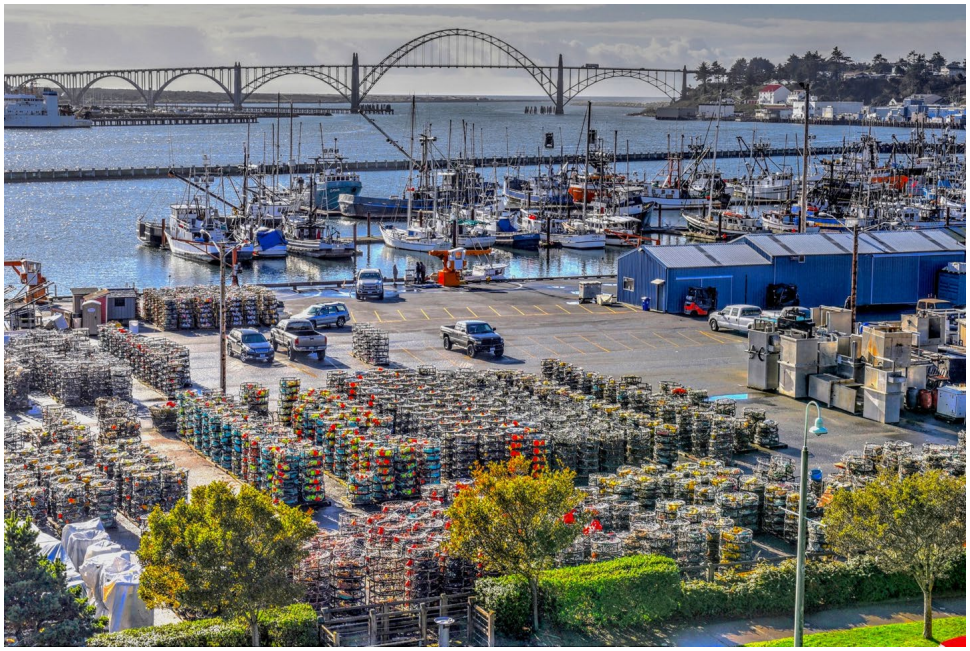
Newport Commercial Marina Navigation Improvements

Lincoln County, Oregon



Section 107 of the Continuing Authorities Program

Draft Integrated Feasibility Report and Environmental Assessment

US Army Corps of Engineers ®
Portland District

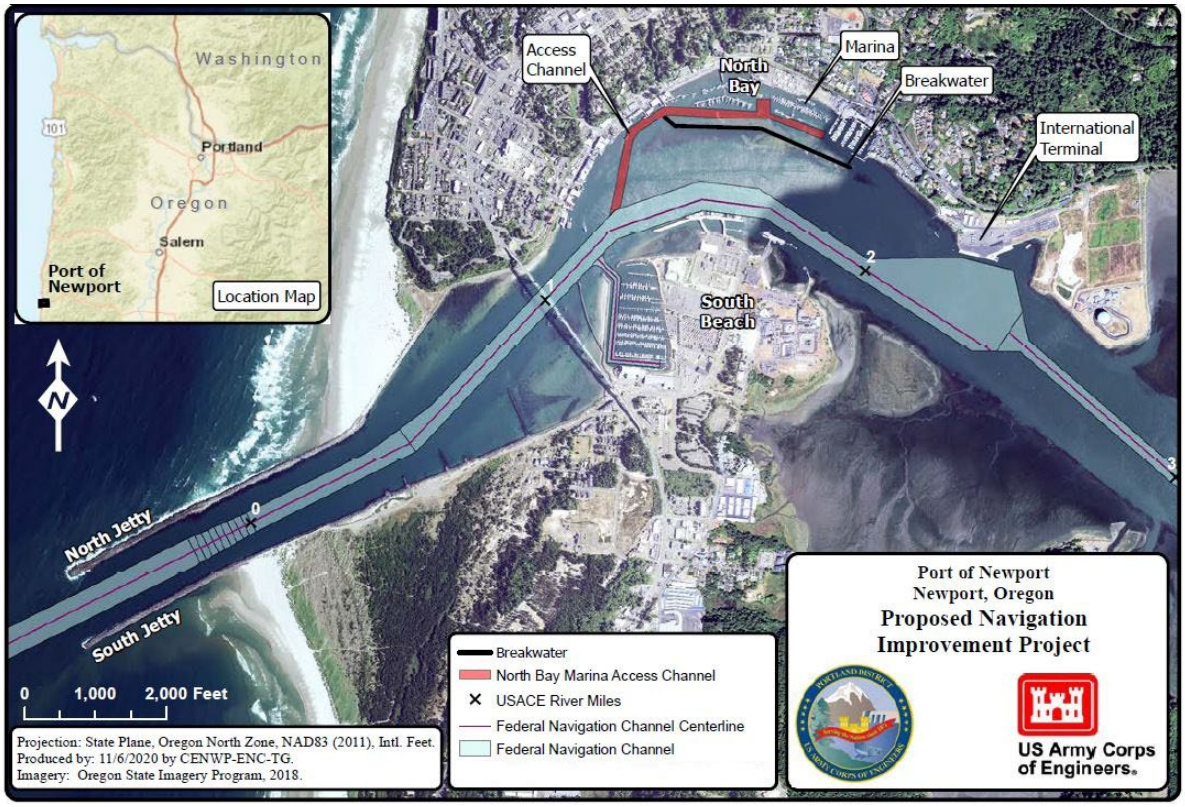
Port of Newport

JULY 2025

Executive Summary

Introduction

The purpose of this report is to recommend a plan to address navigation requirements in the Port of Newport (the Port) commercial fishing marina (Commercial Marina). The Commercial Marina is located within the Yaquina Bay, approximately river mile 2 of the Yaquina River, at Newport, Oregon. The Port, the non-Federal sponsor, requested assistance from the U.S. Army Corps of Engineers (USACE) to provide and maintain access for deep-draft vessels to the Commercial Marina.

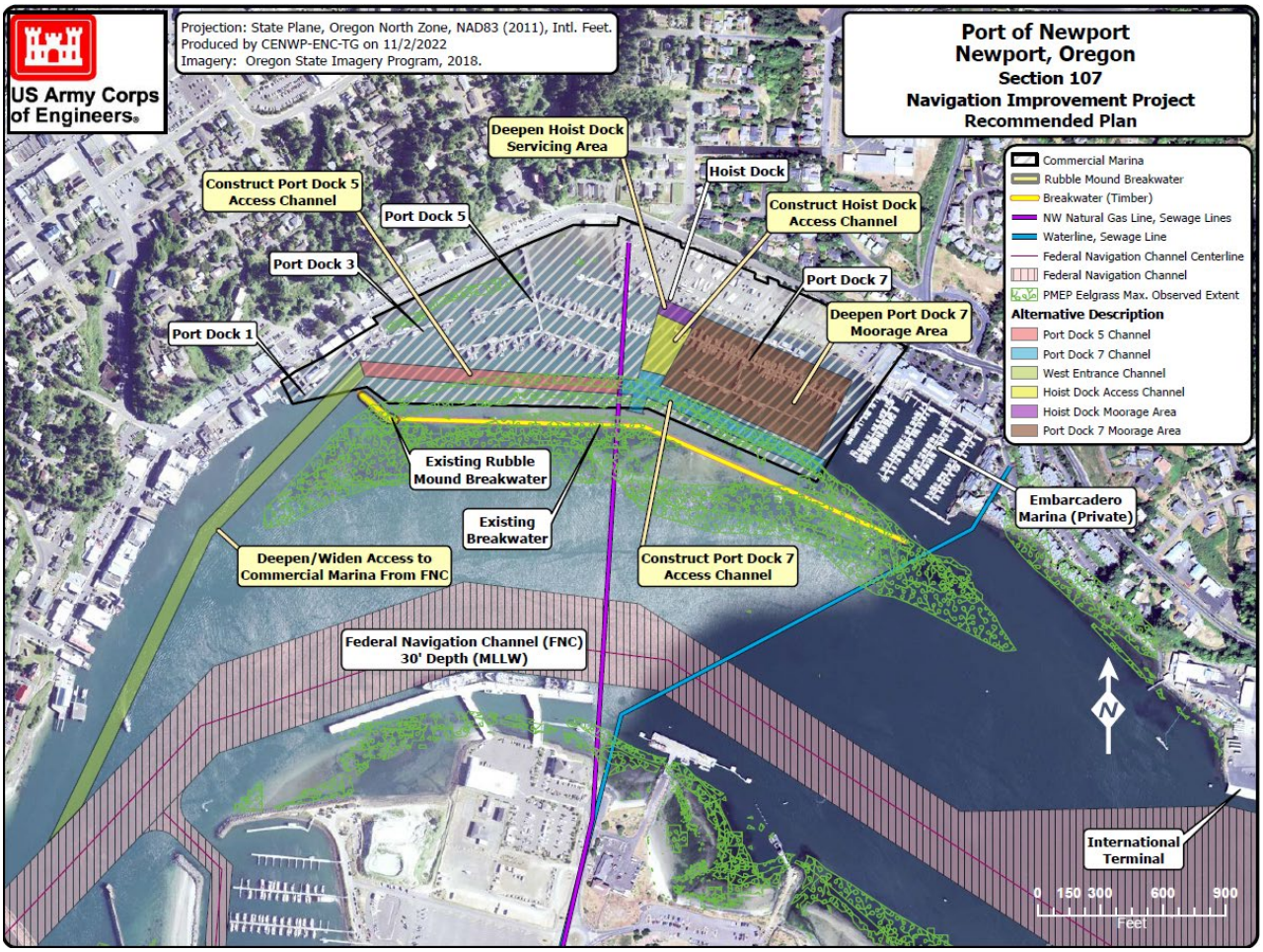


This report was prepared under the Continuing Authorities Program because the project constitutes a small river and harbor improvement project under Section 107 of the River and Harbor Act of 1960, codified as amended at 33 U.S. Code (U.S.C.) § 577.

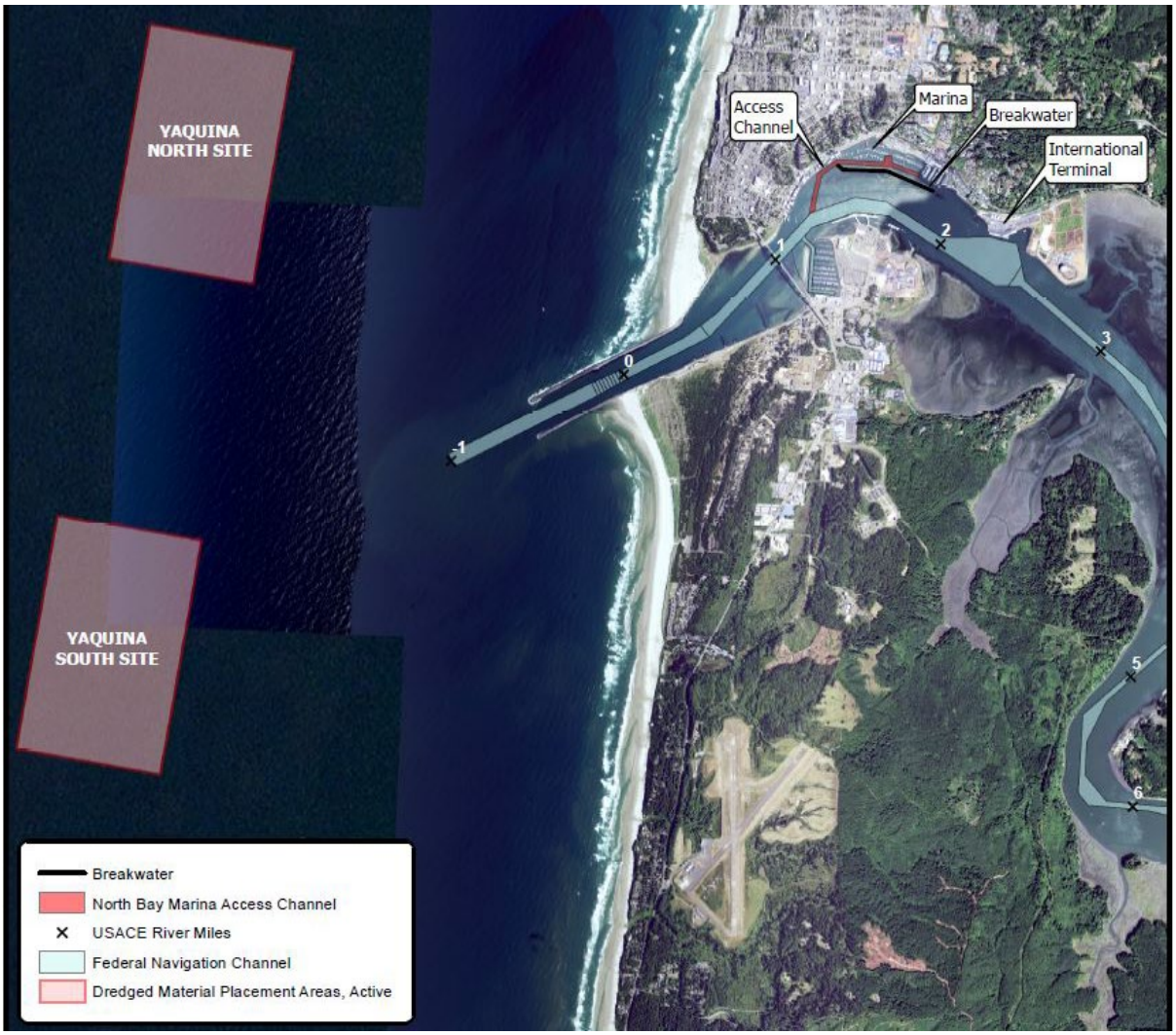
The purpose of the project is to improve access to and maneuverability within the Commercial Marina for the existing and emerging commercial fishing fleet's larger vessel sizes. The existing Federal Navigation Channels (FNCs), berthing, and moorage areas serving the Commercial Marina have had no significant modification or updates since construction in the 1940s and are now too shallow and narrow for the existing and emerging commercial fishing fleet's larger vessel sizes. As a result, these vessels encounter navigation and operational inefficiencies caused by inadequate vessel access to dock and moorage facilities that also need upgrading to serve the commercial fishing fleet more efficiently. These negative impacts will only get worse as the commercial fishing fleet continues to consolidate and convert to larger vessels unless

navigation conditions and dock layout and moorage areas can be improved.

USACE used an incremental approach to alternatives formulation through the deepening of different combinations of channel segments to the design vessel specifications. In addition to the No Action plan, the final array of alternative navigation improvement plans under consideration included deepening the existing western access channel and dredging a new eastern access channel. Alternatives included different combinations of in-marina channel deepening to include deepening to provide access to and improved moorage at the existing hoist dock. All alternatives included deepening the Port Dock 7 moorage area as a local service facility. The Recommended Plan includes as general navigation features deepening and authorizing the existing west access channel to a depth of -22 feet Mean Lower Low Water (MLLW) and all in marina channels, including access to the hoist dock, to a depth of -20 feet MLLW. These depths include -2 feet to accommodate advanced maintenance and over dredge depth. The Recommended Plan also includes deepening the hoist dock and Port Dock 7 moorage areas as local services facilities to a depth of -20 feet MLLW.



Finally, the Recommended Plan proposes placing all dredged material at the Yaquina Ocean Dredged Material Disposal Sites (ODMDS).



The estimated total first cost for project implementation is $13,475,000 at Fiscal Year 2025 (FY25) Price Level. Average annual project costs, including interest during construction are estimated at $505,000. The estimated average annual costs of future maintenance are $39,000which will be 100% at Federal expense. Average Annual Equivalent benefits are $642,000 with an average annual net benefit of $77,000 and a benefit-cost ratio of 1.1. By improving maneuverability within the commercial marina and improving safe harbor access during storms, the Recommended Plan has life safety benefit in addition to the economic benefits associated with increased access to local moorage for the growing fleet. Cost sharing for design and construction would be 90% Federal and 10% non-Federal. The fully funded project cost escalated to the anticipated estimate to the mid-points of construction in FY27 is $14,266,000.

The non-Federal study sponsor, the Port of Newport, has indicated its support for the Recommended Plan, which is the same as the Tentatively Selected Plan in the Draft Feasibility Report. Subject to report finalization, the Port has indicated its willingness to enter into a Project Partnership Agreement with the Federal Government for the design and construction of the Recommended Plan if the Project is implemented under Section 107.

Significant Resources/Environmental Considerations

Yaquina Bay eelgrass beds are present within the project area and are important habitat for birds, fish, crabs, and other aquatic invertebrates. Several species listed under the ESA have a potential to occur within an approximate 5 km radius of the Port of Newport. Proposed work is unlikely to adversely affect the majority of species, however, the potential destruction of existing eelgrass habitat could adversely affect Coho salmon (*Oncorhynchus kisutch*) and green sturgeon (*Acipenser medirostris*) and cause the destruction of essential fish habitat. Deepening of the in-marina channels would convert intertidal waters to subtidal waters and may result in the immediate loss of roughly 2.91 acres of eelgrass resulting in moderate, long-term, local adverse effects to aquatic resources and species. USACE is consulting with the National Marine Fisheries Service (NMFS) under the standard local operating procedures (SLOPES) IV Programmatic Opinion for In-Water Over-water Structures (NMFS Consultation No. 2011/05585, NMFS 2012). This decision for programmatic consultation was made in coordination with NMFS and is consistent with feedback provided during separate coordination under through the Fish and Wildlife Coordination Act (FWCA) process.

There are no known or documented historic properties or cultural resources located within or immediately near project vicinity. An unevaluated, linear breakwater structure originally constructed by the USACE in 1946 (and subsequently modified by the addition of a rubble mound structure in the late 1990s) is present in the Yaquina River between the Commercial Marina and Yaquina FNC, but the structure will not be further modified or affected by the proposed project. The overall area of potential effect for the undertaking is defined by the physical locations to be deepened, modified, and expanded as designated in the Recommended Plan, i.e., to include (a) the existing navigation channel, connecting channels and moorage areas proposed for modification within the Yaquina River/Newport Commercial Marina, and (b) the ODMDS offshore location where dredge material removed from the Marina locations is proposed to be placed. USACE will complete Section 106 of the National Historic Preservation Act (NHPA) obligations for this undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the Oregon State Historic Preservation Office and affected Tribes, prior to completion of the Finding of No Significant Impact (FONSI).

Plan Implementation

USACE would complete dredging of the entrance channel, in-marina channels, and moorage areas over a three-month period. If possible, work would occur within NMFS' preferred in-water work window (i.e., November 1 to February 1) to minimize potential effects to ESA-listed species from dredging and associated turbidity. However, given operational constraints, safety concerns, and likely weather delays during that preferred window, the Corps is proposing a variance to begin dredging in August or September. Pending NMFS response, the Corps may need a new biological opinion from NMFS to assess potentially greater or different effects to listed species above and beyond the SLOPES programmatic opinion (NMFS 2012). Regardless of the specific window, dredging would occur in tandem with material transport and disposed at the ODMDS site, with dredging and placement completed within a 3-month period.

Based on sediment testing results, the material to be dredged as a part of the project construction and operations and maintenance is suitable for open water disposal. Additionally, the ODMDS has available space. USACE, therefore, anticipates approval for open water

disposal of the dredged material at the ODMDS. Following construction completion, the project channels would be incorporated into the broader existing Yaquina River project. Maintenance dredging would be included in the routine Oregon coast clamshell dredging work at 5-year reoccurrence intervals.

A habitat suitability model was modified to assess and inform the potential need to mitigate for unavoidable adverse effects to eelgrass. Between approximately 2 and 4 acres of eelgrass would be in the footprint of channel and moorage area excavation depending on the alternative, so an eelgrass mitigation plan (Appendix D) has been developed to outline the steps that would be taken to offset unavoidable eelgrass loss. We assume the loss to eelgrass in channel and moorage excavation areas would be permanent, with channel maintenance activities precluding any long-term plant reestablishment. Three potential offset areas were identified based on submerged land areas that already fell under the purview of the Port, one parcel on the south side of the existing breakwater and two in Sally's Bend. The breakwater site had the highest estimated suitability and has been tentatively selected for mitigation implementation, with a goal to establish 2.5 acres of new eelgrass beds. The mitigation plan includes surveys, identification of reference beds, selection of donor beds (or a nursery source) from which to source eelgrass, selection of the most appropriate methods (e.g., using shoots and anchors, or perhaps turions) for transplanting based on site conditions. If possible, eelgrass would be sourced from the impact area slated for dredging. A qualified contractor would be selected to implement the mitigation plan. Active transplanting would occur between April and September and site monitoring would occur for five years thereafter. Monitoring would be completed to determine the extent to which transplanted beds are meeting performance criteria such as a minimum shoot density, plant survival, and areal coverage. Once the mitigation site meets success criteria, responsibility for long-term management of the mitigation area would be transferred to the Port. Neither USACE nor the Port would mitigate further for any eelgrass that may revegetate within the impact areas for which mitigation has already been completed.

Views of the Public, Agencies, Stakeholders, and Tribes

This is a draft report and has not undergone public review. The final report will be updated with a summary of the views of the public, agencies, stakeholders, and tribes based on received public review comments.

Reviews

This draft report underwent a USACE District Quality Control and legal review in April and May of 2025.

