaetes:** Marine segmented worms. **Cumaceans**: Small, shrimp-like crustaceans characterized by a large, hooded head shield and a long, slender abdomen. **Tanaids**: Very small, elongated crustaceans that resemble tiny isopods or shrimp. **Gammarid amphipods**: A large and diverse group of shrimp-like crustaceans with bodies that are flattened. **Copepods**: A vast group of tiny, often microscopic crustaceans. **Oligochaetes**: Segmented worms that includes terrestrial earthworms and their aquatic relatives. They are simpler in form than polychaetes. **Nematodes**: Microscopic, unsegmented roundworms.

Proposed Action: Dredging activities impact the benthic community through the entrainment and removal of organisms by the dredge dragheads, while placement of the material results in the burial and smothering of invertebrates on the seafloor. Despite these effects, several factors mitigate the overall impact. Recolonization of dredged channels and placement areas by organisms from adjacent, undisturbed areas is a well-documented and rapid process, particularly in dynamic coastal systems (Newell, 1998) (Wilbur, 2007). Benthic fauna in high-energy, sandy environments are naturally adapted to frequent disturbance and are dominated by opportunistic species that quickly invade and colonize available habitat (Bolam, 2006). Field studies confirm that while dredging causes initial mortality, functional recovery of the community can occur in as little as one year as mobile organisms migrate back into the area and larval settlement occurs (Sarda, 2010) (Van Dalfsen, 2000). Furthermore, the benthic fauna in this high-energy system are naturally adapted to disturbance, and the Proposed Action's effect represents a temporary and localized stressor within an area managed with annual dredging for over a century. Therefore, considering the rapid recovery, the adaptability of the local species, and the small footprint of the impact relative to the available habitat, impacts to the benthic community are expected to be *less than significant*.

No Action Alternative: The No Action Alternative would result *in long-term, significant adverse impacts* to the benthic community. Although the direct impacts of dredging would be avoided, the progressive shoaling of the channels would cause a large-scale habitat conversion from a sandy to a muddy substrate. This would fundamentally alter the community structure and adversely affect key species, such as Dungeness crab, that are adapted to the existing high-energy environment.

5.3.3 Fish Communities

The fish community includes the variety of species that reside in, forage within, or migrate through the Proposed Action area, from the estuarine environment of Humboldt Bay to the open ocean.

Existing Environment

Humboldt Bay and the adjacent marine environment support a diverse fish community. The species present can be grouped by their primary habitat.

Habitat Type	Representative Species
Pelagic (Open Water)	Northern Anchovy, Pacific Herring
Rocky Reef & Kelp Forest	Various Rockfish species (Black, Blue, Bocaccio, Brown, Copper, Grass, Vermillion), Lingcod, Kelp Greenling, Cabezon
Soft Bottom	Butter Sole, Dover Sole, English Sole, Sand Sole, Starry Flounder, Pacific Sanddab, Leopard Shark, School Shark, Spiny Dogfish, Big Skate

Recent studies confirm the bay's community is dominated by a few key species, including Northern Anchovy, Shiner Surfperch, and English Sole (Novotny, 2020). The bay also serves as a critical migratory corridor for several anadromous species listed under the Endangered Species Act, as detailed in ***Section 5.3.5.***

Environmental Effects

Proposed Action: During dredging operations, fish can be drawn into the dredge dragheads along with sediment (entrainment). Smaller and less mobile species are most susceptible, as many larger fish can

detect and avoid the equipment. Dredging also removes benthic invertebrates from the channel, causing a temporary, localized loss of a food source for bottom-feeding fish. At the placement sites, the discharge of material creates a temporary turbidity plume and buries the seafloor, smothering the benthic community and removing a food source for fish that forage there. However, the high sand content of the material ensures these turbidity effects are short-lived, as the sediment settles quickly. Despite these direct impacts, the overall effect on the fish community is expected to be *less than significant*. This conclusion is based on several mitigating factors: the impacts are temporary and localized, the project footprint is small relative to the vast amount of similar habitat available, and most fish species are mobile enough to avoid the immediate areas of operation.

No Action Alternative: Under the No Action Alternative, these impacts from dredging would be avoided; however, the Federal Channels would progressively shoal. This would lead to a large-scale habitat conversion to a muddy, low-energy system, which would *adversely affect* the existing fish community adapted to the current sandy environment and could alter critical migratory pathways.

5.3.4 Marine Mammals

Marine mammals are warm-blooded, air-breathing animals that utilize the marine environment. This group includes species such as seals, sea lions, and whales.

Existing Environment

Several marine mammal species may occur in the project vicinity.