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Acronyms

AAEQ	Total Average Annual Equivalent
AIS	Automatic Identification System
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
AU	Assessment Unit
BCR	Benefit-Cost Ratio
CAA	Clean Air Act
CAP	Continuing Authorities Program
CAR	U.S. Fish and Wildlife Coordination Act Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	United States Code of Federal Regulations
CM	Construction Management
CTCLUSI	Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians
CTGR	Confederated Tribes of the Grand Ronde Community of Oregon
CTSI	Confederated Tribes of the Siletz Indians
CWA	Clean Water Act
cy	cubic yards
CZMA	Coastal Zone Management Act
dB	decibels
dBA	decibels on an A weighted scale
D&I	Design and Implementation Phase
EA	Environmental Assessment
ECSI	Environmental Cleanup Site Information
EDC	Engineering During Construction
EFH	Essential Fish Habitat
EM	Engineering Manual
EPA	Environmental Protection Agency
EQ	Environmental Quality
ER	Engineering Regulation
ESA	Endangered Species Act
FPPA	Farmland Protection Policy Act
FEMA	Federal Emergency Management Agency
FNC	Federal navigation channel
FONSI	Finding of No Significant Impact
ft	feet
FWCA	U.S. Fish and Wildlife Coordination Act
GHG	Green House Gas
GNF	General Navigation Feature
GRP	Gross Regional Product
HQUSACE	USACE Headquarters
IFR	Integrated Feasibility Report
ITA	Incidental take authorization
IWWW	In Water Work Window
LERRD	Lands, Easements, Rights-of-Way, Relocations and Disposal
LSF	Local Service Facility
m	meters

MBTA	Migratory Bird Treaty Act
MLLW	Mean Lower Low Water
MPRSA	Marine Protection, Research, and Sanctuaries Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAAQS	National Ambient Air Quality Standards
NED	National Economic Development
NEPA	National Environmental Policy Act
NFS	Non-Federal Sponsor
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Agency
NRHP	National Register of Historic Places
NWD	Northwestern Division
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODMDS	Ocean Dredged Material Disposal Site
O&M	Operations and Maintenance
OSE	Other Social Effects
PED	Project Engineering and Design
Port	Port of Newport
PR&G	Principals, Requirements, and Guidelines for Water and Related and Resource Implementation Studies
PSET	Portland Sediment Evaluation Team
Pub. L. No.	Public law Number
RECONS	USACE Online Regional Economic System
RED	Regional Economic Development
RHA	River and Harbor Act
RM	River Mile
SEF	Sediment Evaluation Framework for the Pacific Northwest
SIP	State Implementation Plan
TOC	Total organic carbon
USACE	United States Army Corps of Engineers
U.S.C.	Code of Laws of the United States of America
USFWS	United States Fish and Wildlife Service
VGN	Vessel General Permits
VOC	Vessel Operating Costs
WQC	Water Quality Certification

1 Introduction

The U.S. Army Corps of Engineers (USACE) Northwestern Division (NWD), Portland District prepared this Integrated Feasibility Report/Environmental Assessment (IFR/EA) for the Newport Commercial Marina Section 107 Navigation Project Study (the Project). This report presents potential solutions to improve navigation in and around the Port of Newport's commercial fisheries marina (Commercial Marina) in Newport, Lincoln County, Oregon (Figure 1-1). This study evaluates the feasibility of establishing a Federal navigation project in the Newport Commercial Marina, Newport, Oregon. This feasibility study analyzes alternatives for navigation improvements to the Commercial Marina, including potential waterway deepening. The study identifies and evaluate a full range of all reasonable alternatives including the No-Action Alternative. The improvements would increase the Commercial Marina's ability to accommodate safe and efficient vessel operations for a commercial fishing fleet that is consolidating and increasing vessel sizes. Lack of adequate depth and space for safe maneuvering has and will increasingly limit the use of the Commercial Marina by the increasing number of larger vessels. Navigation improvements would alleviate delays and moorage competition for the commercial fishing vessels using the Commercial Marina for offloading catch, servicing, fueling, and provisioning. They would also improve the Commercial Marina's ability to provide safe harbor during storm events.

The National Environmental Policy Act of 1969 (NEPA), Pub. L. No. 91-190, 83 Stat. 852 (codified as amended at 42 United States Code (U.S.C.) §§ 4321–4347) process for this EA began in 2021, following revisions to the Council on Environmental Quality's (CEQ) regulations implementing NEPA, 40 Code of Federal Regulations (CFR) 1500–1508. Therefore, this EA was initially subject to and complies with the NEPA implementing regulations as amended by CEQ and effective 14 September 2020. This EA also complies with the USACE procedures implementing NEPA for the Civil Works program, 33 CFR Part 230. CEQ has since rescinded all implementing regulations effective April 11, 2025. Several Executive Orders and related guidance regarding climate change analyses were also revoked prior to the finalization of this EA. To avoid delay, USACE has continued to rely on CEQ's regulations in completing this EA and generally retained NEPA analyses, including reasonably foreseeable effects associated with greenhouse gas emissions.

As an EA, this environmental document follows the format described in 40 CFR 1502.10 Recommended format. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the alternatives, including the recommended plan. All NEPA compliance sections are marked in the table of contents with an asterisk. A Draft Finding of No Significant Impact (FONSI) and recommendation by the district commander follows.

The study documented herein has been conducted jointly by USACE (the Lead Agency) and the non-Federal sponsor, Port of Newport (the Port). As the non-Federal sponsor, the Port contributes 50 percent of the total feasibility study costs in the form of cash or in-kind contributions; a feasibility cost sharing agreement was signed on 23 April 2021.

1.1 USACE Planning Process

This IFR/EA is organized to follow a general problem-solving format. The purpose of the feasibility report is to identify the plan that reasonably maximizes National Economic Development (NED) benefits, is technically feasible, and preserves environmental and cultural

values. The purpose of the EA portion of this report is to identify the proposed action, no action alternatives, and alternatives considered but eliminated from further environmental analysis; analyze the environmental effects of the proposed action and no action alternatives; and provide the USACE determination[1] of whether the anticipated effects of the proposed action are significant or not. The EA also describes measures that would be adopted to minimize the environmental impacts of the proposed action.

Development of the IFR/EA follows the USACE six-step planning process defined in the Principals and Guidelines for Water and Related and Resource Implementation Studies (P&G) and specified in Engineering Regulation (ER) 1105-2-103. These steps include:

1) identifying problems and opportunities,
2) inventorying and forecasting conditions,
3) formulating alternative plans,
4) evaluating alternative plans,
5) comparing alternative plans, and
6) selecting a plan.

This process is used to identify and respond to problems and opportunities associated with the Federal objectives and specific State and local stakeholder concerns. The six steps of USACE planning process each align with a NEPA requirement (Table 1-1). The planning steps are listed below with the document chapter and NEPA element to which they relate:

Table 1-1 Overview of IFR/EA

Planning Step	Document Section	Analogous NEPA Requirement
Step One – Specify Problems and Opportunities	Appears in Section 1	Described in the NEPA purpose and need for action (Section 1.5)
Step Two – Inventory and Forecast Conditions	Section 2 describes existing and future without project conditions of the Commercial Marina facility and its use and provides a summary overview of the existing and future without project environmental conditions.	Section 4 describes the affected environment under NEPA, providing a detailed description of existing conditions. Section 4 also describes the environmental consequences of the NEPA no-action alternative over the period of analysis, which is analogous to the future without-project condition of these resources.
Step Three – Formulate Alternative Plans	Appears in Section 3 in the description of the formulation of alternative plans and the screening process.	A reasonable range of alternatives, including a "no action" alternative, as required by NEPA is described in Section

[1] The determination of whether the anticipated effects of the proposed action are significant or not is considered preliminary until review and comments from other agencies, organizations, and the interested public have been solicited and any comments received have been addressed.

Planning Step	Document Section	Analogous NEPA Requirement
		3.
Step Four – Evaluate Effects of Alternative Plans	Appears in Section 3, with a comparison of the effects of alternative plans.	Section 4 describes the environmental consequences of the alternatives over the period of analysis.
Step Five – Compare Alternative Plans	Appears in Section 3 with a comparison of the alternative plans.	Section 4 describes the environmental consequences of the alternatives over the period of analysis.
Step Six – Select Tentatively Selected Plan (TSP)	Appears in Section 3 and 5 and includes details of the TSP.	The agency preferred alternative and NEPA proposed action (the TSP) appears in Section 3 and 5.

As a part of identifying the proposed action, USACE and the Port developed a number of alternative plans for improving access in and out of and maneuverability within the Commercial Marina and compared them with the “no action alternative.” This allowed for the ultimate identification of the TSP or NED Plan. The NED plan reasonably maximizes economic benefits to the Nation compared to the costs, considering the cost-effectiveness implementing other alternatives. Figures, plates, and appendices have been furnished to provide sufficient detail to allow review of the existing features and the TSP.

1.2 Study Authority*

This study is authorized by Section 107 of the River and Harbor Act (RHA) of 1960 (Public law Number (Pub. L. No.) 86-645, 33 U.S.C. 577, as amended. Section 107 provides authority for USACE to improve navigation including dredging of channels, anchorage areas, and turning basins and construction of channels, jetties and groins, and other general navigation features in partnership with non-Federal government sponsors such as municipalities, counties, special chartered authorities, or units of state government. Section 107 is one of the ten legislative authorities under which USACE is authorized to plan, design, and construct certain types of water resources projects that are of limited scope and complexity, without additional and specific congressional authorization. These authorities are called the Continuing Authorities Program (CAP) when referred to as a group.

1.3 Study Area*

The proposed action is located in Newport, Lincoln County, Oregon

Yaquina River, River Mile 2

Section(s) 8 and 9 of Township 11S, Range 11W

Latitude: 44.631519 Longitude: -124.046097

The study takes place at the Port's Commercial Marina on the north shore of the Yaquina Bay, approximately river mile 2 of the Yaquina River, at Newport in the mid-coast region of Oregon (Figure 1-1). The Yaquina River is 59-miles long with its headwaters in the Coast Range mountains. It flows along the county line between Benton and Lincoln Counties west of the Willamette Valley to its confluence with the Pacific Ocean near the City of Newport.

There is an existing Federal navigation channel (FNC) along the Yaquina River directly south of the Commercial Marina. Vessels access the Commercial Marina from the FNC via a natural channel that exits the marina's west entrance (Figure 1-1). An in-marina channel extends east from the west entrance roughly parallel to the shore within an existing USACE breakwater structure that protects the marina. The in-marina channel terminates before an existing, privately-owned recreational marina known as the Embarcadero Resort, which is not part of the proposed project. Another in-marina channel perpendicular to the one running along the breakwater provides access to the Port's hoist dock.

The study area is the area within which project impacts may occur. This project's study area and its existing conditions include the Yaquina Bay and River, including the Federally authorized navigation channel and the Yaquina Bay shorelines bounded by Highway 101 crossing on the west and the International Terminal on the east (Figure 1-1). The Study also includes the two Ocean Dredged Material Disposal Sites (ODMDS) located just west of the reef (Figure 1-2).

The main users of the Commercial Marina are commercial fishermen who use the Port facilities to load/unload their goods and service their vessels for maintenance. The City of Newport also boasts several commercial fish processing facilities who rely on the Port's fishermen. Per the Oregon Department of Fish and Wildlife (ODFW) annual data release of Oregon port landings, the Port of Newport landed approximately 97,230,000 pounds worth approximately $62,000,000 in 2023 (ODFW 2023). Other stakeholders include operators and users of the adjacent international shipping terminal (International Terminal - Figure 1-1). Another allied interest is the upriver Port of Toledo, which performs ship maintenance. Affording better access at the Commercial Marina could have a synergistic effect with the Port of Toledo.

The Port submitted a letter to USACE requesting assistance under Section 107 because the Port is unable to meet the needs of the current fishing vessel fleet due to insufficient depth and width for safe maneuvering within the Commercial Marina. Further, from a regional economic development perspective, the Port is also becoming less able to meet their mission of promoting and supporting creation of new jobs and increased economic development as it is unable to accommodate additional commercial fishing vessels without improving access into and maneuverability within the Commercial Marina.

Figure 1-1. Location of Port Study Area

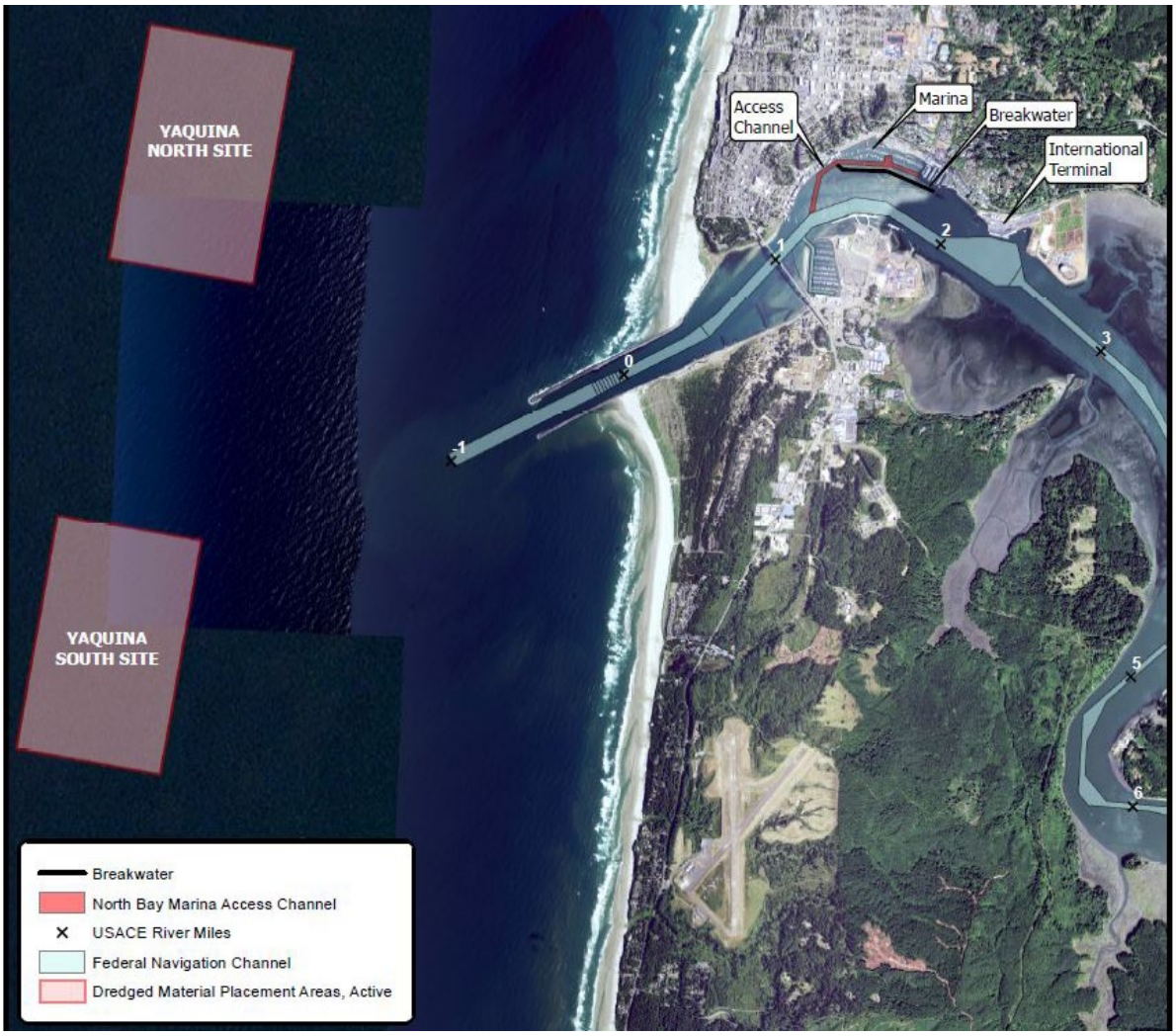

Figure 1-2. Yaquina North and South Ocean Dredged Material Disposal Sites and Entrance into Port of Newport

1.4 Background and History

Improvement of the entrance to Yaquina Bay began following the River and Harbor Appropriation Act of June 14, 1880. This is one of USACE's oldest navigation projects on the Oregon coast and includes the two Yaquina Bay FNCs (northern and southern), jetties, turning basin, breakwater, and small-boat mooring basin within the breakwater (Figure 1-3).

1.4.1 Existing Authorized Projects

Figure 1-3 details the Yaquina authorized projects at Newport around the Commercial Marina.

The original navigation project at Newport, authorized by Congress under the River and Harbor Act (RHA) of March 2, 1919 (based on plans in House Document 65-109), included the restoration and extension of two high tide rubblemound jetties constructed under previous projects, rock removal at the entrance, and dredging up to the railroad terminus at Yaquina (House Document 109, 65th Congress, 1st Session). Restoration of the jetties was completed in

1934. Extension of the north jetty seaward 1,000 feet was authorized in 1937 (RHA of August 26, 1937, Senate Committee Print, 75th Congress, 1st Session) and completed in 1940. Present lengths of the north and south jetties are 7,000 and 8,600 feet, respectively.

A 26-foot navigation channel of suitable width across the entrance bar, a 20-foot navigation channel 300 feet wide along the south side of the bay for a distance of about 2 miles, including a turning basin 22 feet deep, 1,000 feet wide and 1,200 feet long, and continuing maintenance for the existing northern 18-foot deep and 200-foot wide channel extending from Coast Highway Bridge along the Newport water front to the turning basin were authorized in 1945 (Senate Document 119, 77th Congress, 1st Session) and were completed in 1949.

A new small-boat mooring basin dredged to depth of 10 feet—over, and displacing a portion of, the historical 18-foot deep channel along the water front—and a protective breakwater was authorized under RHA of July 24, 1946 (Senate Document 79-246, including the June 13, 1946 Report of Chief of Engineers).

An entrance channel 40 feet deep and 400 feet wide for a channel 30 feet deep and 300 feet wide from the end of entrance channel to McLean Point, and a 30-foot turning basin 900 to 1,200 feet wide and 1,400 feet long adjacent to McLean Point were authorized in 1958 (Senate Document 8, 85th Congress, 1st Session). Repair and extension of the north jetty was completed in 1960; dredging of channels and the turning basin was completed in 1968; and the south jetty was extended in 1971. In 1977, a small boat basin and associated access channel on the south side of the bay (aka South Beach Marina Access Channel) was constructed under authority contained in Section 107 of the 1960 River and Harbor Act, as amended.

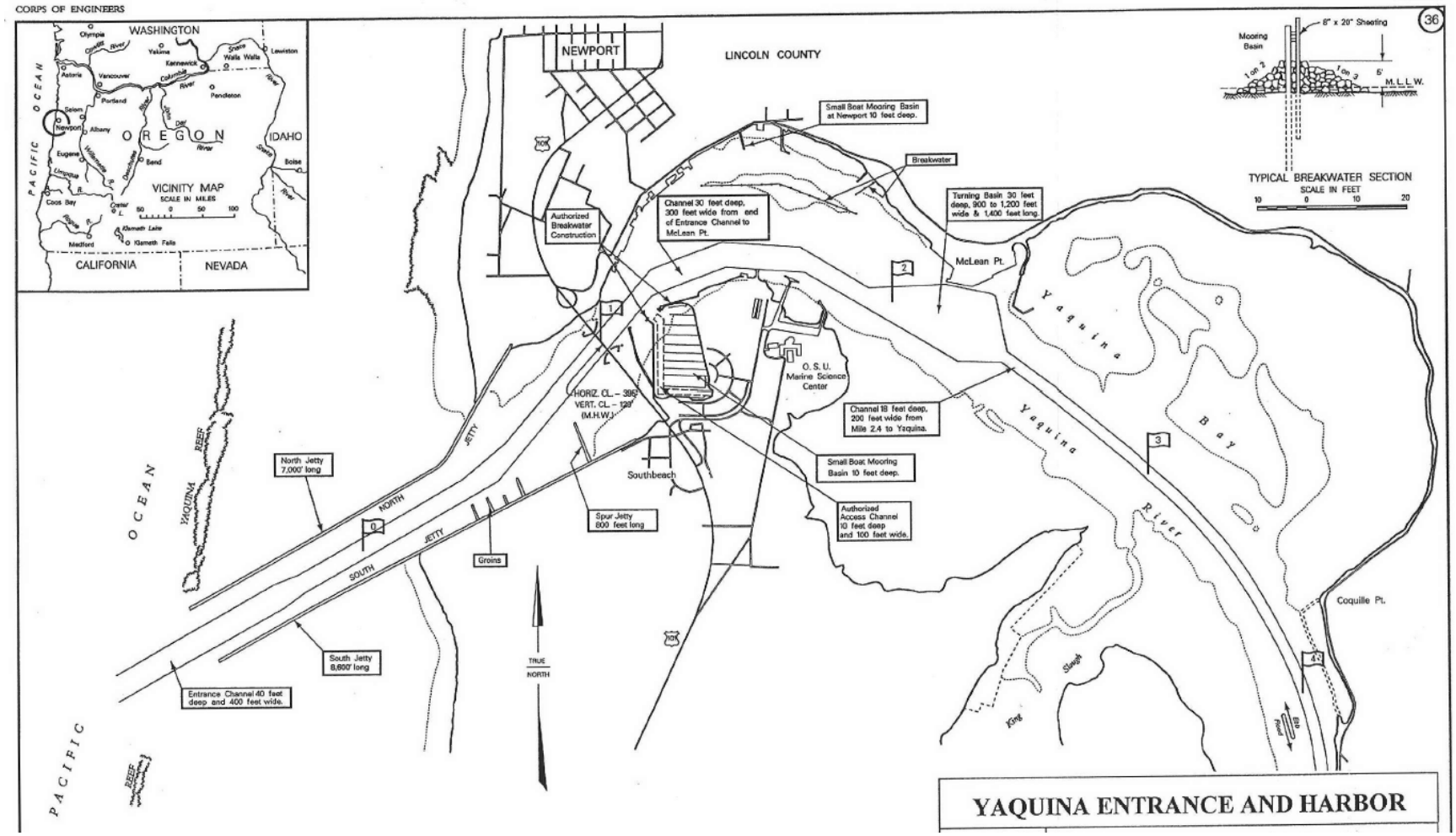

Figure 1-3. Detail of the Newport authorized project

The navigation channel in the lower estuary is regularly dredged to maintain a maximum depth at mean low low water (MLLW) of approximately 40 feet at the entrance to the bay, and 30 feet from River Mile 0 to the end of the turning basin at McLean Point (River Mile 2.4). The 18-foot channel depth from River Mile 2.4 to River Mile 4.4 is maintained by infrequent dredging. Tides must be utilized for vessels traveling on the river above River Mile 4.4 with drafts that exceed ten feet.

In 1946, USACE completed construction of the 10-foot deep small-boat mooring basin and the timber breakwater on the north side of the bay. The mooring basin (aka marina) accommodates commercial fishing boats working fisheries including halibut, salmon, and crab. Establishment of the mooring basin practically displaced the historical northern FNC, such that there no longer remains a Federally maintained navigation channel to, from, or within the marina. The protective breakwater was later modified in the late 1990s by adding the rubblemound structure on the west end as part of a CAP 107 project. Currently, navigation aids are only located at the marina entrance and one buoy at the junction of the deep-draft Federal channel and the natural river channel that leads to the marina's west entrance. The dock and moorage areas have not been substantially updated since the 1960s. Additional deepening of the Yaquina FNC entrance channel to 40 feet was authorized in 1958 and completed in 1969.The access channel into the commercial fishing marina was not improved as part of this effort. An access channel and this mooring basin within the breakwater (the Commercial Marina) are the areas proposed for improvement as part of this study. The Commercial Marina is privately owned by the Port.

To improve fleet efficiency and capabilities as well as to take advantage of current and new sustainable fishing opportunities, the local commercial fishing fleet has been converting to larger vessels and consolidating. Following USACE's construction of the small-boat mooring basin, and later Port improvements to the present Commercial Marina, the fleet of commercial fishing vessels accessing the facilities were typically 18-40 ft long with beam (width) ranging from 7-14 ft. Within the recent decades, the fleet has been gradually undergoing changes that include retrofitting vessels to allow them to hold a larger catch per trip. This requires adding parts such as pontoons that allow these retrofitted vessels to remain at sea longer before needing servicing. In addition, the fleet of commercial fishing vessels has been consolidating such that smaller vessels effectively sell their catch or their catch limits to larger-sized vessels. Therefore, more and more of these larger-sized vessels have been calling to port at the Commercial Marina seeking moorage for servicing and to access the hoist docks to off-load their catch to the fish processing facilities.

In response to these changing needs, the Port submitted a letter on February 22, 2019, to the Portland District requesting federal assistance under Section 107 to establish a General Navigation Project in the Port's Commercial Marina to improve the access into, out of, and within their commercial fishing marina in the Yaquina Bay at Newport, Oregon.

1.4.2 Relevant Prior Studies and Reports

USACE, June 2015. Yaquina Bay and River Maintenance Dredging Environmental Assessment.

- Describes the continued maintenance dredging as part of the Project once every five to eight years and updates prior environmental Yaquina Bay and River Maintenance Dredging assessments. The analysis finds that the Preferred Alternative would not

substantially affect the quality of the environment.

USACE and U.S. Environmental Protection Agency, August 2012. Yaquina Bay, Oregon, Ocean Dredged Material Disposal Sites Evaluation Study and Environmental Assessment.

- Provides documentation in support of final designation by EPA of two ODMDSs needed for long-term use by the authorized Yaquina Bay navigation projects. Demonstrates the need for designation of two ocean disposal sites, the North ODMDS and South ODMDS, are proposed. Due to their size, disposal capacity was considered sufficient for approximately 20 years or more for each.

USACE, January 1996. Newport North Marina, Yaquina Bay, Oregon – Design for Wave Protection, Technical Report CERC-96-2, Waterways Experiment Station.

- A 1:60 scale (undistorted) three-dimensional hydraulic model was used to investigate the design of proposed breakwater modifications at Newport North Marina, Yaquina Bay, OR, with respect to wave and current conditions in the harbor and sediment patterns at the site. Proposed improvements consisted of breakwater modifications at the marina entrance. Test results led to the following conclusions: (a) Existing conditions are characterized by rough and turbulent wave conditions during periods of storm wave attack. Wave heights in excess of 0.9 meters (m) (3 feet (ft)) occurred in the marina mooring areas. (b) Preliminary tests for the three originally proposed design alternatives indicated that none of the test plans would meet the original 0.3 m (1ft) criterion in the marina mooring area.

USACE, May 1996. Newport North Marina Breakwater, Yaquina Bay, Oregon, Final Detailed Project Report & Environmental Assessment." pursuant to the authority contained in Section 107 of Public Law 86-645, as amended, 33 U.S.C. § 577 (1986)

- Resulted in the construction of the rubble mound breakwater extension on the west end of the existing timber breakwater.

USACE, 1994. Seismic and Jet Probe Investigation.

- Findings were that the jet probing “generally reached depths greater than 20 ft below MLLW, with four probes deeper than 25 ft below MLLW.”

Minor, R., Hemphill, B.E., and Greenspan, R.L. 1992. Archaeological Investigations at the Oregon Coast Aquarium, Yaquina Bay, OR. Report to Oregon Coast Aquarium. Heritage Research Associates, Inc. Report No. 120.

- In response to the discovery of Native American ancestral human remains during construction of the Oregon Coast Aquarium (OCA), small scale archaeological investigations were carried out at the OCA property in June-July 1991. Additional ancestral human remains, prehistoric and historic artifacts, faunal remains, shell midden material and sediment samples were recovered during the investigations. The ancestral human remains were returned to the Confederated Tribes of Siletz Indians for reinterment in July 1991. Recovered artifacts, faunal remains, sediment samples and field notes were taken to Oregon State Museum of Anthropology at University of Oregon in Eugene for further analysis and curation after completion of the field work. The results

of the investigations helped to establish a more-refined cultural chronology and understanding of prehistoric settlement and activities in the Yaquina Bay portion of the north-central Oregon Coast.

USACE, 1976. Environmental Impact Statement for Operation and Maintenance of Channels and Breakwaters in Yaquina Bay and River.

- Summarizes a large volume of information obtained during an assessment of the environmental resources and probable effects of USACE operation and maintenance projects on those resources. Contains summaries of historical earthquake data, climatological data, sediment and water quality data, Oregon air quality standards, and so on in the Yaquina Bay area.

1.5 Purpose and Need for Action*

The purpose of the project is to improve access to and maneuverability within the Commercial Marina for the existing and emerging commercial fishing fleet's larger vessel sizes. The existing navigation channel, berthing, and moorage areas serving the Newport Commercial Marina have had no significant modification or updates since construction in the 1940s and are now too shallow and narrow for the existing and emerging commercial fishing fleet's larger vessel sizes. As a result, these vessels encounter navigation and operational inefficiencies caused by inadequate vessel access to dock and moorage facilities that also need upgrading to serve the commercial fishing fleet more efficiently. These negative impacts will only get worse as the commercial fishing fleet continues to consolidate and convert to larger vessels unless navigation conditions and dock layout and moorage areas can be improved.

1.6 Problems and Opportunities

The existing and already emerging larger commercial fishing fleet vessels have inadequate navigation access due to shallow water depths to the Commercial Marina and the local service facilities within. These conditions cause navigation and operational inefficiencies and lost opportunity to serve the commercial fishing fleet, increasing operating costs for vessel owners and the Port which results in the following negative impacts:

- Increased cost of goods and services
- Increased risk of vessel damages
- Decreased operation safety transiting to, from and within the marina
- Decreased safe harbor moorage area during storms

Unless navigation access can be improved, these negative impacts will only get worse as the commercial fishing fleet continues to consolidate and convert to larger vessels.

Navigation improvements should be compatible with the Port's existing capital improvement plan for local service facilities. Improved navigation access to and from the marina, and within the marina to local service facilities will provide the following opportunities:

- Promote and support the creation of new jobs and increase regional economic

development.
- Improve efficiency of the current and future fleet of vessels transiting the marina over the study period (through 2078).
- Improve the waterway's capacity for safe transit of commercial and recreational vessels.
- Provide for increased efficiency accessing moorage in the marina.
- Improve navigation access within the marina to the hoist dock berthing area and other moorage areas, especially at Port Docks 5 and 7.
- Provide berthing to the fleet of vessels fulfilling the processing capacity of the local industry.
- Provide beneficial use of dredged material.
- Minimize maintenance expenditures over the 50-year period of analysis.

1.7 Objectives and Constraints

The Federal objective of water and land resources planning is to contribute to NED in a manner consistent with protecting the Nation's environment. NED features increase the net value of goods and services provided to the economy of the United States as a whole. Only benefits contributing to NED may be claimed for Federal economic justification of a project. Water resource planning must be consistent with NED objectives and must consider engineering, economic, environmental, and social factors. The following study objectives are guidelines for developing alternative plans and are used to evaluate those plans.

The goal of the study is to improve the navigation access conditions to, from, and within the marina to the extent practicable for the existing and the already emerging fleet. The planning objectives for the study include the following:

- **Objective 1** – Reduce or eliminate transit inefficiencies due to inadequate depths of the entrance and in-marina channels and inadequate mooring within the Newport Commercial Marina for larger vessels.
- **Objective 2** – Improve safety conditions within the Newport Commercial Marina by reducing congestion and decreasing the likelihood of grounding.
- **Objective 3** – Improve access to hoist dock facilities that currently have inadequate depths for larger vessels.
- **Objective 4** – Minimize future maintenance cost and frequency of dredging in the FNC and Port maintained areas
- **Objective 5** – Improve safe harbor capabilities.
- **Objective 6** – Avoid and minimize effects to sensitive aquatic habitats to the maximum extent practicable.

Constraints are restrictions that limit the planning process related to laws, policies, and resource availability. There are no known legal constraints, but universal constraints included minimizing adverse impacts to threatened and endangered species and essential fish habitat, cultural resources, food security, and access to natural resources.

The constraint below represents restrictions on the project scope that would affect the constructability of the project due to financial, ecological, environmental, or hydrological limitations. This constraint represents a condition to be avoided or minimized to the extent possible when formulating management measures and alternatives.

Constraint – The recommended plan will need to maintain at least partial access to the marina and all commercial services during implementation.

Planning considerations are identified and considered as the study progresses. These considerations may help guide formulation, but plans were not necessarily selected or eliminated based on these items. Considerations in alternative development included:

- Future design channel stability.
- Minimization of required maintenance frequency
- Avoidance of or minimized impacts to existing infrastructure, including to subsea floor utilities in the east end of the Commercial Marina.
- Minimization of design impact on wave energy in the marina.
- Minimization of breakwater modifications.
- Minimization of localized increases to turbidity during construction.
- Minimization of marine mammal disturbance during construction.

Additionally, modifications to the existing breakwater needs careful consideration to reduce risk of exceeding the Federal cost limits for CAP projects, although there are options to address if this concern is realized. There is concern that some modification to the existing breakwater may be needed if adequate safety factors cannot be achieved if the entrance channel is made wider and deeper. The CAP federal cost limit of $15 million could be exceeded if modifying the breakwater is required.

2 Existing and Future Without Project Conditions

The following section describes the existing and future without project conditions of the Commercial Marina facilities and their use as well as the most significant environmental and socio-economic conditions.

2.1 Period of Analysis

The study's period of analysis for economic benefits and constructed features is 50 years per guidance in ER 1105-2-103. Assuming the proposed project is expected to be operational in the spring of 2028, the planning period of analysis for the forecast of the future without and with project condition is 2028-2078.

2.2 Existing Conditions

Existing conditions, which serve as the basis for the characterization of problem identification and projection of future without project conditions, are described in this section. More detailed descriptions of environmental resources for NEPA compliance can be found in Section 4 under the affected environment descriptions for each resource area.

2.2.1 Facilities and Infrastructure

The Port provides moorage, storage space, and work areas for commercial vessels at the Commercial Marina and the International Terminal. Newport is served by two main highways: U.S. 20, running east-west between Newport and the Willamette Valley, and Highway 101, running north-south along the coast. Port facilities are easily accessible from Highway 101. The Commercial Marina consists of several Local Service Facilities (LSFs) including four docks (Port Docks 1, 3, 5 and 7) with over 200 slips and related facilities, a hoist dock and storage yard, and service dock referred to as the Swede's Dock (Figure 2-1). The Port Docks consist of the following:

- Port Dock 1: 70-foot pier accommodating up to 100-foot vessels.
- Port Dock 3: 285-foot long with 570 feet side tie area.
- Port Dock 5: 26 slips for 42-foot vessels and 22 slips for 65 to 80-foot vessels.
- Port Dock 7: 98 slips for 34-foot vessels and 2 slips for 44-foot vessels.

The hoist dock and yard are located to the west of Port Dock 7. The hoist dock includes two jib-type swing hoists and two crane hoists. The dock is approximately 220 ft by 30 ft, with 30-foot concrete sections on each end (built in the late 1980s) and a 200-foot timber-supported center. The storage yard consists of storage areas for crab pots and other equipment, portable offices for fish buyers, and Port shop building. The eastern end of the yard, which is upland and away from the shore, includes the Port office building and restrooms. There are roughly 60 parking spaces that serve Port Dock 7 and the Port office.

The Port also includes the International Terminal that provides over 800 linear ft of berthing for deep-draft vessels at two berths (Figure 2-1). A hoist is located at the western berth. The terminal currently serves the distant water fleet that homeports at Newport. There is also an existing, privately-owned recreational marina known as the Embarcadero Resort within the breakwater on the eastern most side of the marina that is not a part of the project area (Figure 2-1).

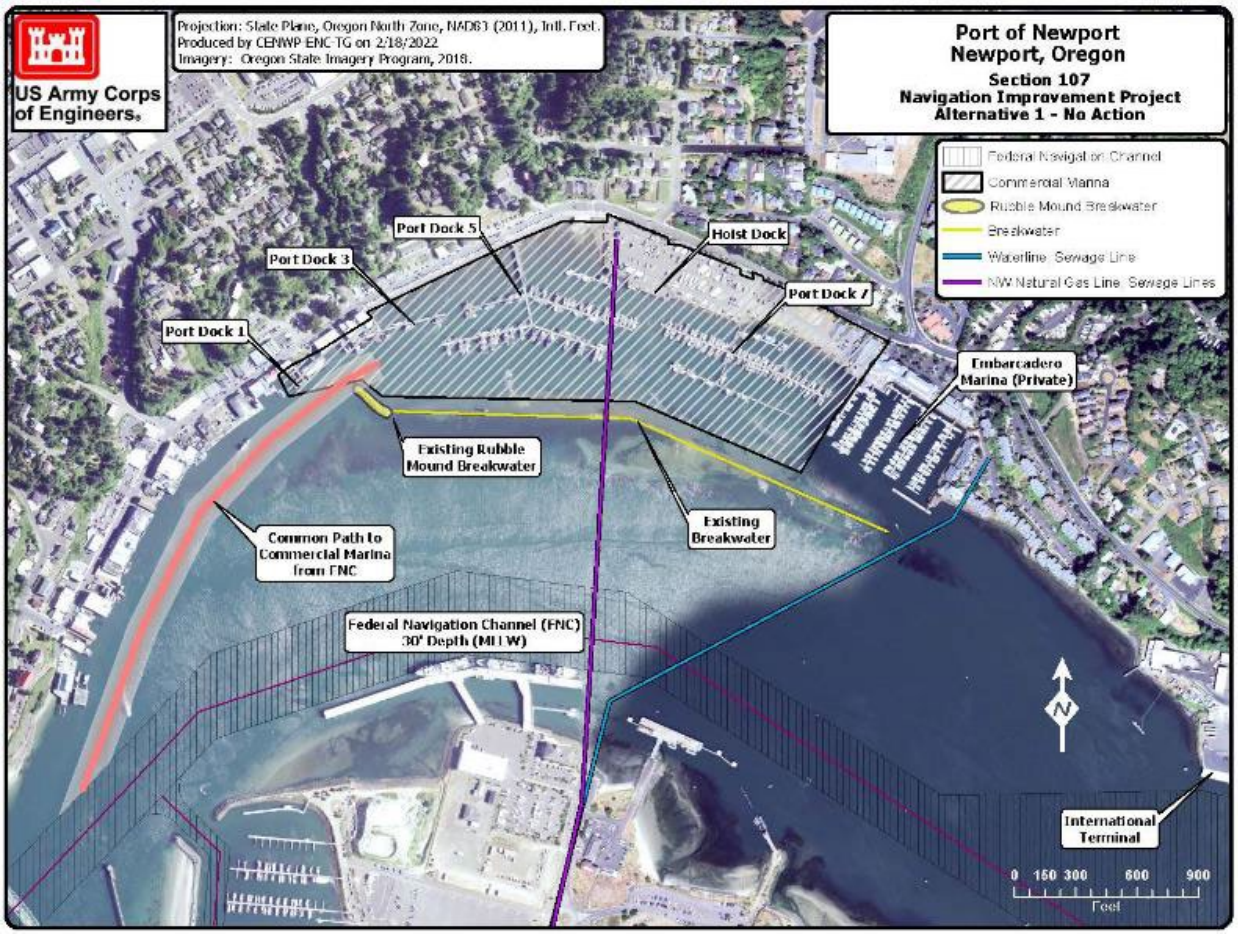

Figure 2-1. Newport Commercial Marina Facilities and Access

In addition, there is submarine infrastructure that crosses the project area and is essential to public and commercial interests in the area. These include an eight-inch diameter natural gas pipeline, a 24-inch diameter HDPE sewage pipe for sewage plant effluent, a 20-inch HDPE sewage pipe for raw sewage, and a 2 to 4-inch fiberoptic cable that cross from the south bank of the Yaquina River north through the FNC, breakwater, and Commercial Marina (Figure 2-1). The conduits for these lines run at approximately 70 ft and greater below the existing ground surface. Additionally, there is a 12-inch ductile iron water supply pipe and an abandoned sewage line that crosses from the southern shore of the Yaquina River northeast to the shore adjacent to the east end of the Embarcadero Marina (Figure 2-1). These conduits run no more than ten feet under the existing ground surface. The water supply pipe provides the main source of water for the South Beach area of the City of Newport; however, the city has a limited agreement with Seal Rock Water District to share water supply capacity in this area when needed. Finally, there are several outfall pipes from the fish processors' facilities that protrude out into the natural access channel along the west shoreline (Figure 2-2).

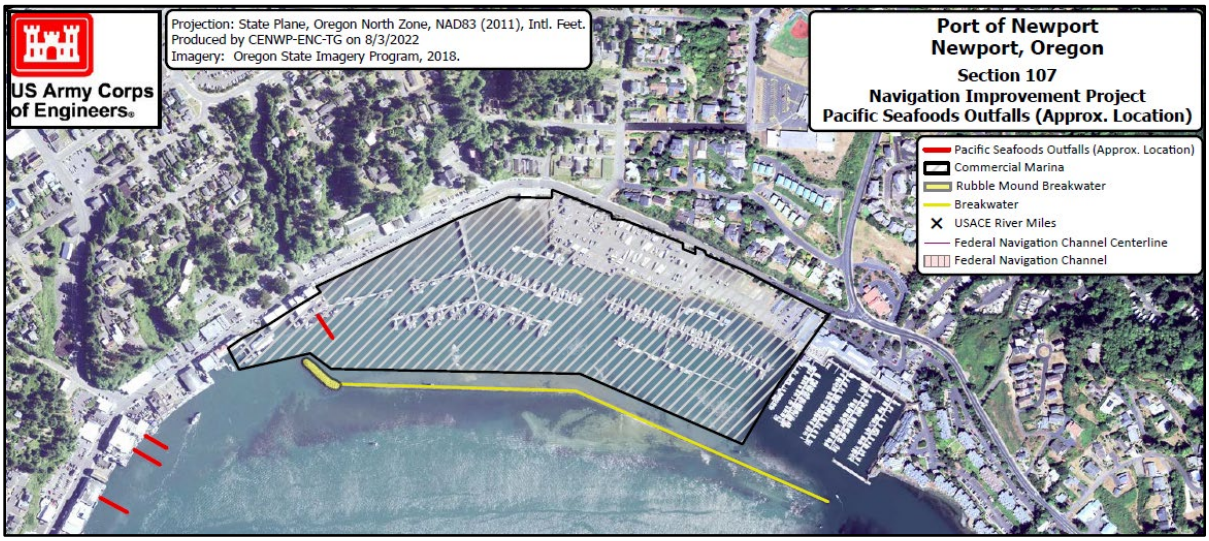

Figure 2-2. Location of fish processing outfalls

2.2.2 Existing Commercial Marina Navigation

The Yaquina Bay estuary is the fourth largest estuary in Oregon, covering approximately 3,910 acres at high tide (USACE, 2015). The Yaquina Bay provides a stabilized, protected entrance from the ocean for vessels serving the cities and ports of Newport and Toledo. Winter storms can produce winds exceeding 60 knots and waves greater than 20 ft several times a year. The intensity of these storms off the Yaquina Bay led the U.S. Coast Guard to designate it as one of the ten “critical harbors of refuge” along the Oregon Coast, which is a port, harbor, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and moor. The designation provides fishermen (and boaters) anywhere along the Oregon Coast the ability to transit to the nearest “critical harbor of refuge” prior to a storm reaching the coast, ultimately reducing the hazard to navigation and protecting human life and the environment.

Vessels entering the Yaquina Bay are predominantly for commercial fishing. Vessels navigating the entrance to Yaquina Bay experience the presence of a narrow, basaltic offshore reef. The reef lies approximately 3,500 ft seaward of River Mile (RM) 0 and the entrance channel passes through a narrow opening in the reef directly offshore of the bay. Two ODMDS are located just west of the reef (Figure 1-2). The topography of the lower Yaquina River as it meanders into the bay is relatively flat. Sediment shoaling occurs within the FNC and the entrance to the bay. The Yaquina Bay entrance and navigation channel undergo annual dredging maintenance by USACE. The dredged material is placed at the North and South Yaquina Bay ODMDS. These sites have gone through a rigorous process to identify and permit these sites for the placement of dredge material (USACE, EPA 2012). However, according to the Port, shoaling does not occur within the Commercial Marina and the area has not been dredged in the past 30 or more years.

The existing commercial fishing fleet utilizing the Port facilities varies in size, from some of nation’s oldest, still operable wooden fishing vessels to large deeper hulled factory trawlers. USACE records found that the majority of fishing vessels drafted 12 ft or less at the time of original port enhancements. Currently, Newport is home to a large fleet of fishing vessels that traverse from Alaska to northern California, driving the need for larger vessels that are capable of deeper water operations. The current fleet drafts between 4.5 ft to 17 ft, with relative lengths ranging from anywhere from 15 ft to 140 ft and relative beams from 6 ft to 36 ft.

Existing access to the Commercial Marina is provided by a natural river channel (i.e., generally the alignment of the northern original FNC in the Bay) that leads from the FNC to the Commercial Marina's northwest entrance and through the marina, between the Docks (5 and 7) and the breakwater. This natural channel from the FNC to the northwest marina entrance is approximately 100-ft wide, 2,500-ft long, and of variable depth ranging from 18-ft to 8-ft MLLW (Figure 2-3). Under existing conditions, vessels in the fishing fleet typically follow a navigation path of this natural channel, hugging the downtown Newport shoreline. Vessels are required to follow wake/speed restrictions while close to shore. This vessel speed restriction increases vessel transit times in a West entrance approach. At the rubble mound breakwater, many vessels are forced to delay egress or entrance as other vessels are exiting or entering.