Species Group	Likelihood of Presence in the Proposed Action area	Representative Species
Pinnipeds	Common	Stellar's Sea Lion, California Sea Lion, Harbor Seal
Large Whales	Uncommon/Rare	Humpback Whale, Blue Whale, Fin Whale, Gray Whale
Toothed Whales	Occasional/Transient	Orca, Sperm Whale, Harbor Porpoise

Pinnipeds such as Steller's sea lions are common year-round residents, frequently seen in the ocean near the harbor and within the bay. While large baleen whales are generally found in deeper ocean waters, certain toothed whales are known to make occasional visits. Notably, a pod of transient orcas was widely documented entering Humboldt Bay in December 2025 (Sims, 2025), presumably to forage on the local pinniped population. This event highlights that although uncommon, the bay is occasionally used by these apex predators.

Environmental Effects

Proposed Action: The primary impact to marine mammals from the Proposed Action is temporary behavioral disturbance from vessel noise and activity. Pinnipeds are accustomed to routine vessel traffic in the region and are expected to temporarily avoid the immediate vicinity of the dredge and placement operations without significant disruption to their foraging or migratory behavior. The potential for interaction with whales is low. Large baleen whales are unlikely to be present in the shallow Proposed Action area. While transient orcas are known to occasionally enter the bay, these visits are infrequent,

unpredictable, and typically short in duration. The low probability of their presence overlapping in time and space with the Proposed Action means the potential for disturbance remains minimal. Therefore, considering the routine nature of the activity and the transient presence of most species, impacts to marine mammals are expected to be *less than significant*.

No Action Alternative: The No Action Alternative would result in *long-term, significant adverse impacts* to marine mammals. Although disturbance from project-related vessel traffic would be avoided, the eventual shoaling and potential closure of the harbor entrance would fundamentally alter the ecosystem. This would reduce the availability of prey and block access to important foraging grounds within the bay for resident pinniped populations and other visiting marine mammals.

5.3.5 Special Status Species and Endangered Species Act Consultations, Including Essential Fish Habitat

Special status species are plants and animals that are Federally listed as threatened or endangered under the Endangered Species Act (ESA). This section also addresses Essential Fish Habitat (EFH), which are habitats designated under the Magnuson-Stevens Fishery Conservation and Management Act as necessary for fish spawning, breeding, feeding, or growth to maturity.

Existing Environment

The Proposed Action area provides habitat for several species and designated habitats protected under the ESA and the Magnuson-Stevens Act. Formal and informal consultations with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) is detailed below:

Consultation with the National Marine Fisheries Service

On April 14, 2021 (revised August 1, 2022), the USACE received a Biological Opinion (BO) from the National Marine Fisheries Service (NMFS) evaluating the effects of the maintenance dredging of the Federal Channels with disposal at HOODS for years 2021-2025; this BO included coverage of the Humboldt Nearshore Placement Study Area as well.

Per email discussion with NMFS (Matt Goldsworthy, pers. comm., November 22, 2024; Justin Ly, pers. comm., December 10, 2025), the Proposed Action has not changed from NMFS's assessment in the 2021-2025 BO. Therefore, on January 5, 2026, the USACE requested a one-year extension to the existing BO to accommodate staffing shortages and delays to other priority consultations caused by the recent government shutdown. The USACE expects this extension to be granted by March 1, 2026.

A summary of the 2021-2025 BO is provided below:

The Proposed Action has been evaluated for its effect on the following species and their designated critical habitats:

- Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*) Evolutionarily Significant Unit (ESU)
    - The Proposed Action is **likely to adversely affect** SONCC coho salmon; however, it is not likely to jeopardize the continued existence of the species.

- California Coastal (CC) Chinook salmon *(O. tshawytscha*) ESU

  - The Proposed Action is **likely to adversely affect** CC Chinook salmon; however, it is not likely to jeopardize the continued existence of the species.

- Northern California (NC) steelhead (*O. mykiss*) Distinct Population Segment (DPS)
  - The Proposed Action is **not likely to adversely affect** NC Steelhead or the designated critical habitat.

- Southern DPS of North American green sturgeon (*Acipenser medirostris*)
  - The Proposed Action is **not likely to adversely affect** the southern DPS of North American green sturgeon, or the designated critical habitats of the species.

The Proposed Action may affect Essential Fish Habitat (EFH) as designated under the Pacific Groundfish, Coastal Pelagic, and Pacific Salmon fishery management plans (FMPs).