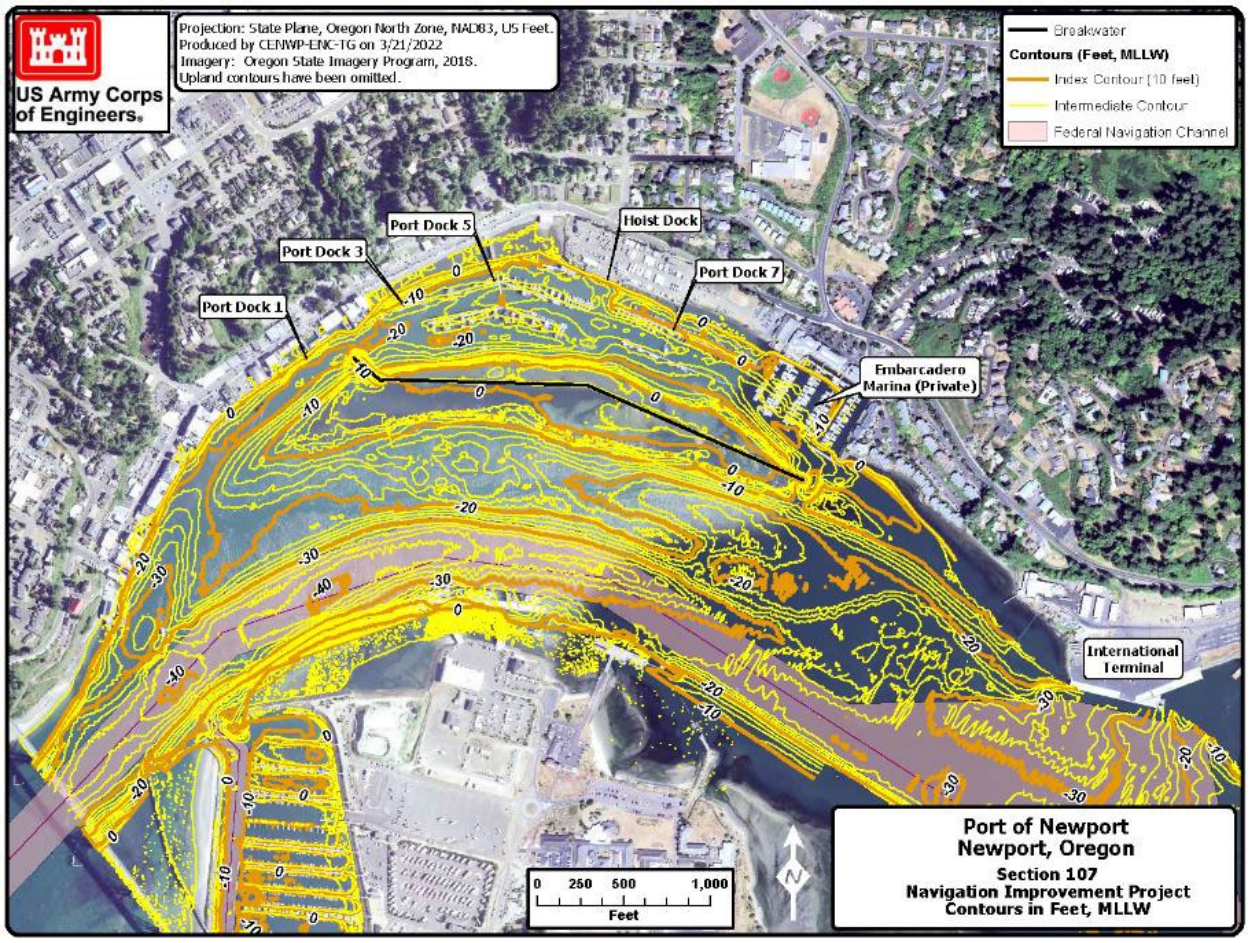

Figure 2-3. Port of Newport Bathymetry

Vessels utilize the marina primarily to change tackle, maintain equipment, switch out personnel, resupply, and perform other operational activities. Many vessels will offload at the fish processors with facilities along this shoreline before entering the marina. Vessels currently enter the marina area to the west of the rubble mound breakwater. Once vessels enter the Commercial Marina, they have the option to find available moorage at Port Dock 5 or Port Dock 7. Larger vessels are limited to moorage available at Port Dock 5, where the natural channel remains relatively deep (around -20 ft MLLW) (Figure 2-4). The area immediately behind the breakwater presents a navigation challenge for pilots who are tying up on the southern side of Port Dock 5, as lower tides expose vessels to sediment deposition against the interior of the

breakwater. The navigation hazard results in increased operating times, especially with less seasoned vessel operators. This also produces a hazard for vessels that are exiting the moorage area and must put their vessels into reverse to “back out” of the slip. As the vessels pass by the southern area between Port Dock 5 and the breakwater and potentially make the left turn to access the hoist dock, shoaling in the area requires vessels to “hug” close to the dock end resulting in navigation inefficiencies.

According to Port management personnel and vessel operators who were interviewed as a part of this study (Appendix B), Port Dock 7 and the hoist dock are currently underutilized because the shallower depths (around -15 feet MLLW, see Figure 2-4) that restrict the usage of these facilities to smaller vessels. Port Dock 7 is not accessible to deeper draft/larger vessels without assumption of risk to the hull/underkeel. The entrance into Port Dock 7 is similarly limited. Port Dock 7 moorage was originally constructed in 1971 and was primarily for recreational vessels and smaller fishing vessels.

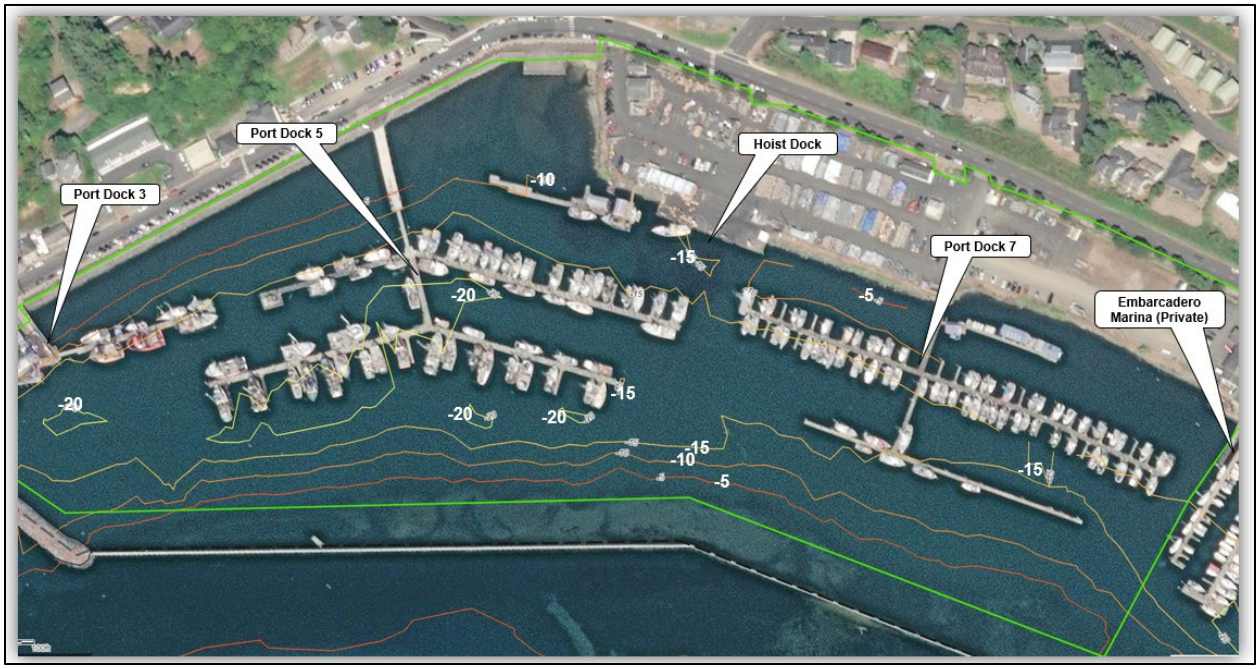

Figure 2-4. Commercial Marina Bathymetry

Vessels that are unable to access Port Dock 5 or Port Dock 7, primarily due to inadequate depths of the in-harbor thoroughfares for vessel dimension, often proceed to the International Terminal to conduct the same activities that would otherwise occur within the Commercial Marina. The International Terminal, while operational, is approximately a mile from the nearest processing facility (Pacific Seafood) and typically incurs additional operating costs to offload landings and transport back to the processor facilities. Many of these larger vessels are unable to moor at Port Dock 5 or 7, and will tie up adjacent to the processors, if space is available. The result is additional operating expense for those affected vessels, manifested as extra vessel operation time and/or lower revenue, as a function of finding additional moorage space for these displaced vessels.

In interviews with Port management personnel, it was stated that the Port had to refuse, on average, 10 fishing vessels per year due to lack of adequate access channel depth and width. The vessels are assumed to have traveled to one of the other two deep water ports in the

region, Astoria or Coos Bay, to moor for the year if docking space is available. The increased distance from seasonal fishing grounds results in additional operating costs. The data depicted in Figure 2-5 shows concentration of catch value as a result of deep-water port proximity. Commercial fleets typically follow migratory and seasonal fishing grounds and are subject to permitted catch limits. These catch limits further amplify the geographical aspect of the industry's best management practices.

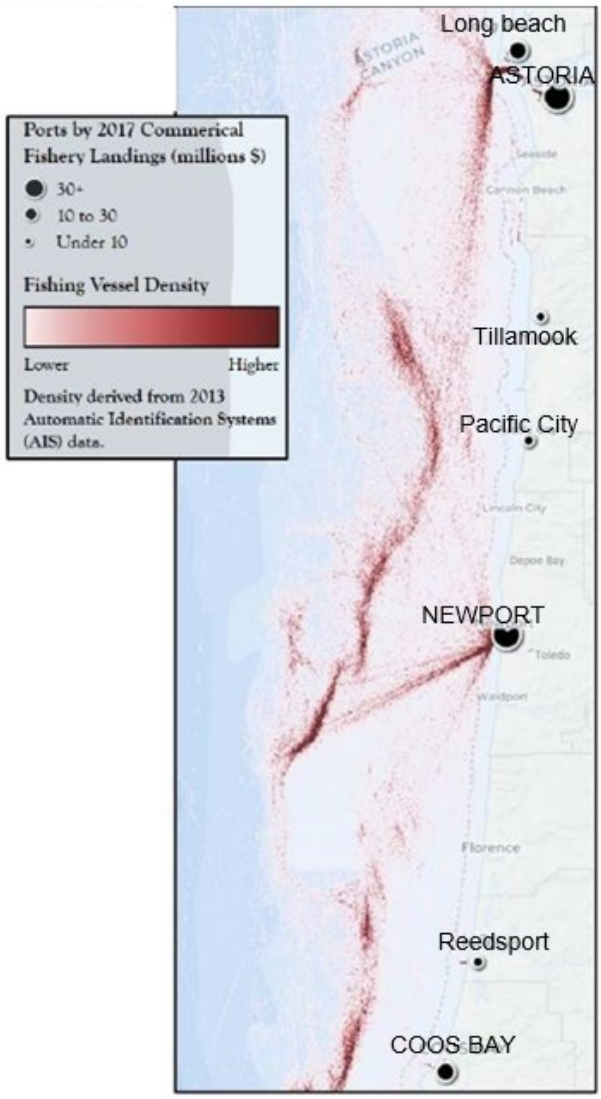

Figure 2-5. Port Location and Fleet Landing Density Value

The number of vessels licensed for commercial fishing in Oregon declined substantially between 2011 and 2018, falling from approximately 1,760 to 1,410 boats. One positive aspect of the decline in the number of boats is that the remaining fleet harvests more tonnage per vessel and generates more revenue per vessel. The Commercial Marina accounts for approximately 82 percent of moorage revenue with the International Terminal encompassing 18 percent. This revenue averages more than $500,000 annually. The largest share of moorage revenue from vessels at the Commercial Marina is generated by vessels that are 50 ft or less. However, over the past five years, there has been a gradual shift, with a declining share of revenue from

vessels 50 ft or less and a growing share coming from vessels that are 51 ft or longer. Larger vessels that would otherwise use the Commercial Marina, if not for the depth and moorage space limitation, can use the International Terminal if space is available.

2.2.3 Existing Sediment Conditions

The Port of Newport is located within the northwest extent of Yaquina Bay. Geologic maps of the area have characterized the region as underlain by marine sedimentary deposits which are comprised of the Nye Mudstone, Yaquina and Astoria formations. Sediment deposition overlying these deposits vary in sand, silt and shell fragments largely dependent on distance from the main navigational channels. The Commercial Marina has not been dredged in the last 30 years and is protected by the timber and rubblemound breakwater that surrounds the Commercial Marina, which indicates that the area is sheltered from large changes in sediment erosion or deposition. Therefore, the sedimentation rate is very low within the Commercial Marina.

In 2022, USACE collected and analyzed grab samples of sediments from RM 1+12 to RM 1+45. Additionally, as a part of the Project, a contractor to the Port of Newport (GRI, of Tigard, Oregon), in cooperation with USACE, performed sediment sampling in 2024 in accordance with the *Sampling and Analysis Plan, Port of Newport CAP 107, and Port Dock 7 Project* dated February 6, 2024 (SAP). The SAP incorporated the sampling methods outlined by the Portland Sediment Evaluation Team (PSET) in their *Sediment Evaluation Framework for the Pacific Northwest* (SEF; May 2018). Sampling included sediment cores obtained using sonic drilling equipment on a barge. The samples underwent physical and chemical analysis and biological testing. The Sediment Characterization Report (GRI 2025) provides the results of the sediment sampling, chemical, and biological testing for the Project.

Analyses and chemical data interpretation performed in accordance with the SEF (May 2018) found that the gravel content ranged from less than 1 to 22%, sand content ranged from 9 to 98%; fines content ranged from 3 to 96%. Surface sediments were analyzed for total solids, total organic carbon, total sulfides, ammonia, heavy metals, polynuclear aromatic hydrocarbons, chlorinated hydrocarbons, phthalates, phenols, organochlorine pesticides, polychlorinated biphenyls (total Aroclors), tributyltin, and dioxins/furans. Most of these compounds were not detected, or if they were detected they were at concentrations well below the SEF marine screening levels or state of Oregon screening level values. These results indicate the unconsolidated sediment is suitable for unconfined aquatic disposal.

The Nye formation is petroliferous, meaning that it has the potential to contain petroleum hydrocarbons and associated contaminants. Representative samples of the Nye mudstone were tested for total petroleum hydrocarbons (diesel and residual range), polycyclic aromatic hydrocarbons, and heavy metals. Most of these compounds were not detected, or if they were detected they were at concentrations well below the SEF marine screening levels or state of Oregon screening level values. These results indicate the mudstone is suitable for upland disposal and should be suitable for unconfined aquatic disposal.

2.2.4 Summary of Socioeconomic Conditions

This section presents a summary of the socioeconomic conditions in the study area most likely to be affected by implementation of these alternatives, including demographics, tourism and recreation. See the Section 4 for more details on these resources.

Between 2010 and 2022, the population of Lincoln County and the Port District grew at an

average annual rate of 0.7 percent. In contrast, the City of Newport grew at an average annual rate of 0.2 percent while the state as a whole grew by 1.1 percent annually. The age of the county's population is increasing, with an increasing share of residents 65 years and older and decreasing shares of working age (18 to 64 years) and children (under 18 years).

Lincoln County's economy is heavily based on sales, service industries, and retail trade. These three sectors accounted for more than 50 percent of jobs in the County in 2022. The employment distribution in the County is similar to the rest of the Oregon coast; manufacturing, natural resource industries, and transportation/warehousing industries accounted for only 10 percent of total employment. Workers who live in Lincoln County are increasingly likely to commute to jobs outside the county, primarily to the Portland metro area, Marion County, and, to a lesser extent, Linn and Benton counties. Growth of the local economy could enable fewer residents to commute. Wages in Lincoln County averaged $37,265 in 2022, which is similar to the average wages in other coastal counties, including Clatsop and Tillamook, but lower than nearby counties in the Willamette Valley (Lane and Benton counties). However, the sectors that use Port facilities generally have higher wages; commercial fishing wages average $57,000 and marine research and education jobs in the federal sector average $70,000 per year.

Newport's commercial fishing industry contributes significantly to the regional economy. In 2019, it accounted for 14.2% of Lincoln County's earned income, up from 9.9% in 2012, reflecting its growing importance. In 2024, the industry, including related activities, generated an estimated $346 million in economic activity and supported around 7,400 jobs. The Port ranks among the top in the nation for seafood landings, with 112 million pounds of seafood valued at $53 million attributed to vessels operating in and around the Port in 2017. Key species include groundfish (like rockfish and lingcod), salmon, Dungeness crab, halibut, and albacore tuna. The city's infrastructure—featuring three shipyards, marine supply shops, a net shop, and multiple seafood processors—makes it a one-stop hub for fishing operations, often described as Oregon's most authentic working waterfront. Newport is particularly renowned as the "Dungeness Crab Capital of the World," with the crab fishery being a major economic driver. The industry collaborates with scientific efforts, such as those at the Northwest Fisheries Science Center's Newport Research Station, which conducts research on groundfish and salmon to inform sustainable management practices.

The Port is an important provider of tourism and recreation facilities and amenities. However, the Commercial Marina is not the center of recreational activity in the study area. The Privately owned Embarcadero Resort and Marina provides 233 year-round slips that range in size from 20′ to 40′, with many available for daily, weekly or monthly rentals. The Port's South Beach Marina, across the river from the Commercial Marina, is the key facility that provides recreational facilities. The South Beach Marina is the main boat launch for crabbers and clammers in Yaquina Bay and provides moorage for recreational vessels and charter boats as well as RV parks. Small aluminum boats can be rented from the South Beach Marina and the Embarcadero. The Port also leases to businesses in this area that support and enhance the tourist experience, such as the Oregon Coast Aquarium and the Rogue Brewery, among others.

In addition to recreational boating for fishing, water skiing, sailing, and cruising, the Yaquina Bay offers many shell fishing opportunities. At the Commercial Marina, there is a clamming bed on the island shoaling adjacent to the breakwater (Figure 2-6). This island is only accessible by boat. The north side of the breakwater island is the Yaquina Bay Shellfish Preserve and is closed to all clam harvest. The south side is open for clamming and contains gaper and cockle

clam beds (ODFW, 2025). Additionally, crabbing for Dungeness and red rock crabs can be done along Newport's Bayfront south of the Commercial Marina at the Bay St. Pier and the Abbey St. Pier (Figure 2-6). Crabbers with boats set gear throughout Yaquina Bay, avoiding placing gear in the FNC.

Figure 2-6. Recreational shell fishing opportunities around the Newport Commercial Marina

2.2.5 Summary of Environmental Resources

This section presents a summary of environmental resources most likely to be affected by implementation of these alternatives. See Section 4 for more details on these resources.

The ODFW defines several ecoregions throughout the state and proposed work would fall within the "nearshore" ecoregion, identified as the area from approximately three nautical miles offshore to the supratidal zone and into the portions of estuaries subject to saltwater intrusion (ODFW, 2016). Yaquina Bay is broadly defined as estuarine habitat including mudflats, macroalgae beds, seagrass beds, and tidal marshes and swamps. Proposed channel improvements would occur in areas that include seagrass beds, tidal flats, and rocky substrate associated with the breakwater and shoreline armoring.

The Yaquina estuary has historically supported a wide array of resident and migratory fish, along with numerous invertebrate species (DeBen, Clothier, Ditsworth, & Baumgartner, 1990). Yaquina Bay eelgrass beds (Figure 2-6) are important habitat for birds, fish, crabs, and other aquatic invertebrates. Tideflats are another important habitat in Yaquina Bay for shrimp, clams and shorebirds (Oregon Sea Grant, 2019). As discussed in Section 2.2.3, most of the species important to recreational and commercial fisheries have been detected in Breakwater Flat clamming beds (Figure 2-6). While harvest does occur on the south side of the breakwater, flats along the north side of the breakwater are a designated shellfish preserve (Figure 2-6) and take of clams is prohibited (ODFW, 2025).

There are numerous additional species that are known to utilize rocky shorelines, eelgrass

beds, tideflats, and the broader aquatic environment of the lower portions of the estuary. Harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) often haul out on tideflats and port docks while resting (ODFW, 2021a). Birds are highly dependent on prey derived from diverse estuarine habitats found in Yaquina Bay and an array of species inhabit the estuary at various times throughout the year. Several species listed under the Endangered Species Act (ESA) have a potential to occur within an approximate 5 km radius of the Port of Newport. Marine mammals and sea turtles may transit the nearshore area but would most likely be encountered outside the bay in the coastal marine waters beyond the river mouth. They are rarer in or near Yaquina Bay. Coho salmon (*Oncorhynchus kisutch*), chinook salmon (*O. tshawytscha*), and green sturgeon (*Acipenser medirostris*) occur in the project vicinity at various times throughout the year and Yaquina Bay is included as part of their critical habitats (73 FR 7816 and 74 FR 52300). Eelgrass beds likely provide important rearing habitat for pre-smolts, and other life stages may also seek temporary refuge or forage within these vegetated areas. Yaquina Bay is part of the critical habitat for green sturgeon and likely supports their growth and development, adults may have an affinity for deep channels and holes during the day then move into tidal flats to forage at night (NMFS, 2021). Marbled murrelets may occur in the project vicinity, but are more likely to forage on anchovies, herring, and sand lance found just outside the breaker-line in coastal waters beyond the river mouth. There may be stands of old growth conifer forest that could support murrelet nesting habitat adjacent to the upriver portions of the Yaquina River. However, the closest important birding area for the species, which hosts relatively high numbers of murrelets, is at Yaquina head (National Audubon Society, 2021).

There are no known or documented historic properties or significant cultural resources which have been determined eligible for listing in the National Register of Historic Places (NRHP) located within the immediate Yaquina River/Newport Commercial Marina project vicinity. The breakwater structure that was originally constructed by the USACE in 1946 (and subsequently modified by the addition of a rubblemound structure in the late 1990s) has not been evaluated, but the structure will not be further modified or affected by the proposed project. Efforts detailed in the alternatives are to be focused on deepening, modification and expansion of the existing navigation channel, connecting channels and moorage areas within the Yaquina River/Newport Commercial Marina, none of which are considered historic properties or significant cultural resources. The designated ODMDS offshore dredge material placement location where dredged material proposed for removal from the project area is to be disposed has been previously assessed for submerged cultural resources and shipwrecks on several occasions, but none have been identified. The highly dynamic, open ocean environment comprising the ODMDS area has likely destroyed any submerged cultural resources that may have once existed in that vicinity. Furthermore, any errant ship wreckage that may have occurred in and/or drifted past this area has likely been completely destroyed or carried away by incessant tidal forces characteristic of the open ocean surroundings. The USACE has determined that no historic properties or cultural resources will be affected by any of the proposed work to be conducted as part of this undertaking. See Sections 4.11 and 4.12 for more details on these locations and the absence of any identifiable or significant cultural resources.

2.3 Future Without Project Conditions

The future without project condition is the expected condition if the federal government takes no action to improve the navigation capabilities in the Port's Commercial Marina. This section summarizes the future without project conditions for existing facilities as well as for the

resources most affected by the proposed action. A detailed analysis of effects to all resources under future without project conditions are described in Section 4 under the effects of the No Action Alternative.

2.3.1 Facilities and Infrastructure

Under the future without project conditions, most facilities and infrastructure are assumed to remain and be maintained by the owners to ensure their working order over the 50-year period of analysis. Additionally, according to the Port's Strategic Business Plan and Capital Facilities Plan (Port of Newport, 2019), the Port plans for the complete reconstruction and reconfiguration of commercial marina, including Docks 3 and 7, upland improvements, and improvements to the Swede's Dock. These improvements are planned even without deepening access to and within the Commercial Marina. Port Dock 7 improvements will include the complete reconfiguration of the existing moorage to improve maneuverability in and around Port Dock 7 as well as create more moorage space. Figure 2-7 provides a plan diagram of the proposed reconfiguration of Port Dock 7's berths.

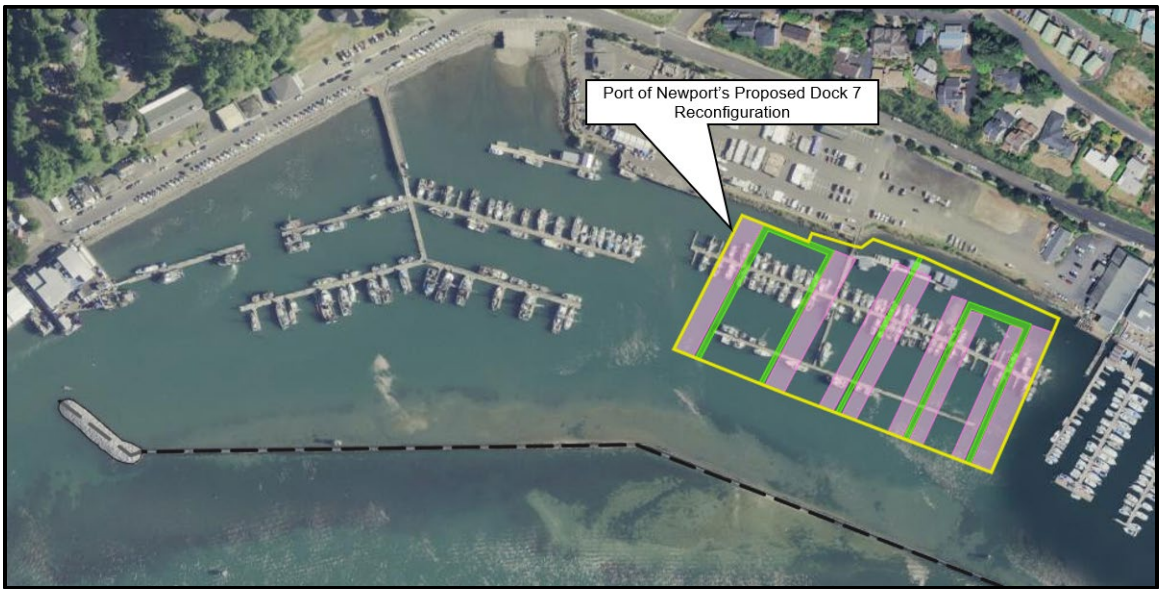

Figure 2-7. Port of Newport's proposed Port Dock 7 reconfiguration plan

2.3.2 Future Commercial Marina Navigation

Under Office of Management and Budget guidelines, surveys of commercial fishing vessels in Newport were conducted in the fall and spring of 2021-2022. The aim of these surveys was to ascertain challenges faced by vessels, operators, and crews in conducting their fishing activities. While there are no imminent threats to catch yields due to sedimentation inefficiencies, the operational efficiencies from navigation hazards results in increased operating costs. This increase in operating costs is theoretically passed on to the consumer in the form of higher prices.

Consolidation in the commercial fishing industry is expected to continue in the next five years and beyond. Independent seafood buyers represent a growing industry in Newport, and one that increases the need for transient moorage space with vehicle access. Under the future without project conditions, there would be no improvements to the Commercial Marina's entrance and

access channels. Absent such improvements, the consequence is continuation of unsafe maneuvering space in the Commercial Marina for larger commercial fishing vessels, continued delays as vessels must wait to transit into the Commercial Marina, and more competition for the limited moorage space for these vessels. Additionally, vessels waiting to enter the marina results in inefficiencies for reaching the fish processing facilities and servicing of the fishing fleet. Further, continued relocation of part of the commercial fishing fleet seeking services elsewhere before returning to the Yaquina Bay area to harvest their next catch will result in higher operating costs that will impact the overall cost to deliver their catch.

Additionally, based on the Port's Strategic Business Plan and Capital Facilities Plan (Newport, 2019), under the future without project conditions the Port is planning to partner for cargo business at the International Terminal with a commitment to maximizing the return on investment made by the community for this mixed-use facility's upgrade in 2013. Also, much of the distant-water fleet for vessels that fish in Alaska is based in Newport and moor at the International Terminal. Without improvements to Port Dock 7 to accommodate large vessels, the demand from these vessels at the International Terminal would likely increase at the same time that the Port is prioritizing that moorage for cargo ships. This will result in even less reliable moorage for larger commercial fishing vessels at the Port's facilities.

2.3.3 Summary of Socioeconomic and Environmental Resources

Several assumptions were made when conducting the future without-project economic analysis. The most critical assumption is that the existing fishery would continue to support the fleet. This assumption is supported by the fact that fisheries in Oregon are regulated to assure future viability of resources. It is also assumed that the Newport harbor system would continue to be a cornerstone of the Newport economy. However, absent Federal investment in navigation improvements, insufficient depths and existing marine infrastructure within the harbor system are expected to continue to cause transportation inefficiencies and limit access for commercial fishing and related activities, resulting in economic inefficiencies for the region and Nation.

Based on questionnaire results and discussions with harbor users and Port personnel, depth and channel constraints resulting in vessel delays occur during all conditions, regardless of the tidal dynamics. Delays experienced by commercial fishing vessels were reported inconsistently, with some reporting substantial (yet unquantified) delays, and some saying that delays at identified "problem areas" range anywhere from 15 seconds to 1 minute per transit of those identified areas. To account for these unknowns, a tact of using the most conservative estimates (15 seconds per identified feature) was utilized. These delay assumptions were corroborated with Port staff and gleaned from Automatic Identification System (AIS) transmission data.

2.3.3.1 Vessel Operating Costs

Benefits of this project accrue from reductions in vessels' vessel operating costs (VOCs). At Newport, the most significant driver of increased VOC costs is lack of adequate moorage within the Commercial Fishing Marina. Vessels are forced to pay more money for short-term moorages – both in the Marina and at the International Terminal – due to the lack of slips available to them within the Marina. Larger vessels are depth constrained and cannot moor in the Marina even if there is a slip for them as they do not have enough underkeel clearance in harbor.

Additional VOCs are also incurred from transit inefficiencies. The main drivers of these inefficiencies are difficulties accessing the Marina entrance and difficulties accessing the Hoist

Dock area, which includes Swede's Dock and the Fuel Dock. Vessels unable to use Hoist Dock facilities due to channel size constraints must make a 30-45 minute journey upriver to use hoists, conduct maintenance, or fuel up at the International Terminal.

Potential benefits associated with reducing VOCs have a medianaverage annual value of $77,000 over the 50-year period of analysis. Table 2-1 shows five number summaries of potential VOC savings by area of use.

Table 2-1. Future Without-Project Condition: Vessel Operating Costs Resulting From Sedimentation, FY 25 Price Level, 3.0 Discount Rate

	Minimum	First Quartile	Median	Third Quartile	Maximum
West Entrance	$16,000	$26,000	$28,000	$29,000	$39,000
Hoist Dock Access Channel and Moorage	$97,000	$107,000	$109,000	$111,000	$122,000
PD 7 Moorage	$439,000	$493,000	$505,000	$517,000	$578,000

2.3.3.2 Environmental Resources

In the absence of Federal action, the condition of aquatic resources, wetlands, fish and wildlife, threatened and endangered species, and cultural resources is expected to remain consistent with current conditions. Environmental impacts may occur due to repairs to existing facilities.

2.3.3.3 Sea Level Rise

The Oregon coast is subject to changing conditions that is projected to affect sea levels, erosion rates, water temperature, wetland plant communities, salinity intrusion, and water temperature (Brown, Sharp, & Mochon Collura, 2016; Ruggiero, et al., 2010). Rising temperatures are more of an immediate threat to the biological community in Yaquina Bay. Coastal upwelling in summer would buffer water temperatures in summer, but significant water temperature changes in winter and spring could have adverse effects to water quality and disrupt fish populations and other aquatic fauna (Brown, Sharp, & Maochon, 2016). Increasing storm intensities and future El Ninos will likely exacerbate erosion effects from sea level rise and larger waves crashing against the coast. The immediate project area is in the interior of the bay so would likely not be subject to the larger waves of the open coast, but any major storm events that cause significant winds, surge, inundation, or runoff could affect local infrastructure, tourism, and recreation. Ocean acidification of nearshore waters, rising temperatures, and lower dissolved oxygen concentrations could affect the distribution and abundance of aquatic vegetation, shellfish populations, and phytoplankton (Ruggiero, et al., 2010). The long-term impacts of changing conditions would impact the aquatic resources, wetlands, and fish and wildlife species and could impact the species available for harvest and the size of the harvest. Any changes in the health of the aquatic environment could affect local residents and regional economies due to changes in the provision of important ecosystem services.

3 Plan Formulation

The guidance for conducting civil works planning studies, ER 1105-2-103, requires the systematic formulation of alternative plans that contribute to the Federal objective. To ensure sound decisions are made with respect to development of alternatives and ultimately with respect to plan selection, the plan formulation process requires a systematic and repeatable approach. This chapter presents the results of the plan formulation process. Alternatives were developed in consideration of study area problems and opportunities as well as study objectives and constraints with respect to the four accounts (NED, Regional Economic Development [RED], Environmental Quality [EQ], and Other Social Effects [OSE]) and the evaluation criteria (completeness, effectiveness, efficiency, and acceptability) described in ER 1105-2-103.

3.1 Planning Framework

Based on the project objectives, the study team determined that the best approach for formulating alternatives was to use a design vessel and build the alternatives incrementally using different combinations of dredging improvement areas. Identification of a design vessel assists the study team by informing design parameters for alternatives. For deepening projects, the design ships are selected based on economic studies of the types and sizes of the ship fleet expected to use the proposed channel over the project life. The design vessel is chosen as the maximum or near maximum size ship in the forecasted fleet. A design vessel is a hypothetical or real ship with dimensions of the largest vessels that a navigation project is designed to accommodate. The economics and coastal hydraulics team, in consultation with the Port, recommended consideration of one commercial fishing design vessel for the study. The design vessel for the project is 95 ft long and 36 ft wide with a 15-foot draft. The design vessel was selected from comprehensive studies of the various types and sizes of vessels expected to use the project during its design life. This vessel has informed alternative design parameters and is the basis for channel design assumptions as summarized in the following sections. The design vessel (and smaller vessels) will provide the economic optimum project; however larger vessels may use the project under special conditions such as infrequent one-way transit.

As all alternatives were designed to meet the specifications of the design vessels, the study team approached alternative formulation by incrementally combining dredging improvements to discrete segments of the existing navigational pathways to and within the Commercial Marina as well as dredging improvements to Port Dock 7 and hoist dock moorage areas. For the purposes of this study, General Navigation Features (GNF) may include breakwaters, channels, and turning basins and, as mentioned previously, LSF are moorage areas. The channel segments include the three GNF entrance channel alignments (west, central, and east) as well as the deepening and widening of the existing navigation pathways within the marina to improve access and maneuverability to Docks 5 and 7 and the hoist dock. Within the marina, the existing navigational pathways were divided into discrete segments that could be combined incrementally to differentiate between alternatives. Additionally, moorage deepening areas include Port Dock 7 moorage and the hoist dock moorage. Figure 3-1 shows the following eight discrete dredging areas used to incrementally build alternatives:

- West Entrance Channel
- East Entrance Channel
- Central Entrance Channel
- Port Dock 5 Channel
- Port Dock 7 Channel

- Hoist Dock Access Channel
- Hoist Dock Moorage Area
- Port Dock 7 Moorage Area

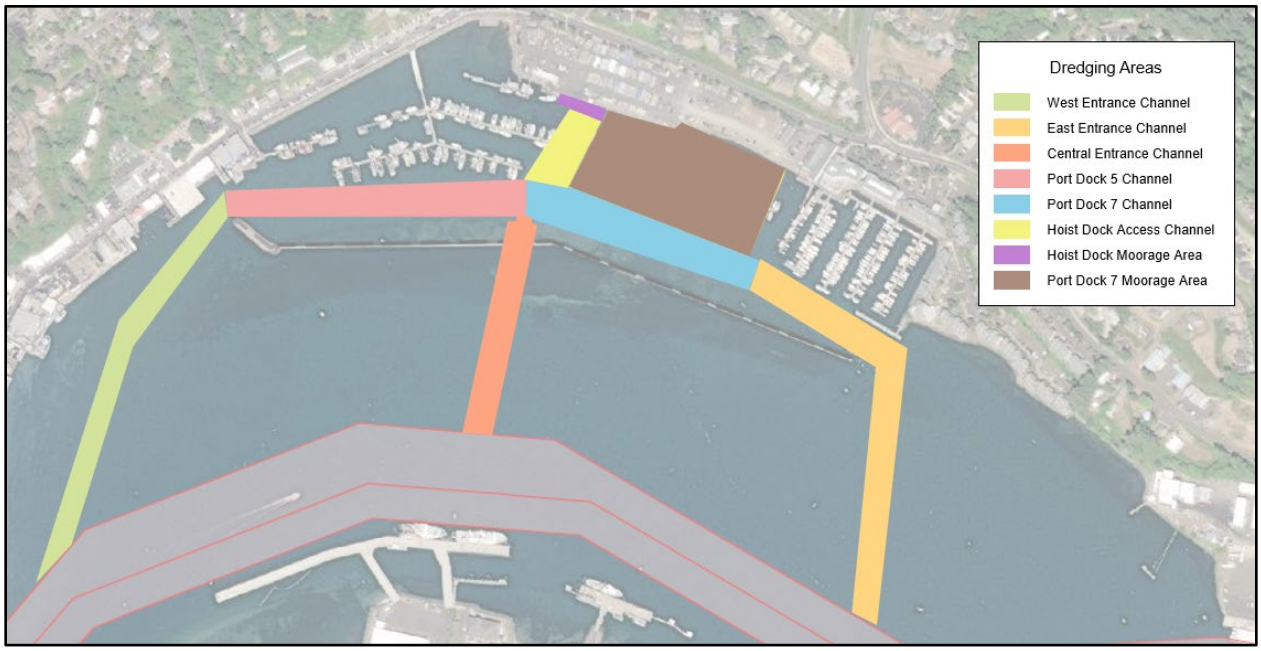

Figure 3-1. Commercial Marina Dredging Areas

3.2 Assumptions

This section describes the assumptions that were used in the planning process to inform the decisions that were made to establish the conditions for plan formulation.

3.2.1 Channel Length Assumptions

Proposed channel lengths for each alternative have been determined based on the physical limitations of the channel. The channel alternatives are designed for a newly established (following the abandonment of the historic northern Federal channel) Federal channel into and out of the Commercial Marina, so there are no modifications to an existing FNC. Lengths of each discrete dredging area that make up each channel are as follows:

- West Entrance Channel = 2,500 ft
- East Entrance Channel = 1,800 ft
- Central Entrance Channel = 1,000 ft
- Port Dock 5 Channel = 1,300 ft
- Port Dock 7 Channel = 1,000 ft
- Hoist Dock Access Channel = 400 ft

3.2.2 Channel Width Assumptions

Proposed channel widths for each alternative were determined based on the physical limitations of the channel as well as the design vessel for the study. Inside the Commercial Marina the channels are all 72 ft wide, which was calculated with guidance from EM 1110-2-1615 (Hydraulic Design of Small Boat Harbors) by doubling the beam (width) of the design vessel.

This value is also applied to the West Entrance Channel. The East and Central Entrance Channel widths outside the Commercial Marina had to be widened further and are described in Section 3.2.3.

3.2.3 Approach Channel Assumptions

To address navigational challenges at the entrances of the Commercial Marina, the channel widths outside of the Commercial Marina for the Central and East Entrance Channels were widened beyond the inner channels. The East and Central Entrance Channels are 90 ft wide. To offset wave action and currents, which would not be in-line with the ships as they cross Yaquina Bay to get to the Commercial Marina, an additional 0.5 times the design beam was added to the beam calculation. The West Entrance Channel is aligned with the natural (pre-project) channel and does not need additional widening as it approaches the Commercial Marina.

3.2.4 Channel Depth Assumptions

Per Engineering Manual (EM) 1110-2-1615:

> *"Channel depths should be adequate for vessel draft and squat, wave conditions, and safety clearances. Additional depth is allowed in construction due to dredging inaccuracies. Overdepth dredging may also be included as an advance maintenance procedure... Interior channel depths normally are not as deep as entrance channels because the wave action adjustment is normally less. The type of dredge or other excavation equipment must be indicated to assure that it can operate in the selected channel depths. Tidal channel dimensions must be evaluated for stability to assure that rapid shoaling or erosion will not occur."*

Proposed channel depths for each alternative are based on EM 1110-2-1615 depth requirements. USACE analyzed costs and impacts of authorized depths ranging from -16 ft MLLW to -18 ft MLLW within the Commercial Marina, and -18 ft MLLW to -20 ft MLLW for the Entrance Channels. Authorized depths shallower than -18 ft MLLW within the Commercial Marina and shallower than -20 ft MLLW for the Entrance Channels did not meet minimum criteria per EM 1110-2-1615 for sufficient squat, wave conditions and safety clearances, unless larger vessels use timing of high tides to transit the Commercial Marina. The current depth of the Commercial Marina is, on average, less than -18 ft MLLW, so authorized depths deeper than -18 ft MLLW within the Commercial Marina would require additional volume of sand and nye mudstone (where present) removed and were not recommended for detailed evaluation due to the additional dredging effort and potential costly disposal requirements anticipated for nye mudstone.

The proposed authorized depth is -18 ft MLLW within the Commercial Marina and -20 ft MLLW for the Entrance Channels. For the Entrance Channels, the authorized depth consists of the design vessel draft (15 ft) and includes additional depth for squat (1 foot), wave conditions (2 ft), and safety clearances (2 ft). For the Commercial Marina, the squat and wave conditions were decreased to 0.5 ft and 1.5 ft, respectively, due to the protection the breakwater provides. Additionally, an overdepth of 2 ft was applied to both Commercial Marina and Entrance Channels to account for anticipated nye mudstone removal during construction; it is reasonable to assume that the contractor will need the additional 2 ft to get to grade while cutting harder material/rock for deepening. An overdepth of 1 foot would lead to higher assumptions on non-

pay material and/or slowed productions that would translate into a higher cost per cubic yard, which could equate to very similar costs as allowing the additional foot of overdepth, but without the additional material removed.

3.2.5 Local Service Facility Assumptions

The LSFs assumed for this project include berthing area deepening at Port Dock 7 and the hoist dock (Figure 3-2). LSFs will be provided at 100% non-Federal cost and are included as an economic cost in the economic evaluation. LSF details for each of these berthing areas appear below.

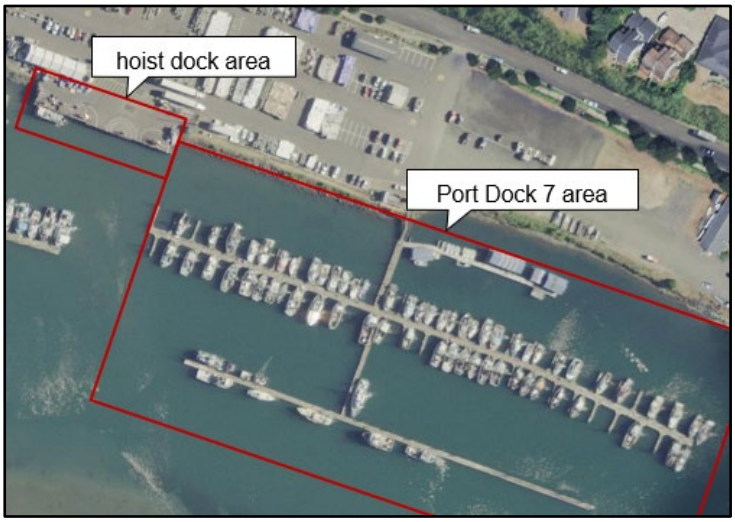

Figure 3-2. Project LSFs including Port Dock 7 and the hoist dock

Port Dock 7: As discussed in Section 2.3.1, under future without project conditions, the Port will reconfigure Port Dock 7 (Figure 2-7). The Port Dock 7 berthing area is approximately 880 ft east-west by 350 ft north-south. Currently, berths at Port Dock 7 vary from -5 to -15 MLLW. The GNF channel improvements for the in-marina channel segments will support depths to -18 MLLW; therefore, Port Dock 7 LSF requirements are limited to additional deepening of the berthing area to reach -18 MLLW, including any portion of the berth areas which overlap the GNF.

Hoist Dock Berth: The hoist dock and yard are located to the west of Port Dock 7. The hoist dock includes two jib-type swing hoists and two crane hoists. The crane hoists are not often used, as the fisherman prefer the swing hoists. The dock is approximately 220 ft by 30 ft, with 30-foot concrete sections on each end (built in the late 1980s) and a 200-foot timber-supported center. According to the Port, the overall condition of the dock appears to be fair, but the entire dock will require replacement in the future. Currently, the hoist dock berth is approximately -15 MLLW. The GNF channel improvements for the in-marina channel segments will support depths to -18 MLLW; therefore, the hoist dock LSF requirements are limited to additional deepening of the berthing area to reach -18 MLLW, including any portion of the berth areas which overlap the GNF.

3.2.6 Dredge Material Management and Disposal Assumptions

The material dredged as a part of the Project is predominantly unconsolidated sand/silt overlaying consolidated sediments (Nye mudstone formation) (see Section 2.2.3 for details),

which may occur at -20 ft MLLW or shallower based on existing data.