According to 2021-2025 BO, the Proposed Action may adversely affect juvenile SONCC coho and CC Chinook salmon primarily through causing turbidity, propeller wash, overflow discharge, all of which may contribute to increased predation. Entrainment is expected to be unlikely, but may occur to a small number of individuals; we note that no SONCC coho or CC Chinook salmon were captured during the implementation of the Fish Surveying and Monitoring Plan (FSMP) (i.e., 2019 –2021). The NMFS further expects that the effects of dredge material disposal will be negligible due to the small disposal area relative to the overall large amount of habitat available. Removal of prey and other effects to habitat are expected to be localized and temporary.

The estimated amount of incidental take is stated as follows: “NMFS expects the Proposed Action to result in the incidental take of one percent of the total Humboldt Bay tributaries population of juvenile SONCC coho salmon and one percent of the total Humboldt Bay tributaries population of juvenile CC Chinook salmon during one year out of the next five years (2021-2025) when dredging is expected to occur in the Interior Channels. These fish will be harmed by being subjected to higher rates of predation.”

Recommendations and conservation measures put forth by NMFS in the 2021-2025 BO will be adhered to in order to minimize any potential impacts to listed species, see below:

1. The Corps shall monitor the duration of overflow dredging.
2. The Corps shall monitor and report dredging activity annually.

The USACE will continue to comply with these terms and conditions.

Consultation with the U.S. Fish and Wildlife Service

On March 1, 2021, the USACE received an Informal Consultation concurrence from the U.S. Fish and Wildlife Service (USFWS) that the maintenance dredging of the Federal Channels with disposal at HOODS for years 2021-2025 may affect, but is not likely to adversely affect, the Federally threatened marbled murrelet (*Brachyramphus marmoratus).* The USFWS reissued Informal Consultation concurrence on February 26, 2025 to include the Humboldt Nearshore Placement Study Area.

On December 12, 2025, the USACE requested Informal Consultation concurrence for the Proposed Action through 2030, noting that no major changes have been made since the 2025 consultation. The USACE expects this concurrence to be granted by March 1, 2026.

Environmental Effects

The Endangered Species Act (ESA) requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of any listed species. The consultation process detailed above fulfills this requirement and directly informs the National Environmental Policy Act (NEPA) determination of significance.

Proposed Action: Impacts on special status species are expected to be *less than significant*. This determination is based on previous Endangered Species Act (ESA) consultations with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), and the USACE's commitment to implementing all required conservation measures.

While formal consultation with NMFS concluded the project is "likely to adversely affect" Coho and Chinook salmon, the same analysis determined it would not jeopardize their continued existence. The USFWS also concurred that the project is "not likely to adversely affect" the marbled murrelet. By adhering to the mandatory terms and conservation measures of the NMFS Biological Opinion and the recommendations from USFWS, the Proposed Action's effects are minimized and do not rise to the level of significance under NEPA.

No Action Alternative: Under the No Action Alternative, the direct effects of the project described above would not occur. However, the Federal Channels would progressively shoal, which would lead to significant, long-term adverse effects on special status species and EFH. The shoaling would create physical barriers, impeding or preventing migration for adult and juvenile salmonids and restricting access for green sturgeon. This large-scale habitat conversion would degrade designated EFH and could also indirectly affect foraging birds like the marbled murrelet by altering the prey fish community. Therefore, the No Action Alternative would likely have *long-term adverse consequences* for these protected resources.

5.4 Air Quality and Noise

5.4.1 Air Quality

Air quality refers to the condition of the air within and around an area, which can be affected by the emissions of pollutants from sources such as industrial activity and engine exhaust.

Existing Environment

The project occurs within the jurisdiction of the California Air Resources Board (CARB), which regulates emissions from commercial harbor craft. In accordance with the Clean Air Act, the Proposed Action is exempt from a formal conformity determination because it consists of maintenance dredging within a previously approved area. The hopper dredges used for this work, the *Essayons* and *Yaquina*, are both equipped with CARB-compliant Tier II engines and are registered under CARB's Portable Equipment Registration Program (PERP). These modern engines significantly reduce emissions of nitrous oxide (NOx), sulfur oxide (SOx), and particulate matter compared to older equipment.

Environmental Effects

Proposed Action: Air emissions from the dredge engines will occur during dredging and transit activities. However, due to the use of modern, CARB-compliant Tier II engines and the temporary and localized nature of the work, these emissions are not expected to significantly affect ambient air quality. Therefore, impacts to air quality are expected to be *less than significant*.

No Action Alternative: Under the No Action Alternative, no project-related air emissions would occur, and existing ambient air quality conditions would persist; therefore, *no impact* is anticipated.

5.4.2 Noise

Noise is defined as unwanted or unpleasant sound. Environmental noise is measured in A-weighted decibels (dBA) to approximate the response of the human ear.

Existing Environment

The Proposed Action area is an active industrial harbor, with ambient noise levels generated by commercial shipping, fishing vessels, industrial facilities, and natural sources like wind and waves. The Humboldt County General Plan designates the harbor as a Coastal-Dependent Industrial Zone, which acknowledges a higher baseline level of ambient noise compared to residential areas.

Environmental Effects

Proposed Action: The Proposed Action will temporarily increase noise levels in the immediate vicinity of the dredges. Noise from a hopper dredge is generated by its engines, pumps, and the dragheads moving along the seafloor. However, these sounds dissipate with distance and occur in an environment already characterized by high levels of industrial and maritime noise. Given that the dredging is temporary and conducted away from sensitive residential receptors, the project is not expected to significantly increase noise levels above the existing baseline. Therefore, noise impacts are expected to be *less than significant*.

No Action Alternative: Under the No Action Alternative, no project-related noise would be generated; therefore, *no impact* is anticipated.

5.5 Cultural and Historic Resources

5.5.1 Cultural and Historic Resources

Cultural resources include prehistoric and historic archaeological sites, architectural properties, and resources of importance to Native American Tribes. Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to consider the effects of their actions on properties that are listed or eligible for listing in the National Register of Historic Places (historic properties). Additionally, the Abandoned Shipwreck Act (43 U.S.C. §§ 2101–06) protects shipwrecks found in state waters.

Existing Environment

The area of potential effects encompasses the Federal Channels and the HOODS and HNPSA placement sites. The investigation to identify historic properties consisted of reviewing previous environmental documents, archaeological survey reports, shipwreck data, and consultations with maritime archaeologists, including findings from the 2019 jetty repair project at the harbor entrance.

USACE policy directs a reasonable and good faith effort to identify submerged resources but does not require new underwater surveys within previously dredged channels unless there is good reason to believe significant resources exist. It is generally accepted that the initial construction and over a century of repeated maintenance dredging have altered the seafloor of the channels to a point that any *in situ* cultural resources would have been previously removed or destroyed. While no historic properties have been identified within the Federal Channels, currently available information indicates that the western end of the Bar & Entrance Channel contains one magnetic anomaly that may represent debris from a shipwreck, objects lost from a vessel, or materials from the initial construction of the North Jetty.

Outside of the channels, a known World War I-era shipwreck, the semi-armored Naval cruiser USS *Milwaukee* (CA-HUM-1751H), went aground on January 13, 1917. Its remains are visible at low tide near Samoa Beach, ***Figure 14***. Other known shipwrecks in the region are also located outside of the project's placement areas, ***Figure 15***.