For the purposes of the alternatives cost analysis, under all alternatives USACE assumes that all material dredged will be placed at ODMDS. The Marine Protection, Research and Sanctuaries Act (MPRSA) sediment testing regulations found at 40 CFR 227.13 require pre-dredge sediment testing prior to aquatic disposal of the dredged material. The USACE determines the suitability of the dredged material for aquatic disposal per this regulation. The EPA reviews USACE's dredged material suitability determination (and the project's compliance with other MPRSA evaluation criteria) and issues their concurrence/non-concurrence for the site use request. Sediment sampling and characterization indicates that the sediment present in the project area is suitable for open water disposal at the ODMDS (GRI 2025). The PSET is preparing a suitability determination based on the results of the sampling and sediment testing and final concurrence for disposal at the ODMDS will be sought during the Design and Implementation phase of this project, as this concurrence only lasts for up to 3 years.

3.2.7 Operations and Maintenance Assumptions

USACE used the following assumptions for Operations and Maintenance (O&M) of the project once complete:

- USACE would incorporate the new navigation channels proposed for the project into the existing Yaquina Bay Project and maintenance dredging of the project channels (entrance and in-marina) would be added to the routine Oregon coast clamshell work.
- USACE would not incorporate the LSF moorage areas into the FNC and would not perform maintenance dredging in these areas.
- All material dredged for channel maintenance would consist of clean unconsolidated sand and silt. USACE would not dredge additional mudstone for project maintenance purposes.
- Maintenance dredging material would be placed at the existing ODMDS.
- Maintenance dredging would occur within the typical maintenance dredging window for the Yaquina Bay (i.e., June 15 – October 31).
- Maintenance dredging would occur on a 5 year cycle.

3.2.8 General Planning Assumptions and Key Areas of Uncertainties and Study Risk

USACE used the following key assumptions in the planning process:

1. The vessel traffic and design vessel analysis identified the current and future need to improve the marina access for the larger commercial fishing fleet vessels.
2. The existing path to the marina has not changed significantly over decades and so it is assumed that available bathymetry is adequate for design purposes. Therefore, no new bathymetric surveys were performed.
3. A compilation of eelgrass monitoring and mapping data collected in Yaquina Bay through 2012 (Sherman and DeBruyckere 2018) was used for an initial assessment of the areal extent of eelgrass within the project vicinity and estimate of the acreage of potential direct loss due to dredging activities. Subsequent eelgrass surveys were completed by USACE and Port contractors in the Summer of 2023 to refine area estimates for eelgrass impacts and inform more specific avoidance and mitigation measures. The most recent eelgrass survey results are deemed valid for a period of three years. Should the project implementation schedule indicate dredging would occur after August 2026, new surveys would be needed to confirm the extent of eelgrass in the

proposed dredging footprint.
- The sub-sea floor utilities could impact the east entrance alternative channel dredge depth or even prevent this alternative. The assumption at this time is that the utilities would not negatively impact the alternative beyond additional cost and risk until verification of its future status and impact is determined.
- The Port already has plans to reconfigure the docks, with or without a project, which will need to be optimized in response to the general navigation features (channel design). USACE assumes only changes from the sponsors current plans will be consider a project cost.

4. The navigation improvements providing access to, from, and within the marina to LSFs are a shared cost and future maintenance of the GNF will be a federal cost, subject to the availability of appropriations.
5. The TSP will be the alternative that has the highest annual net benefits and is environmentally acceptable.

The key areas of risk and uncertainty in the planning process include:

- The mudstone has not been approved yet for open water disposal at the ODMDS. In order to dispose of the mudstone at the ODMDS, USACE is awaiting a PSET Sediment Determination Memorandum confirming that the material is suitable for open water disposal at the ODMDS and that the ODMDS has capacity for the material. The Environmental Protection Agency (EPA), a member of the PSET, must then indicate concurrence is likely to be granted for placement of the material at ODMDS. The PSET is currently reviewing the Project's Sediment Characterization Report (GRI 2025). A Sediment Determination Memo is anticipated in mid-year 2025. Early communications from the USACE Portland District Sediment Team indicate the memo will be favorable for ODMDS disposal of all Project material. Consequently, USACE assumes disposal of all material from the project at ODMDS.

- The eel grass impacts are assessed based on surveys completed in the Summer of 2024. There is a slight risk that the footprint of eelgrass could change prior to implementation and be greater or less than projected. If construction occurs after August 2027, a new survey would be completed just prior to implementation to determine whether planned mitigation is sufficient to offset the realized impacts from dredging
- This survey will also help determine whether eelgrass in dredged areas might be suitable for transplanting into the mitigation sites. In general, the risk that the amount of eelgrass adversely impacted by dredging activities has been underestimated is fairly low and the proposed mitigation site is sufficiently large to accommodate additional planting if that is deemed necessary.
- Eelgrass mitigation is being pursued in a dynamic estuary and there is no way to control for all of the natural variability that could affect eelgrass growth and establishment. USACE has proposed that reference beds be identified to gauge the relative performance of eelgrass mitigation sites, but there is still a possibility that mitigation areas will not meet performance criteria. The mitigation plan includes annual monitoring to track progress and triggers for additional corrective measures to improve the likelihood of meeting success criteria within a 5-year period.
- The cost to relocate the water supply for the South Beach area as well as the availability of an alternative water supply source for use during construction is highly uncertain. This results in risks to the east entrance alternatives that include water supply utility relocation.

3.3 Management Measures

A management measure (or "measure") is a feature or activity, that can be implemented at a specific geographic site to address one or more planning objectives. These measures are the building blocks of alternative plans and can be stand-alone or combined into larger projects. The list of structural and non-structural management measures considered is provided below with an explanation of the screening decisions associated with each. Screening is the process of eliminating, based on planning criteria, those measures that will not be carried forward for consideration. Criteria are derived for the specific planning study, based on the planning objectives, constraints, opportunities, and problems of the study/project area. Criteria used to screen measures as well as qualitative metrics associated with each criteria included the following:

- Is the measure already being carried out or not considered necessary by the non-federal sponsor? A measure is screened if response is "yes."
- Does the measure meet the primary planning objective? "Improve access from the federal channel in the Yaquina River to the Newport Commercial Marina." A measure is screened if response is "no."
- Do site-specific conditions cause the measure to be technically infeasible or not applicable as a navigation improvement measure? A measure is screened if response is "yes."

3.3.1 Nonstructural Measures

All nonstructural measures have been excluded from consideration. The reasoning for each is identified below.

High tide transiting: Time transits to use high tide to allow the current fleet to transit the harbor under existing project conditions.

- Screening Rationale: This measure already occurs at the Commercial Marina. When certain ships have a draft that exceeds the least depth in the channel, they will remain at anchor or alongside the berth to wait for the proper underkeel clearance or transit. However, the fishing schedule is highly erratic and berthing availability is not reliable enough to make high tide transiting a useful tactic. More often, when additional draft is needed to berth, the vessel will transit to another facility with the proper depths such as the International Terminal or the seafood processing docks along the west entrance.

Revise traffic patterns: Revise vessel traffic patterns within the Commercial Marina.

- Screening Rationale: Existing vessel traffic patterns are already as efficient with current depths as possible. Additionally, the spatial constraints within the Commercial Marina make revise traffic patterns infeasible.

Tug assists: Use additional tug assists to help larger vessels and vessels with decreased maneuverability transit the Commercial Marina.

- Screening Rationale: Given the confined functional space within the Commercial Marina, tug assists/towing activity would not be feasible.

Light-loading: Light-load the larger vessels to allow them to transit the Commercial Marina under

existing project conditions.

- Screening Rationale: This measure is counter to the commercial fishing vessels' purpose in using the marina as the berths are primarily used to berth when they are full as they wait to process their catch. Otherwise, they come in empty.

Lightering: The process of removing cargo before calling at a port or repair facility in order to reduce its arrival draft. Lightering typically takes place in dedicated anchorage locations.

- Screening Rationale: Technically infeasible as there are no available anchorage locations for transferring cargo and the larger vessels targeted for this project would still be unable to access Port Dock 7 and have limited maneuverability within the Commercial Marina even after lightering.

3.3.2 Structural Measures

It is noted whether a measure would be a GNF, which would be cost shared, or an LSF, which would be at the cost of the non-federal sponsor.

West entrance channel improvements (GNF): Deepen and widen the west entrance area of the waterway to allow for passage of larger vessels and safer access through the west breakwater entrance.

New entrance/access channel construction (GNF): Dredge a new channel from the FNC to allow for passage of larger vessels and safe access through either the east breakwater entrance or by creating a new entrance through the center of the breakwater.

In-Marina channel improvements (GNF): Deepen and/or widen the existing navigation areas within the Commercial Marina to improve navigation and safer maneuverability within the marina and to improve access to and safer maneuverability at docks for passage of larger vessels.

Deepen hoist dock berth (LSF): Deepen berth at hoist dock to allow for larger vessels to use the hoist dock facilities.

Deepen Port Dock 7 (LSF): Deepen Port Dock 7 moorage area to allow more of the larger vessels to berth there and improve maneuverability around the dock.

3.3.2.1 Excluded Structural Measures

The following measures have been excluded from consideration. The reasoning for each is identified below.

West entrance turning basin (GNF): Construct a turning basin outside the Commercial Marina west entrance to improve navigation access and to allow for additional maneuverability of larger vessels around the existing west entrance to the Commercial Marina.

- Screening Rationale: Based on the pilot interviews and analysis of existing traffic patterns, there is no need for this measure because there is currently enough maneuvering space outside the west entrance.

Landward hoist dock improvements (LSF): Improve infrastructure on land for activities at the

hoist dock.

- Screening Rationale: The sponsor asserts improvements to landward facilities are not needed to meet project objectives.

Hoist dock turning basin (LSF): Construct a turning basin to improve navigation access and to allow for additional maneuverability of larger vessels at the hoist dock.

- Screening Rationale: A separate turning basin would not be needed without deepening the hoist dock access channel and berth. Due to narrow area between Port Docks 5 and 7, the access channel width would use up most of the area, negating the ability or need to incorporate a designated turning basin.

Deepen Port Dock 5 (LSF): Deepen Port Dock 5 moorage area to allow more of the larger vessels to berth there and improve maneuverability around the dock.

- Screening Rationale: The sponsor considers Port Dock 5 is deep enough at -15 plus MLLW.

Improve Port Dock 7 (LSF): Reconfigure the Port Dock 7 to provide more berths and improve access and maneuverability around Port Dock 7.

- Screening Rationale: Considered a future without project condition.

Improve Port Dock 5 (LSF): Reconfigure the Port Dock 5 to provide more berths and improve access and maneuverability around Port Dock 5.

- Screening Rationale: The Port considers Port Dock 5 to be adequate.

Floating Docks (LSF): Construct large floating docks off of west end of the Commercial marina to increase the amount of moorage available for larger vessels.

- Screening Rationale: The sponsor has no plans for this and does not have interest in its implementation.

Additional anchorage (LSF): Construct anchorage area outside the marina.

- Screening Rationale: The sponsor asserts there is ample anchorage outside harbor. USCG has identified anchorage outside federal channel that seems adequate and other potential areas would require considerable dredging.

3.3.3 Dredge Material Disposal/Placement Measures

Per ER 1105-2-1030, USACE must identify the “the least costly dredged material disposal or placement alternative(s) that is consistent with sound engineering practices and meets all federal environmental requirements.” This is referred to as the “Federal Standard.” For dredged material placement, USACE fully considers all practicable and reasonable alternatives on an equal basis, including the use of dredged material beneficially, to identify the Federal Standard (33 CFR Parts 335-338). EM 1110-2-5025 defines 13 overarching Dredged Material Management Categories for dredge placement. For this project, the following categories were considered and screened as Dredge Material Disposal/Placement Measures to meet the

Federal Standard. All others were eliminated from further analysis because they would be more costly and have greater adverse effects to the environment.

Open Water Disposal (GNF): Open-water placement in riverine, lacustrine, estuarine, and marine environments with overlying volumes of water. Suitable material for open-water placement would be placed at the two ODMDS located just west of the mouth of the Yaquina River. The amount of material placed at the ODMDS would be dependent on the available capacity of the two ODMDS.

3.3.3.1 Excluded Dredge Material Disposal/Placement Measures

The following measure have been excluded from consideration. The reasoning for each is identified below.

In or Near Water Placement for Beneficial Use (GNF): Placement activities that construct, improve, or maintain submerged habitats, islands and/or high zone wetland habitats or directly onto a beach or river shoreline, in the littoral zone, nearshore, or shallow water with the intent to expand, stabilize or nourish the beach or shoreline.

- Screening Rationale: These beneficial use categories were screened from further evaluation because no beneficial use site was identified, and none is likely to be located within the project's vicinity. For sites outside the project vicinity, this option was determined to be cost prohibitive due to increased distance required to move material to the nearest potential beneficial use site located over 8 miles as well as additional cost of equipment required for placement. The cost to transport material to a distant beneficial use site would be greater than disposing suitable material in the identified open-water site. In addition, dredging would occur with a clamshell bucket, so there would be an additional cost for equipment (e.g., pumps) to place the material on shore. If a site is identified in the future and beneficial use is deemed cost effective at that time, it could then be evaluated for environmental compliance.

Upland Placement for Beneficial Use (GNF): Placement of dredged material in an upland Confined Disposal Facility for use to improve or construct harbor and port facilities, residential and urban areas, parks, airports, dikes, levees and containment facilities, roads, and island and historic preservation areas.

- Screening Rationale: These beneficial use categories were screened from further evaluation because upland placment is more costly than open water disposal. The Federal standard for least cost dredged material disposal alternative is using ODMDS.

3.3.4 Eelgrass Measures

To reduce potential adverse effects of project alternatives to eelgrass, the following avoidance and minimization measures have been incorporated into the planning process and would be included as part of project implementation.

Eelgrass Avoidance and Minimization (GNF and LSF): Avoid existing eelgrass beds to the maximum extent practicable, while still achieving project purposes. The project site is too constrained to avoid all impacts to eelgrass.

Eelgrass In-Kind Mitigation on Private Property (GNF and LSF): Creation or enhancement

of eelgrass on privately owned submerged lands. For unavoidable losses to existing eelgrass beds, USACE and the Port are proposing mitigation measures consistent with USACE policy for planning studies (i.e., see ER 1105-2-100 and ER 1105-2-103) and as authorized by Congress under Section 906 of the Water Resources Development Act (WRDA) of 1986. The Port owns several parcels of submerged lands within the project vicinity that are suitable for eelgrass creation or enhancement.

3.3.4.1 Excluded Eelgrass Measures

The following measures have been excluded from consideration. The reasoning for each is identified below.

Eelgrass Mitigation Bank (GNF and LSF): Purchase credits from the mitigation bank to offset unavoidable impacts to eelgrass habitat. A mitigation bank is created through restoration or creation of natural resources, often on land owned or managed by a specific entity from which project proponents who need to mitigate unavoidable impacts can purchase credits to offset their impacts.

- Screening Rationale: There are no mitigation banks for eelgrass habitat available within the project vicinity.

Eelgrass In-Kind Mitigation on USACE Property (GNF and LSF): Creation or enhancement of eelgrass on USACE owned submerged lands.

- Screening Rationale: USACE does not own submerged lands situatable for eelgrass habitat within the project vicinity.

3.4 Formulation of Alternatives

Alternative plans are a set of one or more management measures functioning together to address one or more planning objectives. An initial array of alternative plans has been formulated through combinations of management measures.

3.4.1 Initial Array of Alternatives Evaluation and Screening

The initial array of alternatives included a non-structural alternative and three different entrance/access channel alignments including the improvement of the exiting west entrance and construction of a new entrance/access channel either to the east end of the breakwater or through the center of the breakwater. These initial action alternatives underwent an initial round of qualitative screening. This screening was based primarily on whether the alternative improves access to the Commercial Marina. Two alternatives in the initial array were screened out early in the evaluation process. These include a non-structural alternative and the alternative that proposed construction of a central entrance/access channel.

The non-structural alternative was screened out because it would not meet any of the study objectives. A non-structural alternative could only include operation around tidal ranges and revised vessel traffic patterns outside the boat basin. Neither measure met the project objectives to improve vessel access, maximize maintenance efficiency, or improve safe harbor capabilities. Vessels already operate around tidal ranges due to the depth limitations within the Commercial Marina and if revising traffic patterns alone could improve conditions the vessel operators would have already made those adjustments.

The central entrance/access channel alternative was screened out after initial analysis demonstrated that, when compared to the other alternative alignments, a centrally located entrance channel would not incur greater benefits but would result in greater costs and impacts, including:

- Significantly increased additional dredging requirements of 12% - 25% greater dredging volume then all other alternative entrance alignments resulting in higher project costs. Due to the larger dredging volumes required, there was also the potential to go into a second dredging season, further increasing costs and impacts.
- Waves and current would be perpendicular to channel, increasing navigation challenges and a less efficient route. While a central channel entrance alignment would reduce the overall length of the "new" federal channel, the channel alignment would be counter to standard design practice and would align vessel traffic broadside to currents and waves. EM 1110-2-1110 recommends navigation channels to align with the natural channels in pre-project bottom contours when possible due to increased maintenance dredging, and currents and waves not being in-line with the channel.
- Significant increased maintenance dredging requirements on an annual basis due to increased shoaling conditions compared to other alignments both inside and outside the marina. Sediment is typically prone to settle out in the existing large natural shoaling areas around the riverside of the breakwater. Additionally, since the center alignment is perpendicular to the current, the waves and current moving through that area will move sediment back into that channel.
- Significant increased cost and complexity regarding modifying an existing federal structure which may not be as simple as removing a portion of the structure. Additional strengthening may be required. Total impact to removal of timber breakwater is estimated around 325' (federal channel plus slopes and standoff).
- Increased wave and current action through a new, larger gap in the breakwater. The breakwater was installed to prevent wave and wake action into the Commercial Marina and, qualitatively, any removal will have a negative impact although certain areas along the breakwater alignment would likely vary in severity.
- Increased impacts on eel grass areas.
- Impacts to recreational clamming beds and the designated shellfish preserve not impacted under the other entrance alignments.

3.4.2 Final Array of Alternatives*

A summary of the final array of alternatives is included below. All action alternatives (Alternatives 2-5) would include improving the LSF moorage area depth and width associated with Port Dock 7 to accommodate the design vessel. Maps of the final array of alternatives are presented in figures as listed below. All alternatives include disposal of dredged material per the assumptions described in Section 3.2.6 and appropriate mitigation for the alternative's unavoidable impacts to eelgrass.

- **Alternative 1 No-Action** (Figure 2-1): This alternative is the baseline condition as described in Section 2.3 and used for comparison against the other proposed actions.
- **Alternative 2 West Entrance** (Figure 3-3): Alternative 2 includes the deepening and widening of the west entrance/access channel outside the Commercial Marina and the Port Dock 5 and Port Dock 7 in-marina channels to the authorized depth with allowable over depth. It also includes deepening the Port Dock 7 moorage area to the authorized depth with allowable over depth. The alternative would require the relocation of one

outfall structure that is located on the shore along the west entrance channel alignment within the Commercial Marina (Figure 2-2).

- **Alternative 3 West Entrance with Hoist Dock Access** (Figure 3-4): Alternative 3 includes the deepening and widening of the west entrance/access channel outside the Commercial Marina and the Port Dock 5 and Port Dock 7 in-marina channels to the authorized depth with allowable over depth. It also includes deepening and widening the hoist dock access channel and deepening the Port Dock 7 moorage area and the hoist dock berth to the authorized depth with allowable over depth. The alternative would require the relocation of one outfall structure that is located on the shore along the west entrance channel alignment within the Commercial Marina (Figure 2-2).
- **Alternative 4 East Entrance** (Figure 3-5): Alternative 4 includes the deepening and widening of the east entrance/access channel outside the Commercial Marina and the Port Dock 7 in-marina channel to the authorized depth with allowable over depth. It also includes deepening the Port Dock 7 moorage area to the authorized depth with allowable over depth. The alternative would require the relocation of the 12-inch ductile iron water supply pipe that crosses from the southern shore of the Yaquina River northeast to the shore adjacent to the east end of the Embarcadero Marina.
- **Alternative 5 East Entrance with Hoist Dock Access** (Figure 3-6): Alternative 5 includes the deepening and widening of the east entrance/access channel outside the Commercial Marina and the Port Dock 7 in-marina channel to the authorized depth with allowable over depth. It also includes deepening and widening the hoist dock access channel and deepening the Port Dock 7 moorage area and the hoist dock berth to the authorized depth with allowable over depth. This alternative would include the relocation of the 12-inch ductile iron water supply pipe and abandoned sewage line that crosses from the southern shore of the Yaquina River northeast to the shore adjacent to the east end of the Embarcadero Marina.