Figure 14. USS Milwaukee at 0' MLLW tide, November 2025

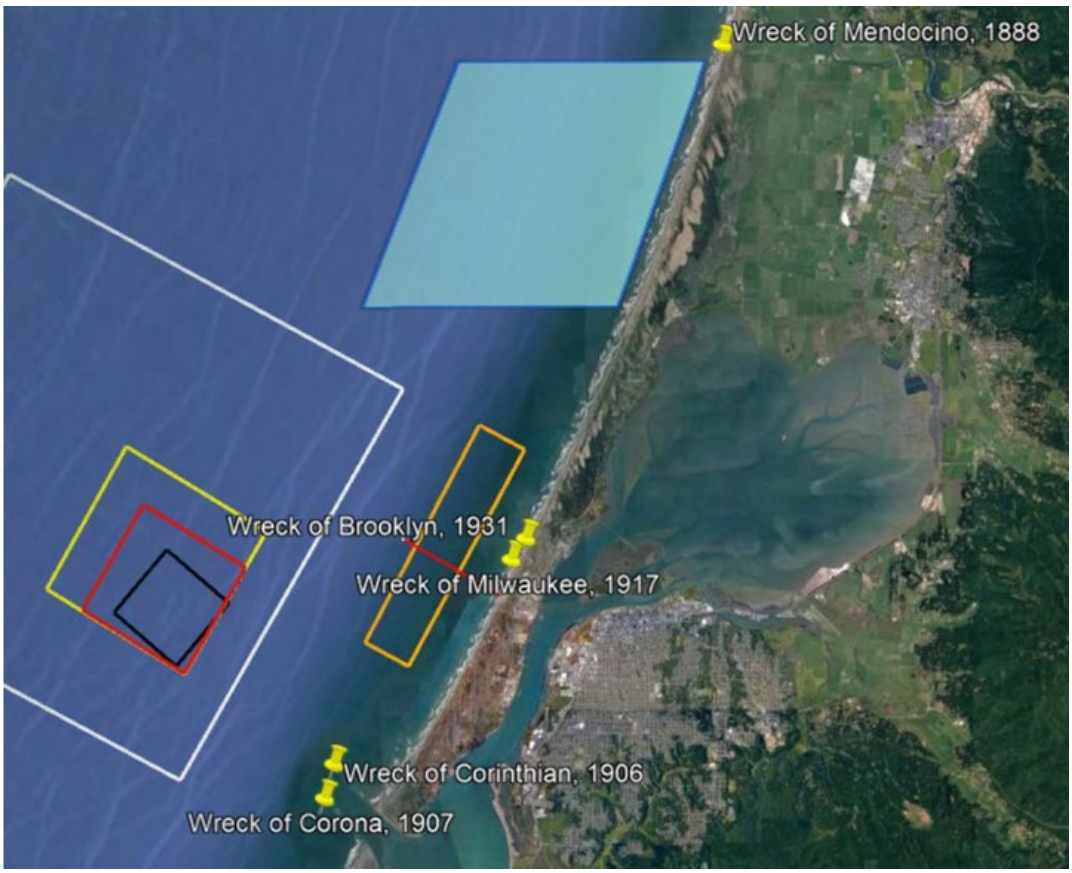

Figure 15. Locations of historic shipwrecks in relation to dredge material placement sites *(U.S. Environmental Protection Agency, 2020)*

Environmental Effects

Proposed Action: The Proposed Action has no potential to affect historic properties; therefore, *no impacts* are anticipated.

This determination is based on a multi-part rationale. First, dredging is confined to the removal of sediments that have accumulated since the last dredging cycle; these recently deposited sediments would not contain *in situ* archaeological resources. Second, placement of dredged material at the HOODS and HNPSA sites will occur on top of previously placed material, ensuring that the underlying native seafloor is not disturbed. Finally, the project does not include any demolition or new construction that could affect the historic setting of the built environment.

Per 36 C.F.R. § 800.3(a)(1), Tribal Consultation Letters were sent out to Tribes identified by the Native American Heritage Commission; Wiyot Tribe's Tribal Historical Preservation Officer, Mr. Ted Hernandez, responded to the letter and requested a consultation meeting, which was held in late February 2025. The Wiyot Tribe had no additional comments or concerns at that time.

In the extremely unlikely event of an inadvertent discovery, all ground-disturbing activities will immediately halt in the area of the find. A USACE archaeologist will ascertain the nature of the discovery in consultation with the SHPO to determine its significance and provide management recommendations pursuant to 36 C.F.R. §800.13. If the discovery involves human remains, the County Coroner and, if

applicable, the Native American Heritage Commission and the Most Likely Descendant will be contacted immediately, and all protocols under Cal. Pub. Res. Code § 5050.5 will be strictly followed.

No Action Alternative: The No Action Alternative would not involve seafloor disturbance from dredging or placement activities. Therefore, the No Action Alternative would have *no effect* on cultural resources.

5.5.2 Historic Monuments, Parks, Seashores, etc.

This category includes nationally designated landmarks, parks, seashores, wild or scenic rivers, and other protected areas.

Existing Environment

The Proposed Action area does not lie within the boundaries of any historic monument, park, national seashore, or other similarly designated protected area.

Environmental Effects

Proposed Action: Because no such resources exist within the project area, the Proposed Action will have *no impact* on them.

No Action Alternative: The No Action Alternative would also have *no impact* on these resources.

5.6 Socioeconomic Resources

5.6.1 Socioeconomics

Socioeconomics describes the relationship between economic activity and social life, focusing here on the economic benefits derived from the Port of Humboldt Bay and its reliance on navigable channels.

Existing Environment

The Port of Humboldt Bay is a vital economic engine for the region, supporting commercial shipping, a robust fishing industry (Dungeness crab, salmon, etc.), timber, aquaculture, and other maritime commerce. The viability of these industries depends directly on the safe and reliable navigation of the Federal Channels.

Environmental Effects

Proposed Action: The Proposed Action will have a *long-term beneficial impact* on the regional economy by ensuring the continued safe operation of the Port. While dredging activities may cause minor, temporary disruptions to commercial fishing, these effects are less than significant given the vast fishing areas available outside the immediate work zone. Overall, maintaining the channels is imperative for the economic viability of the region.

No Action Alternative: Under the No Action Alternative, the Federal Channels would progressively shoal, preventing commercial vessels from safely entering the bay. This would require vessels to light-load, increasing shipping costs, and would eventually halt deep-draft traffic altogether. This would cause *significant adverse impacts* to the local economy, including lost revenue for the Port, damage to the fishing and timber industries, and job losses.

5.6.2 Navigation

Navigation refers to the process of planning and directing the route of a ship or other form of transport.

Existing Environment

Humboldt Bay serves as a critical navigation route for commercial deep-draft vessels, fishing fleets, and recreational boaters. Safe and efficient passage through the Federal Channels is essential for all maritime traffic.

Environmental Effects

Proposed Action: The Proposed Action will result in a *long-term beneficial impact* to navigation. While the presence of dredging equipment may cause minor, temporary disruptions, the dredge operator (USACE and/or its contractors) will issue a Notice to Mariners, coordinate with the Harbor District, and use proper signals to ensure safety. These temporary measures are insignificant compared to the long-term benefit of maintaining safe, authorized channel depths**.**

No Action Alternative: The No Action Alternative would have *significant negative impacts* on navigation. Continued shoaling would reduce channel depths, restricting vessel access, increasing the risk of groundings, and potentially leading to the effective closure of the port to deep-draft traffic.

5.6.3 Public Health and Safety

Public health and safety in this context relate primarily to the prevention of maritime accidents and exposure to hazardous materials.

Existing Environment

The baseline environment includes risks inherent to maritime operations, such as ship collisions, groundings, and potential fuel spills.

Environmental Effects

Proposed Action: The Proposed Action will have an overall beneficial effect on public health and safety by significantly reducing the risk of ship groundings, which could lead to catastrophic fuel spills. While the dredging operation itself carries minor, temporary risks to worker safety, these are managed through established safety protocols, weather monitoring, and experienced crews, rendering them *less than significant*.

No Action Alternative: The No Action Alternative would cause *significant adverse effects* to public health and safety. The increased risk of ship groundings in a shoaled channel would create a much higher probability of a major hazardous material spill. Furthermore, shoaling could delay emergency response vessels, increasing response times to marine accidents or fires.

5.6.4 Hazardous and Toxic Materials

This category includes petroleum-based products such as diesel fuel, lubricants, and hydraulic fluids used to operate and maintain project equipment.

Existing Environment

Hazardous materials are routinely used and transported in the Humboldt Harbor & Bay as part of normal maritime operations.

Environmental Effects

Proposed Action: The use of hazardous materials on the dredge presents a very low risk of an accidental spill. This risk is managed through a comprehensive system of preventative measures and response planning. Therefore, impacts are expected to be *less than significant*.

This system is built on two key components: preventative Best Management Practices (BMPs) and a site-specific Spill Control Plan for response.

Best Management Practices are proactive measures designed to prevent spills from occurring. For the Proposed Action, this includes:

- **Fueling Operations**: Fueling, the highest-risk activity, will be conducted with pre-staged containment equipment (e.g., booms) ready for immediate deployment. All fuel transfer hoses and connections will be continuously monitored throughout the process.
- **Equipment Maintenance**: All equipment, including hydraulic lines and engine seals, will be inspected daily for leaks. A preventative maintenance schedule will ensure that hoses and seals are replaced before they fail.
- **Material Storage**: All hazardous materials, such as drums of lubricants and solvents, will be stored in designated locations with appropriate secondary containment to capture any potential leaks.

The Spill Control Plan is a detailed, operational document that dictates the immediate actions to be taken in the event of a spill, this includes:

- **Emergency Contacts and Notification**: A clear list of contacts (e.g., National Response Center, CalOES, Harbor Master) and step-by-step procedures for immediate notification.
- **Onboard Resources**: The location and inventory of onboard spill kits, which contain absorbent pads, containment booms, and personal protective equipment (PPE).
- **Proper Disposal**: The disposal of all contaminated materials will be carried out in accordance with regulations.
- **Contaminated Materials**: All contaminated materials will be disposed of properly at a licensed facility in accordance with applicable regulations.

With the implementation of these rigorous preventative BMPs and the detailed Spill Control Plan, the potential for a release is minimized, and the capacity for a swift, effective response is maximized.

No Action Alternative: Under the No Action Alternative, while no project-related hazardous materials would be used, the risk of a major spill would increase dramatically. A ship grounding in a shoaled channel could release thousands of gallons of fuel oil, representing a *significant adverse effect* compared to the minor risks of the Proposed Action.

5.6.5 Recreation

Recreation includes activities such as boating, kayaking, fishing, surfing, and windsurfing that occur in and around Humboldt Bay.

Existing Environment

Humboldt Bay is a popular destination for a wide range of water-based recreational activities enjoyed by both local residents and tourists.