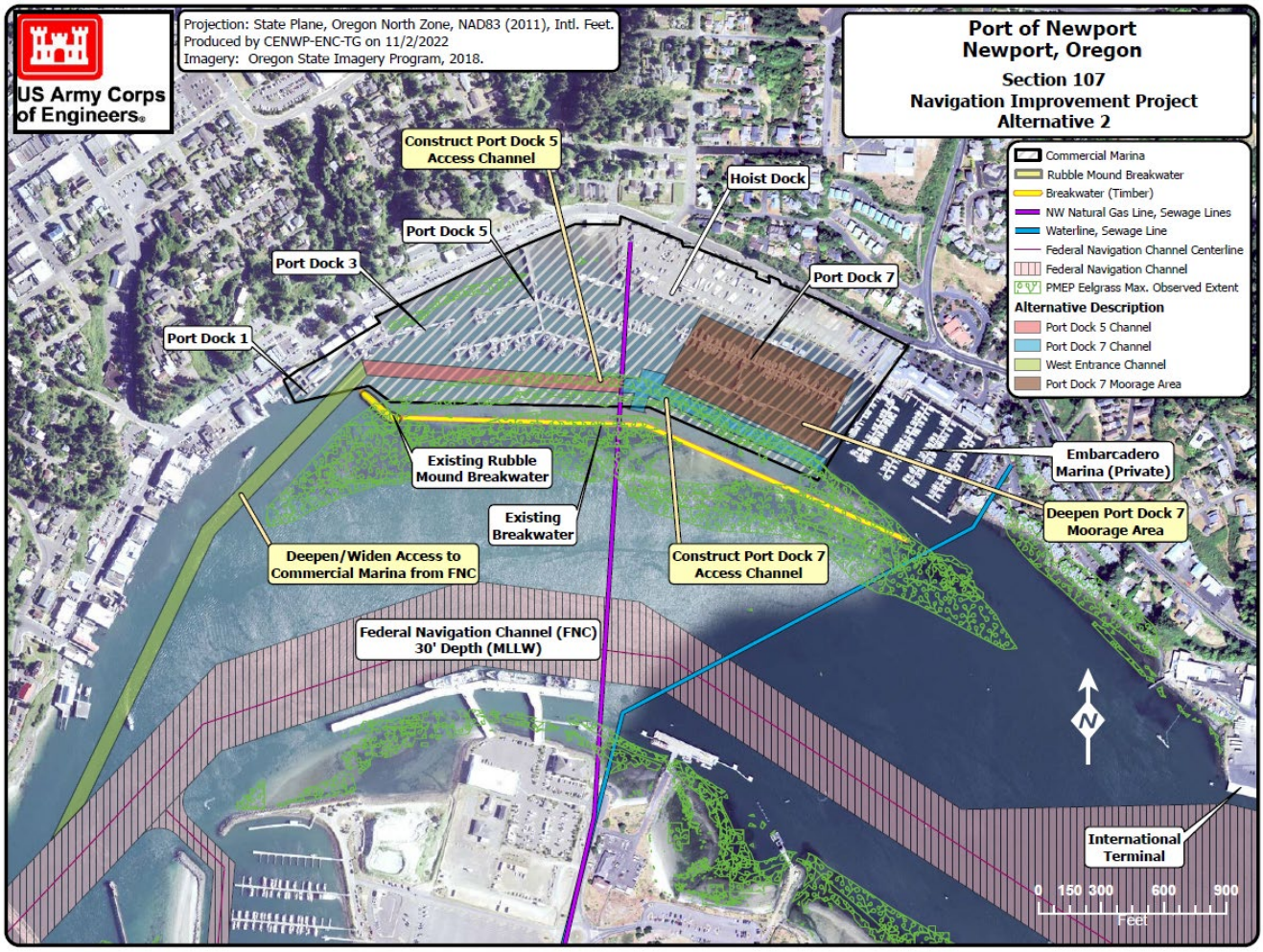

Figure 3-3. Alternative 2 West Entrance

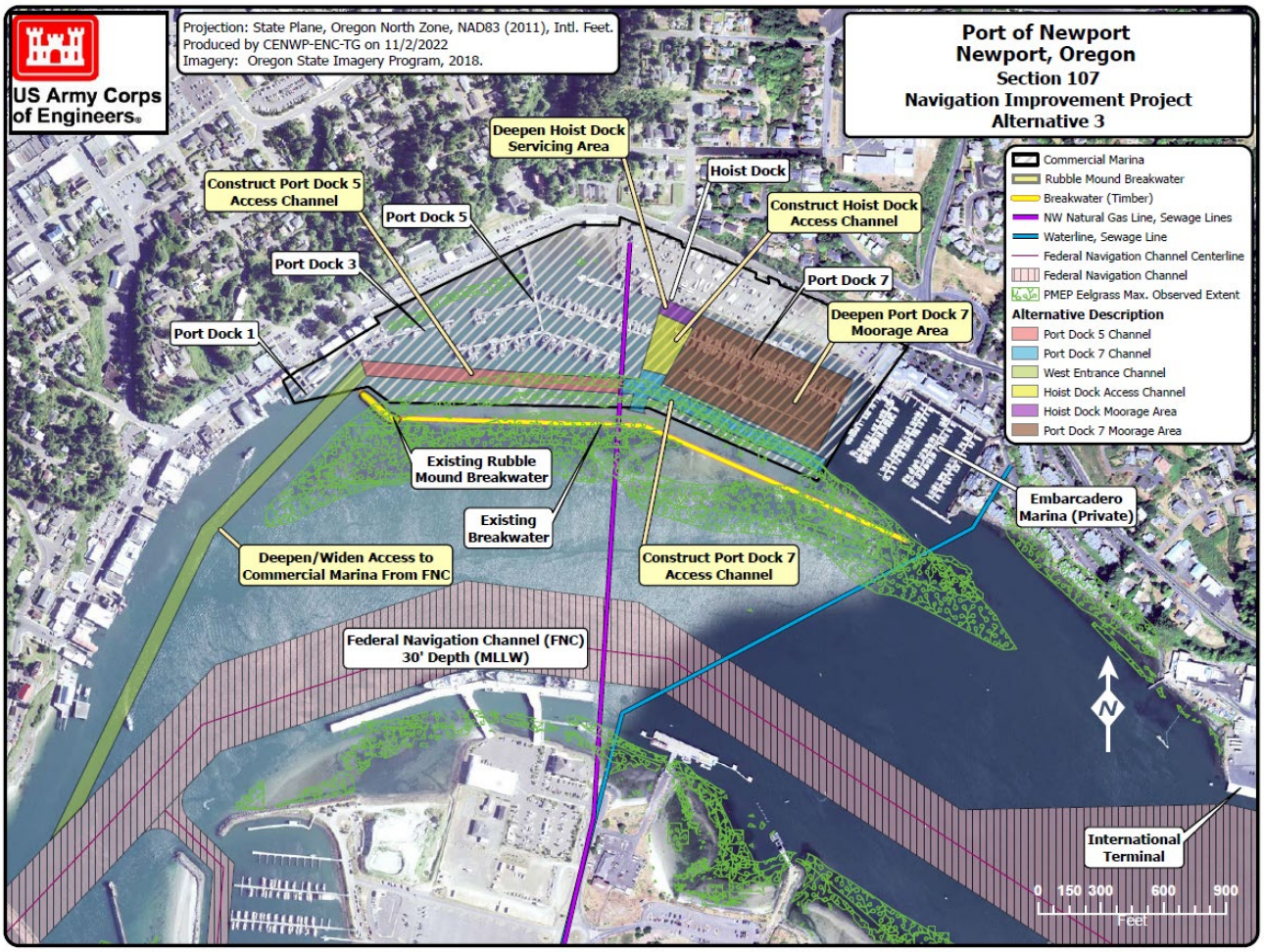

Figure 3-4. Alternative 3 West Entrance with hoist dock access

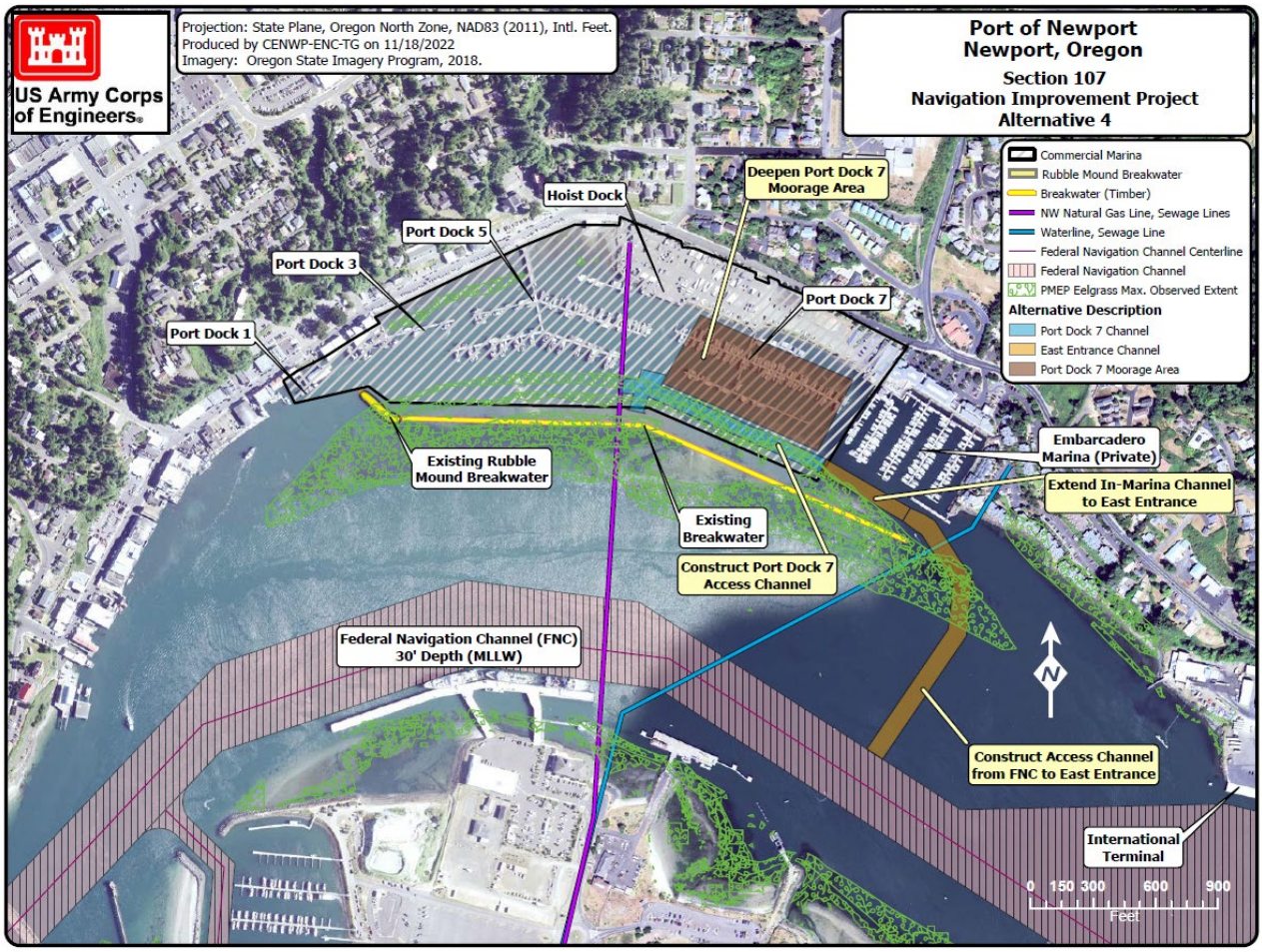

Figure 3-5. Alternative 4 East Entrance

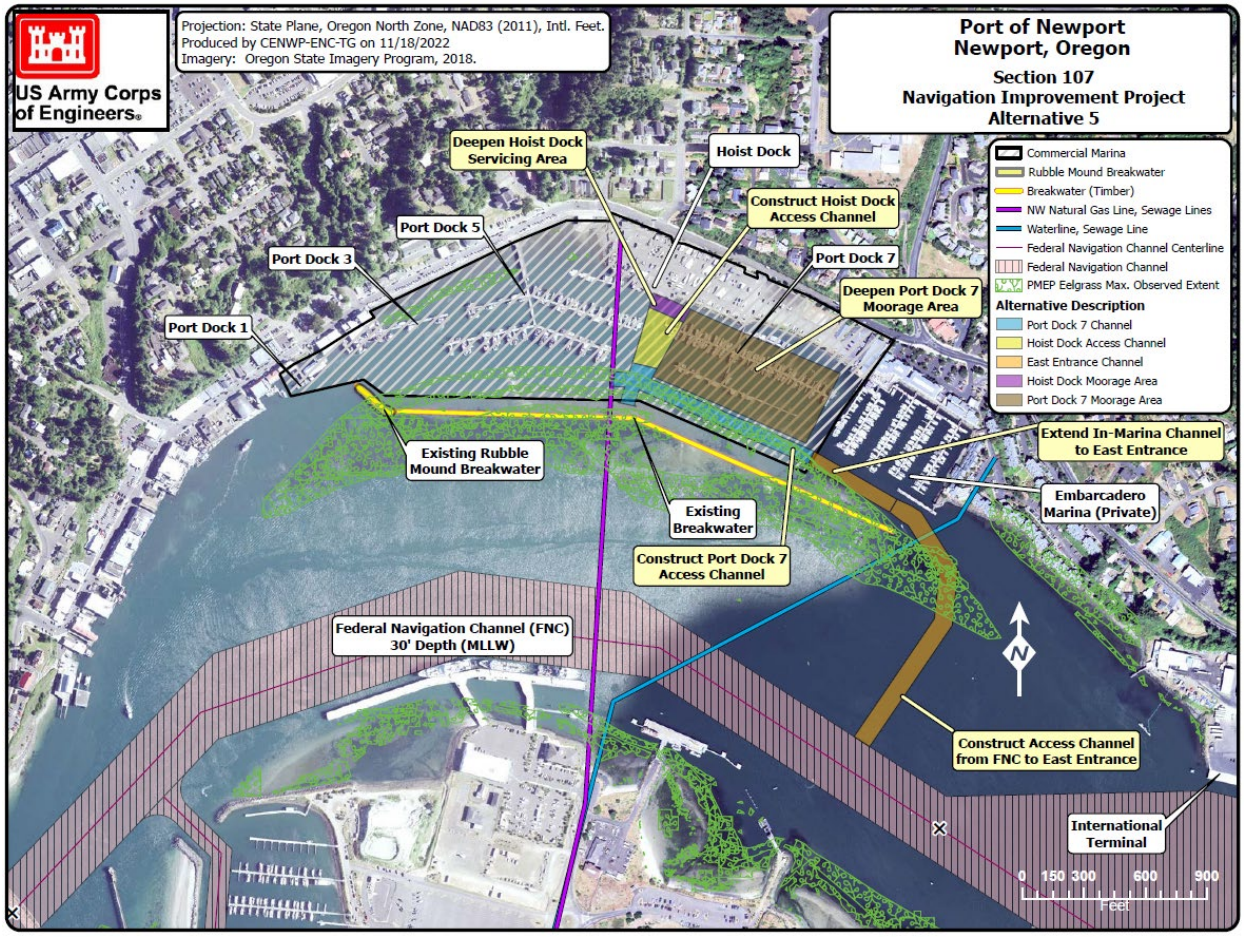

Figure 3-6. Alternative 5 East Entrance with hoist dock access

3.5 Plan Comparison and Selection

The Federal objective for water resource projects is to identify the project alternative with the maximum net benefits while protecting or minimizing impacts to the environment. The final array of alternatives is considered across four benefits accounts and the four USACE criteria to identify both the NED maximizing and comprehensive benefits maximizing alternative.

3.5.1 Alternative Evaluation and Comparison

The P&G requires all studies to consider the impact of various alternatives with respect to four accounts: NED, Regional Economic Development (RED), Environmental Quality (EQ), and Other Social Effects (OSE). The P&G also requires all studies use the four P&G criteria (efficiency, effectiveness, completeness and acceptability) to facilitate evaluation and display of effects of alternative plans.

3.5.1.1 National Economic Development

The NED account displays changes in the economic value of the national output of goods and services. The objective of NED is to maximize increases in the net value of the national output. This is done by comparing the difference in the value (benefits) produced by the project to the value of the resources (costs) required to produce those goods and services or construct the

project.

This section displays the costs and benefits for the NED account. Economic evaluation of the final array of alternatives focused on operational utility and operating costs of the vessels hosted by the Commercial Marina facilities as well as the practices associated with limited moorage. The plan formulation process evaluated LSF requirements (docks and berthing areas) for each alternative as these improvements are required to realize the project benefits. LSF improvements are assumed at Port Dock 7 for all action alternatives. LSF improvements at the hoist dock are only assumed for Alternative 3 and Alternative 5. Dredging volume is the main project cost driver, particularly for mudstone as it is more difficult to dredge. Additional project cost drivers include required relocations of the South Newport water supply pipe under the east entrance alignment or the seafood plant outfall under the west entrance alignment. Key cost drivers for each alternative are summarized in Table 3-1.

Table 3-1. Key Project Cost Drivers

Alternative	Sand Volume (cubic yards (cy))	Mudstone Volume (cy)	Total Volume (cy)	Water Supply Relocation	Outfall Relocation
Alternative 2 West Entrance	115,100	88,130	203,230	No	Yes
Alternative 3 West Entrance and hoist dock access	125,340	91,140	216,470	No	Yes
Alternative 4 East Entrance	142,520	88,010	230,530	Yes	No
Alternative 5 East Entrance and hoist dock access	152,750	91,020	243,770	Yes	No

Table 3-2 displays the NED costs and benefits of each alternative associated with navigation improvements in the Commercial Marina. Costs are displayed at the June 2025 price level and have been annualized using the fiscal year 2025 discount rate of 3.0% and are presented at the project year price level, presented as an AAEQ cost. The costs include all economic costs including project first costs (construction cost with any associated lands, easements, rights-of-way, and relocations, disposals, planning, engineering and design, and construction management) for the Federal project, associated LSF improvements at Port Dock 7, associated LSF improvements at the hoist dock (if applicable), interest during construction, and 5-year Cycles for O&M dredging expenses. Details of the economic evaluation as well as sensitivity analysis, primarily concerning uncertainties in vessel or commodity fleet forecasts, appears in Appendix B.

Table 3-2. Economic Analysis and Comparison of the Final Array of Alternatives (October 2024 price level, $1,000), Discount Rate 3.0%

Alternative	Project First Cost	AAEQ Construction Cost	AAEQ O&M	Total AAEQ Cost	AAEQ Benefits	AAEQ Net Benefits	BCR
NAA	$0	$0	$0	$0	$0	$0	0.0
Alternative 2	$12,985	$505	$39	$546	$533	-$13	1.0
Alternative 3	$13,475	$524	$39	$565	$642	$77	1.1
Alternative 4	$19,354	$752	$39	$794	$505	-$289	0.6
Alternative 5	$19,862	$772	$39	$814	$614	-$200	0.8

3.5.1.2 Regional Economic Development

RED analysis is conducted using the USACE certified Regional Economic System (RECONS), a model developed by the Institute for Water Resources (IWR). The RECONS Civil Works Spending module estimates the regional impacts of USACE direct investment and operational expenditure. -The RED impact analysis was evaluated at the local, state, and national levels. The local-level analysis represents the Lincoln County, Oregon. The state-level analysis includes the State of Oregon. The national level includes the 48 contiguous U.S. states. Table 3-3 displays results for local characteristics of the Regional Economic Analysis.

Table 3-3. Regional Economic Development Output by Alternative, 2025 Price Level

Alternative	Project Construction Cost ($1000s)	Jobs Supported Local (FTE)	Local Labor Income K$	Local Value Added ($1000s)
NAA	$0	0	$0.00	$0.00
Alternative 2	$12,985,000	54	$4,460,229	$6,200,218
Alternative 3	$13,475,000	56	$4,628,539	$6,434,188
Alternative 4	$19,354,000	80	$6,647,922	$9,241,357
Alternative 5	$19,862,000	83	$6,822,415	$9,483,922

3.5.1.3 Environmental Quality

The environmental quality account considers non-monetary effects on ecological, cultural, and aesthetic resources. Under this account, the preferred plan should avoid or minimize environmental impacts in the project area to the extent practicable considering other criteria and

planning objectives. The No Action would have no impact on environmental or cultural resources. The action alternatives may have permanent and short-term ecological impacts as detailed in Chapter 4, but would likely have no effects to cultural resources or aesthetic qualities in the project area. Important ecological resources that would be affected by the action alternatives include eelgrass beds and shellfish areas. A preliminary assessment solely based on the overlap of areas identified in Figure 3-7. Table 3-4 presents a worst-case scenario assuming resources are indeed present, and that dredging activities would completely remove these habitat functions within the channel prism. The East Entrance alternatives (4 and 5) would have the greatest impact on eelgrass with almost an acre more removal, whereas the West Entrance alternatives (2 and 3) would have a slightly greater impact on the shellfish preserve by including deepening of the Port Dock 5 channel. Figure 3-8 and Table 3-4 depict the maximum acreage of shellfish and eelgrass areas that could be altered under each action alternative, excluding mitigation activities.

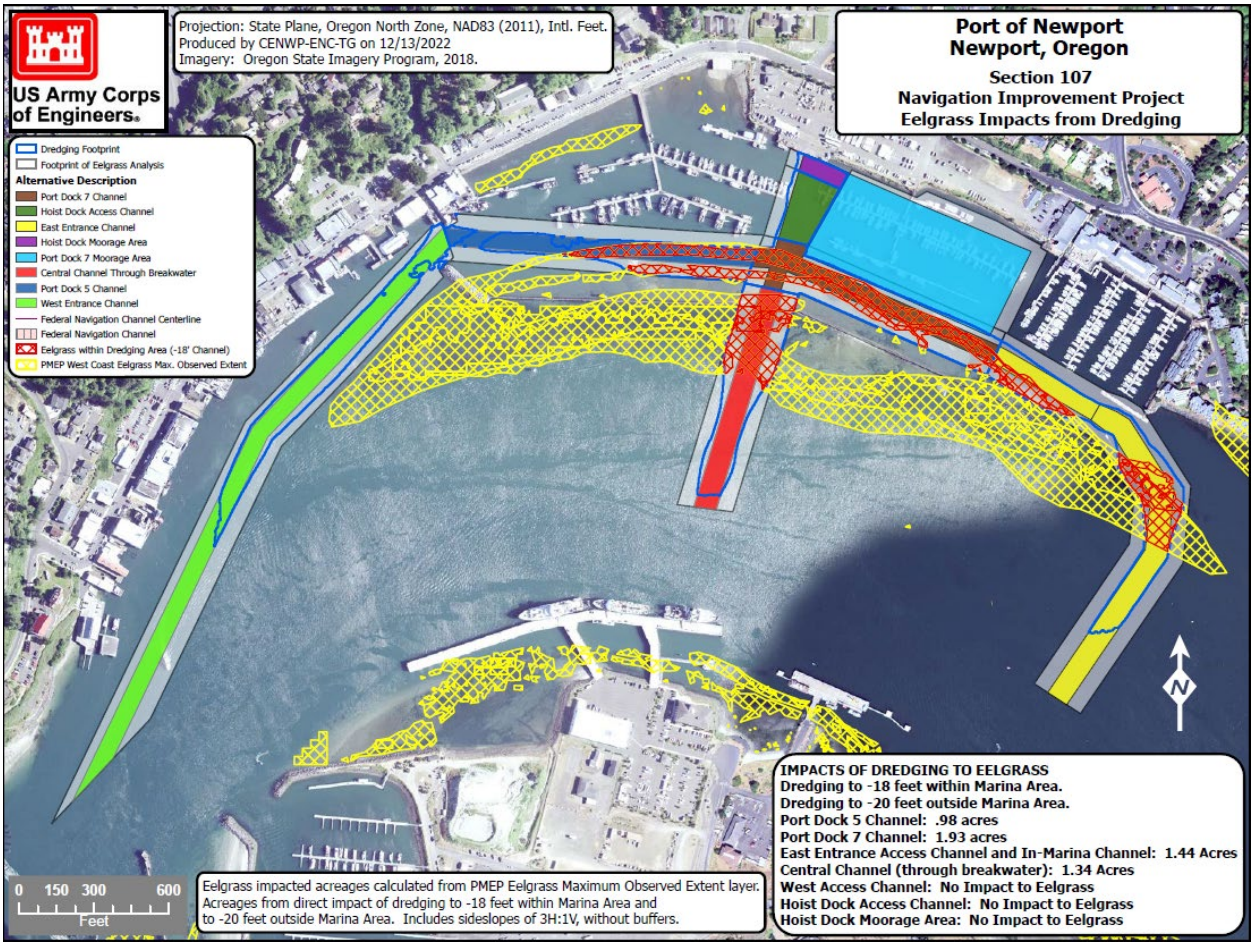

Figure 3-7. Overlap between the maximum extent of eelgrass historically observed and measures considered under each alternative.