Environmental Effects

Proposed Action: The Proposed Action will have temporary and *less than significant impacts* on recreation. The primary effect is the temporary, localized displacement of recreational users from the immediate work zone during dredging operations. For example, a kayaker might need to paddle a wider arc around the dredge, or a fishing boat might need to avoid a specific area for a few hours.

These impacts are minimized by several factors. The USACE will issue a Notice to Mariners to inform all boaters of the dredging locations and schedules, allowing them to plan their activities accordingly. The work zone will be clearly delineated, and ample alternative locations for all recreational activities remain available throughout the bay. Given that the dredging lasts only four to eight weeks per year and these management measures will be in place, the temporary displacement is not expected to significantly diminish the overall recreational experience.

No Action Alternative: Under the No Action Alternative, maintenance dredging would not occur, leading to *long-term adverse impacts* on recreation. Continued shoaling would progressively reduce navigational depths, creating hazards and limiting access to many areas of the bay, particularly for recreational boaters with fixed-keel sailboats or larger powerboats. This would degrade the quality and availability of boating and fishing opportunities, potentially concentrating activity in fewer accessible areas and diminishing the region's appeal as a recreational destination.

5.6.6 Aesthetics and Visual Impact

Aesthetics and visual resources relate to the public's perception of the natural beauty and character of the landscape.

Existing Environment

The Humboldt Bay region is known for its scenic beauty. The existing visual character of the bay itself is a mix of natural landscapes and a working industrial harbor, where deep-draft commercial vessels and fishing boats are a common sight.

Environmental Effects

Proposed Action: The presence of dredging equipment is a temporary visual change but is consistent with the existing visual character of a working harbor. Given that the dredge is similar in nature to other large vessels that frequent the bay and that its presence is temporary (four to eight weeks per year), the visual impact is considered *less than significant*.

No Action Alternative: The No Action Alternative would not introduce new visual elements into the environment, and the existing aesthetic character would remain. Therefore, *no impacts* are expected.

6 Summary of Coordination and Compliance

6.1 Public and Agency Outreach

A summary of key public and agency outreach activities is provided below:

- **July 2023**: The USACE hosted an interagency meeting to introduce the HNPPP, discuss permitting, and collect feedback.
- **November 2023**: The USACE hosted a public meeting to introduce the HNPPP to the public and collect feedback.
- **January 2024**: A supplemental information report to the 2020-2025 Humboldt Harbor & Bay operations & maintenance dredging Environmental Assessment, which included the HNPPP, was made available for agency review.
- **May 2024**: The North Coast Regional Water Quality Control Board (NCRWQCB), USEPA, and CCC approved the Humboldt Harbor & Bay Sampling & Analysis Plan for the sediment testing.
- **February 2025**: Tribal Consultation Letters were sent out to Tribes identified by the Native American Heritage Commission; Wiyot Tribe's Tribal Historical Preservation Officer, Mr. Ted Hernandez, responded to the letter and requested a consultation meeting, which was held in late February 2025. The Wiyot Tribe had no additional comments or concerns at that time.
- **February 2025:** The USACE receives all environmental approvals and permits for the HNPPP. This included: Water Quality Certification (NCRWQCB), Sediment Suitability (NCRWQCB, USEPA), Ocean Disposal Concurrence (USEPA), Negative Determination (CCC), Informal Consultation (USFWS), Biological Opinion (NMFS).
- **May 2025**: The USACE shares sediment testing results with agencies.
- **July 2025**: The USACE hosted an interagency meeting to discuss permitting for the HNPPP.
- **December 2025**: USGS presents preliminary monitoring results to interagency group.
- **January 2026**: The USACE submits all requests for environmental approvals and permits for the Proposed Action, agency response anticipated by March 2026.

6.2 Compliance with Environmental Laws and Regulations

National Environmental Policy Act (NEPA) of 1969 (42 USC § 4321 et seq). This Draft Environmental Assessment (EA) has been prepared in compliance with NEPA, Council on Environmental Quality (CEQ) regulations, and USACE planning regulations. A Finding of No Significant Impact (FONSI) will be signed, if applicable, upon conclusion of the public and agency review period.

Clean Air Act, as amended (42 USC §§ 7401 et seq). In accordance with 40 CFR § 51.853(c)(2)(ix), the USACE has determined that the Proposed Action is exempt from the requirement to prepare a conformity determination with the State Implementation Plan because the Proposed Action consists of maintenance dredging to authorized depths with disposal at approved sites.

Clean Water Act, as amended (33 USC § 1251 et seq). The HNPSA is located within state waters and is subject to Sections 401 and 404 of the CWA. For Section 401, the USACE received a Water Quality Certification in February 2025 and is pursuing an amendment for 2026-2030. For Section 404, the USACE, as the permitting authority, cannot issue a permit to itself. Therefore, the USACE is required to complete an effects analysis under the Section 404(b)(1) Guidelines and disclose these findings to the public. This EA also incorporates and fulfills the requirements of that 404(b)(1) analysis. Based on the

evaluation herein, the Proposed Action has been identified as the Least Environmentally Damaging Practicable Alternative (LEDPA). A detailed 404(b)(1) analysis is included in the appendix.

Rivers and Harbors Act of 1899 (33 USC § 403). Section 10 of the Rivers and Harbors Act requires a permit for any work occurring in or affecting navigable waters of the United States. However, as clarified in federal regulation (33 C.F.R. § 322.3(c)), USACE Civil Works projects that have been affirmatively authorized by Congress are exempt from this individual permitting requirement. The maintenance dredging of the Humboldt Bay Federal Channels is such a project. Therefore, the Proposed Action not only complies with the Rivers and Harbors Act by exemption but also directly supports its primary objective by maintaining the safety and navigability of the nation's waterways.

Coastal Zone Management Act of 1972 (16 USC § 1451 et seq). On December 29, 2025, the USACE requested a Negative Determination concurrence from the California Coastal Commission (CCC) for the Proposed Action through 2030.

Endangered Species Act (ESA) as amended (16 USC § 1531 et seq). On January 5, 2026, the USACE requested a one-year extension to the existing 2021-2025 Biological Opinion from the National Marine Fisheries Service (NMFS). On December 12, 2025, the USACE requested an updated Informal Consultation concurrence from the U.S. Fish and Wildlife Service (USFWS) for the Proposed Action through 2030.

Magnuson-Stevens Fishery Conservation and Management Act - Fishery Conservation Amendments of 1996, (16 USC § 1801 et seq) – Essential Fish Habitat (EFH). In response to NMFS's 2022 Essential Fish Habitat (EFH) Conservation Recommendations, the USACE has committed to working with NMFS and the Wiyot Tribe to identify and fund tidal restoration actions (up to $10,000) to offset prey losses from dredging. The USACE met with NMFS and the Wiyot Tribe in February 2024 to discuss opportunities, and coordination is ongoing.

Fish and Wildlife Coordination Act (16 USC § 661 et seq). Compliance with this act is achieved through the extensive coordination with USFWS, NMFS, and the California Department of Fish and Wildlife (CDFW). While these agencies have been active participants in coordination meetings, no formal recommendations under the FWCA have been received.

Migratory Bird Treaty Act (16 USC §§ 703-711). Compliance is achieved as no significant impacts to migratory birds are expected from the Proposed Action.

Marine Mammal Protection Act (16 USC § 1361 et seq). Compliance with this act is achieved through the ESA consultation process with NMFS. As detailed in ***Section 5.3.4***, no significant impacts to marine mammals are expected from the Proposed Action.

Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 USC § 1401 et seq). The placement of dredged material at the deep-water HOODS site falls under the jurisdiction of the MPRSA. The USACE received Conditional Ocean Disposal Concurrence for the Proposed Action from the USEPA on December 30, 2025, ensuring compliance.

National Historic Preservation Act (16 USC 470 and 36 CFR 800): Protection of Historic Properties. Executive Order 11593: Protection and Enhancement of the Cultural Environment. Archaeological and Historic Preservation Act of 1974, (16 USC § 469 et seq). The USACE has determined that the Proposed

Action has no potential to affect historic properties. This finding is based on the highly disturbed nature of the dredging areas and the placement of material at existing sites. In February 2025, the State Historic Preservation Officer (SHPO) concurred with the USACE's determination that the USS Milwaukee shipwreck is eligible for the National Register and that the project would have no adverse effect on this resource.

Abandoned Shipwreck Act of 1987, (43 USC § 2101 et seq). Compliance with the Abandoned Shipwreck Act is addressed through the NHPA Section 106 process. A known shipwreck, the semi-armored Naval cruiser USS Milwaukee, went aground on January 13, 1917, and its remains are visible near Samoa Beach. In February 2025, the California State Historic Preservation Officer (SHPO) concurred with the USACE's determination to treat the shipwreck as eligible for inclusion in the National Register of Historic Places under Criterion A. Furthermore, the SHPO concurred with the USACE's finding of no adverse effect to this historic property.

Submerged Lands Act, (Public Law 82-3167; 43 USC § 1301 et seq). The USACE exercises navigational servitude to conduct this action. A copy of this EA will be provided to the California State Lands Commission.

7 List of Preparers and Reviewers

This Environmental Assessment was prepared and reviewed by the following individuals:

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