Table 3-4. Environmental Quality Criteria – Assessment of aquatic habitats affected

Alternative	Eelgrass	Shellfish Beds
Alternative 2 West Entrance	3.24	1.87
Alternative 3 West Entrance and hoist dock access	3.24	1.87
Alternative 3 East Entrance	4.14	1.74
Alternative 5 East Entrance and hoist dock access	4.14	1.74

Detailed descriptions of the analysis and impacts appear in Chapter 4. Section 4.3 provides the list of resources considered but screened from further study and the rationale for exclusion from detailed analysis.

Because the total cargo throughput is not predicted to increase due to deepening, no shore-based changes in air pollutant emissions are anticipated to result from channel improvements. Increased depths could actually reduce congestion and allow vessels more flexibility of movement and less idling time than in the future without-project conditions. Additionally, larger vessels would be less reliant on moorage at the seafood processing berth. Docking at the seafood processing facilities requires ships to rely on generators as there are no land-based electrical hook-ups available. Both these factors could potentially result in reduced air pollution associated with vessel operations and less reliance on shore-based infrastructure.

3.5.1.4 Other Social Effects

Channel improvements would not induce long term additional growth including additional traffic, noise, or lighting compared to the future without-project condition. Although there likely would be a short-term increase in these factors during construction as described in Chapter 4. Channel Improvement should reduce traffic congestion which would increase the safety profile of the Commercial Marina by increasing space and maneuverability. Channel improvements would also improve safe harbor capabilities.

No significant construction or operational impacts to the human environment are expected. Populations of minority, juvenile, elderly, and low-income people would not experience disproportionately high or adverse effects from any of the proposed action alternatives. Schools/childcare facilities and hospitals are dispersed throughout the area and are not disproportionately located near the project area. Thus, disproportionately high and adverse impacts to children are not expected. Overall, based on the absence of adverse impacts to human health and safety risk, this project would not have disproportionately high and adverse impacts to any communities.

Given the close proximity of the East and West entrance alignment to each other as well as no expected change in overall cargo or significant construction or operational impacts to the human environment, other social effects are expected to be relatively the same among the various alternatives analyzed.

It can be assumed that actions taken by USACE and the Port to maintain and improve the navigation conditions will contribute to maintaining employment and general community wellbeing. This will maintain cohesion throughout the community, as jobs and incomes will remain stable, overall maintaining a healthy local economy.

3.5.1.5 P&G Criteria

Completeness, effectiveness, efficiency, and acceptability are the four evaluation criteria specified in the P&G in the evaluation and screening of alternative plans. Alternatives considered in any planning study should meet minimum subjective standards of these criteria to qualify for further consideration and comparison with other plans.

Completeness is the extent to which the alternative plans provide and account for all necessary investments or other actions to ensure the realization of the planning objectives, including actions by other Federal and non-Federal entities.

Effectiveness is the extent to which the alternative plans contribute to achieve the planning objectives.

Efficiency is the extent to which an alternative plan is the most cost-effective means of achieving the objectives, consistent with protecting the nation's environment.

Acceptability is the workability and viability of an alternative plan with respect to acceptance by State and local entities, tribes, and the public and compatibility with existing laws, regulations, and public policies.

Table 3-5 evaluates compares the final array of alternatives against these criteria and the four accounts.

Table 3-5. Table of Effects

Metrics	BCR	Annual Net Benefits ($1000s)	Improved Hoist Dock Access	Local Value Added ($1,000)	Locally Supported Jobs	Eelgrass area impacted (acres)	Improved Safety (YES/No)	Safe Harbor Capacity (Yes/No)	Improved Community Cohesiveness (yes/No)	Accounts for all Necessary Investments (Yes/No)	Implementable (Yes/No)
Federal Objectives	**Maximize Economic Development**					**Protect and Restore Natural Systems**					
Guiding Principles	**Sustainable Economic Development**					**Healthy and Resilient Ecosystems**	**Public Safety**				
P&G Accounts	**NED**	**NED**	**NED**	**RED**	**RED**	**EQ**	**OSE**	**OSE**	**OSA**		
Planning Objectives	**1 & 4**	**1 & 4**	**3**	**1 & 4**	**2 & 4**	**6**	**2**	**5**			
Formulation/ Evaluation Criteria	**Efficiency**	**Effectiveness**	**Effectiveness**	**Effectiveness**	**Effectiveness**	**Effectiveness**	**Effectiveness**	**Effectiveness**		**Completeness**	**Acceptability**
Alternative 1. No Action	0	$0	No	$0	0	0	N	N	N	Y	Y
Alternative 2: West Entrance	1	($13)	No	$6,200	54	3.24	Y	Y	Y	Y	Y

Metrics	BCR	Annual Net Benefits ($1000s)	Improved Hoist Dock Access	Local Value Added ($1,000)	Locally Supported Jobs	Eelgrass area impacted (acres)	Improved Safety (YES/No)	Safe Harbor Capacity (Yes/No)	Improved Community Cohesiveness (yes/No)	Accounts for all Necessary Investments (Yes/No)	Implementable (Yes/No)
Alternative 3: West Entrance + Hoist Dock	1.1	$77	Yes	$6,434	56	3.24	Y	Y	Y	Y	Y
Alternative 4: East Entrance	0.6	($289)	No	$9,241	80	4.14	Y	Y	Y	Y	Y
Alternative 5: East Entrance + Hoist Dock	0.8	($200)	Yes	$9,484	83	4.14	Y	Y	Y	Y	Y

Based on this evaluation summarized above, all action alternatives are considered complete because they provide and account for all necessary investments or other actions to ensure the realization of the planned effects. The No Action Alternative is not complete.

In addition, all action alternatives analyzed are effective in meeting the objectives to improve vessel access from the federal channel and to berthing and moorage areas as well as to improve safe harbor capabilities and maximize efficiency of maintenance expenditures. However, only the alternatives that include the hoist dock access and berth improvement measures (Alternatives 3 and 5) improve vessel access to the hoist dock and improve the berthing area. Therefore, Alternatives 3 and 5 are more effective than Alternatives 2 and 4 as they meet more of the project objectives. The No Action Alternative only meets the objective to avoid and minimize impacts to special aquatic habitats as much as possible as there would be no impacts to special aquatic habitats.

The East Entrance Alternatives (4 and 5) and Alternative 2 are effective at achieving benefits but have a higher cost relative to benefits when considered against lower cost plans or plans with greater benefits and are, therefore, not as efficient as Alternative 3.

Finally, all alternatives are acceptable in terms of compatibility with existing laws, regulations, and public policies, are fully implementable, and would meet user needs.

3.5.2 Identification of the NED Plan

The primary decision criteria for identifying the NED Plan includes reasonably maximizing net benefits while remaining consistent with the Federal objective of protecting the nation's environment. Reasonably maximizing net benefits means identifying the alternative that results in the greatest net benefits, which is calculated by taking average annual economic benefits less the average annual costs for each alternative. Table 3-2 shows the net benefits and benefit cost ratio for each of the final array of alternatives, the average annual benefits for each identified alternative, and its benefit cost ratio. The NED plan was identified as Alternative 3 – West Entrance with Hoist Dock Access. This alternative best meets the study objectives in a cost-effective manner. NED is evaluated using net benefits and benefit-cost ratios calculated using the average annual equivalent costs and benefits. Alternative 3 is the NED maximizing plan with a BCR of 1.1 and net average annual benefits of $77,000. The NED Plan is -20 MLLW in the West Entrance and -18 MLLW in Port Dock 5 and Port Dock 7 channels as well as for the Hoist Dock Access Channel and both LSFs (hoist dock and Port Dock 7 berthing area deepening).

Compared with other alternatives, the NED plan will also reduce the area of eelgrass impacts by 0.9 acres and increase the area of overlap with existing shellfish beds by 0.13 acres. The data source used to estimate shellfish beds was largely based on the Shellfish Preserve established on the north side of the breakwater, but the GIS shapefile showed a footprint that was larger and offset from the protected shellfish area. With the inclusion of a mitigation plan that addresses impacts to eelgrass habitat, the NED plan is sufficiently protective of the environment to have no significant impact and remains consistent with the Federal objective of protecting the nation's environment.

3.5.3 Comprehensive Benefits Plan

The Comprehensive Benefits Plan is the alternative that reasonably maximizes benefits across each of the four accounts described in Section 3.5.1. The RED, EQ, and OSA accounts allows for a broader consideration of benefits beyond economic development. When the

Comprehensive Benefits Plan differs from the NED plan, additional assessment can be completed to determine if the Comprehensive Benefits Plan would be more suitable due to secondary benefits such as safety, reduced life risk, ecosystem benefits, and/or improvements to the regional economy. Table 3-5 Summarizes the results from the four accounts. Based on these results, USACE has also identified Alternative 3 as the Comprehensive Benefits Plan as it has the highest total net benefits while reducing the effects to eelgrass under the EQ account.

3.5.4 Plan Selection

Alternative 3 – West Entrance with Hoist Dock Access was identified as the Recommended Plan, NED Plan, and Comprehensive Benefits Plan. These alternative addresses the moorage shortages, transportation inefficiencies, and navigation safety concerns caused by inadequate channel and moorage depths at the Commercial Marina while minimizing environmental impacts. The recommended plan is within the overall federal cost investment limit for Section 107 of $15,000,000. A detailed cost estimate was developed for the Recommended Plan and based on October 2024 price levels. The estimated first cost for construction is $13,475,000. The estimate for Total Project Cost is $14,266,000. The federal share of the total project cost is estimated to be $6,999,000 and non- federal share is estimated to be $7,267,000. This equates to 90 percent federal and 10 percent non-federal for the GNF based on the authorized depth of -18’ MLLW for in-marina channel and a -20’ MLLW for the entrance channel. The Port would be responsible for 10 percent of the costs for the GNF and 100 percent of the costs to implement the LSFs. The annualized O&M costs over the period of project performance (50 Years) at the FY2025 discount rate of 3.0% are estimated at $39,000. The AAEQ Benefits for the period of analysis are estimated to be $642,000 resulting in AAEQ Net Benefits of $77,000 and a BCR of 1.1.

4 Affected Environment and Environmental Consequences*

4.1 Overview

For the purposes of this report, USACE focuses on the affected human environment and potential effects that could result from alternatives under consideration. USACE considered 21 potential resource areas that constitute the affected environment and evaluated potential effects predominantly at the landscape scale. USACE relied on existing data sources and reference materials to inform the effects analyses. The geographic extent of the analyses for resource areas such as water quality, air quality, noise and potential effects to habitats and species was limited to the lower Yaquina estuary and the aquatic environment in the immediate project vicinity that could be affected by proposed in-water activities. Potential effects to socioeconomic and cultural resource areas were evaluated at a scale appropriate to the relevant human population, such as census blocks or population centers within an approximate 10-mile radius that could be directly or indirectly affected by any proposed improvements to the marina or navigation channel.

USACE considered potential immediate or short-term effects that would occur over the course of construction. Long-term effects were those anticipated to occur or extend beyond the approximate 2-5 years it could take to complete any proposed marina and channel improvements, with some variability in the implementation timeline depending on which measures are included in a given alternative. Lastly, effects to resources are described in terms of their relative magnitude in comparison with the No Action alternative. Table 4-1 delves further into the characterization of effects.

4.2 Scope of analysis

In considering potential effects, USACE relied on peer-reviewed publications, technical reports, state and federal agency resource maps and tools accessible online, and other citable references. There was no new research initiated nor extensive data collected in this planning phase so potential environmental consequences were inferred based on available information. The only exception were the resource areas that required surveys or testing to sufficiently characterize the existing environment.

4.2.1 Description of effects to resources

Potential effects to environmental and cultural resources were characterized in terms of the likely magnitude, duration, and geographic extent. Most resource areas had effects that would range from negligible to minor, occur within two years of potential implementation, and predominantly be noticeable at the local scale.

Table 4-1 Classification of effects to resources

Effects Classification	Classification type	Description of effects classification
No effect / Negligible	Magnitude	Activity would not have effects to resource or would have negligible effects that are not observable or

Effects Classification	Classification type	Description of effects classification
		measurable
Minor	Magnitude	Activity would have observable or measurable effects that would have minimal or effectively minimized changes to the characteristics of the resource
Moderate	Magnitude	Activity would have observable or measurable effects that would alter the overall function or characteristics of the resource to a degree that would necessitate consideration of mitigation.
Short-term	Duration	Effects to resource would have a duration of up to two years
Long-term / Permanent	Duration	Effects to resource would have a duration greater than two years or would be permanent
Local	Geographic Context	Effects would occur solely within the individual geographic unit of analysis
Regional	Geographic Context	Effects would occur within multiple geographic units of analysis or within the entire regional area of analysis

4.3 Resources and environmental conditions screened from further analysis

Several resources were considered and screened from further analysis because all alternatives have a low likelihood of resulting in discernible effects. USACE briefly describe the current state of these resources below, but they will not be discussed further under the affected environment or environmental consequences.

4.3.1 Floodplains

Yaquina Bay is located in Federal Emergency Management Agency (FEMA) Special Flood Hazard Area Zone AE, with an assumed 'high risk' of flooding (i.e., 1% Annual Chance Flood). Figure 4-1 shows the FEMA flood risk map for the proposed project area. Any measure or alternative that could result in increased flood risk (e.g., removal of the existing breakwater or construction of a central channel through the breakwater that would compromise its integrity) was screened from further consideration. All proposed work would be fully within the Lower Yaquina River floodway, which is also part of the base floodplain. Nonetheless, potential effects of dredging, channel maintenance, and dredge material disposal under action alternatives would not be vastly different than ongoing channel maintenance and placement activities under the No Action.

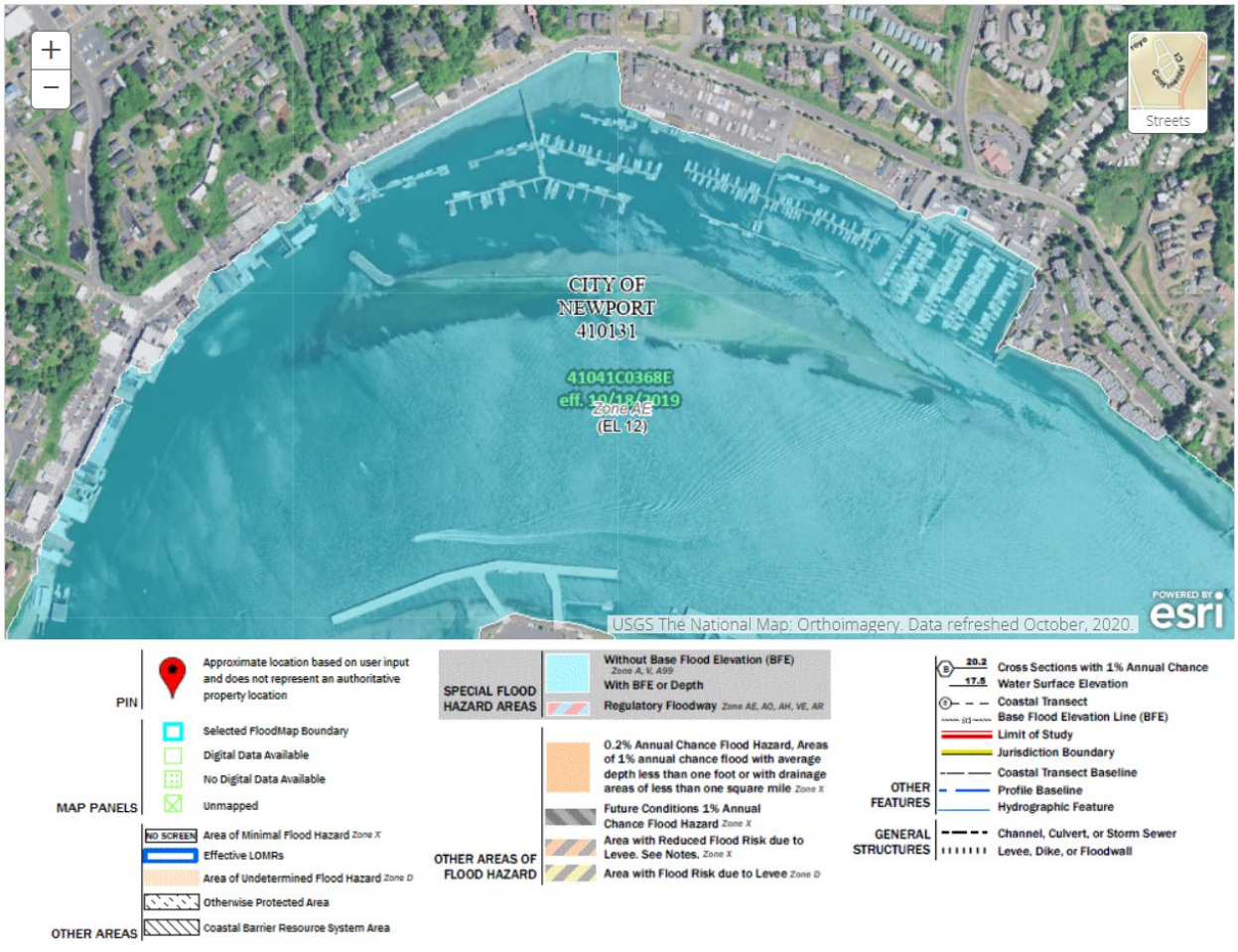

Figure 4-1. FEMA Flood Risk Map for Newport, Oregon (FEMA, 2021)

4.3.2 Land Use

The National Oceanic and Atmospheric Agency's (NOAA's) Coastal Change Analysis Program identified five dominant land cover classes in Lincoln County, OR (NOAA 2022). In descending order, Lincoln County predominantly includes forests, open water, scrub/shrub, grasslands, and low-intensity development (NOAA 2022). Between 1996 and 2016, there was a marked decrease in grassland areas (-14%), forests (-5%), and emergent wetlands (-8%); and increases in high (+10%) and low-intensity (+6%) development, developed open space (+11%), barren land (+11%), agriculture (+6%), and woody wetlands (+6%) (NOAA 2022). The affected environment of this study occurs within open waters, with no direct bearing on surrounding land uses. None of the alternatives under consideration would change surrounding land use. Any future improvements to Port facilities would most likely be in the footprint of existing infrastructure and not result in a change to the land use classification.

4.3.3 Noise

4.3.3.1 In-air

The population size of Newport and South Beach and the proximity of traffic using Highway 101, which runs through both towns as it passes over Yaquina Bay, suggest that in-air sound,

measured in decibels (dB) on an A weighted scale (dBA), could be close to 50 dBA based on traffic alone (FTA 2018) in and around the Project Area. The nearby urban and industrial centers and activities, including the Port of Newport, Port of Toledo, local marinas and airports, commercial and recreational vessels, and the strong winds and waves coming onshore from the Pacific Ocean suggest even higher ambient sound levels in Yaquina Bay and River. Commercial and recreational fishing vessels, along with waterfront activities, can generate significant sound levels. Sounds are produced by heavy trucks, forklifts, marine vessels, tugs, tools and equipment used on piers and shoreline industrial sites. A study of port facilities in central Europe found that industrial noise from cooling units, cranes, parking areas, and activities occurring on terminal yards can lead to SPLs ranging from 55 to 198 dBA (Curovik et al. 2021) and noise from other heavy equipment can range from 73-101 dBA (WSDOT 2020). During poor weather conditions, vessels may use fog horns which can reach sound levels of 90 dBA (FTA 2018). The City of Newport Comprehensive Plan, as amended (City of Newport 2023), considered potential noise issues and acknowledged that the Newport area has very few chronic noise issues. The majority of noise was attributed to traffic in commercial areas, and jet planes or helicopters that may use the Newport Municipal Airport or Coast Guard facilities. There was no mention of noise generation, noise disturbance, or preferred sound levels in Chapter 5 (Port Facilities) or Chapter 7 (Yaquina Bay and Estuary Section) of the Comprehensive Plan. Thus, it is unlikely that proposed dredging activities would violate the City ordinance or result in public complaints. None of the alternatives under consideration would result in significant increases to noise above and beyond the noise levels generated by road traffic and commercial and recreational vessels transiting in and around the marina.

4.3.3.2 In-water

Ambient in-water sound in the Project Area is affected by many factors including: wind and waves from the Pacific Ocean, commercial and recreational vessel use, sounds from resident aquatic animals, nearby land masses and the ocean floor, currents, etc. A recent study of ambient ocean sound for Oregon's nearshore environment observed maximum and minimum levels of 136 dB referenced to a standard pressure level of one micro Pascal (re µPa) and 95 dB re 1 µPa, respectively, with an average level of 113 dB re 1 µPa over a period of one year (Haxel et al. 2012). This level could vary given different recreational and commercial vessels; up to 150 dB for smaller fishing vessels (Hildebrand 2005), up to 186 dB for large vessels, 81 to 166 dB for empty tugs and barges and up to 170 dB for loaded tugs and barges (Richardson et al. 1995) within the frequencies between 20 and 5000 hertz (Hz).

The basic rule of the city and county noise ordinance is one of reasonableness. If warranted, the Newport City police may use the Oregon Department of Environmental Quality (ODEQ) to determine if a state or federal law has been violated. If it has, it is the responsibility of the ODEQ to enforce. Noise levels under all action alternatives would be comparable to those associated with regular channel maintenance under the No Action. Channel dredging and material placement will likely involve mechanical dredges, a scow, barge, and perhaps a crane. Work will not include pile driving, blasting, or any other impulsive sounds that would cause noise levels to exceed background sound levels. The noise associated with continuous commercial and recreational boater traffic, ongoing operations at Port facilities, and use of the International Terminal likely overshadows the intermittent dredging and placement activities conducted by USACE under all action alternatives.

4.3.4 Hydrology

Yaquina Bay is a river dominated system with a drainage area of approximately 254 square

miles. The tide range is approximately 6 ft near the Port and head of tide is approximately 26 miles upstream from the mouth. Flow averages less than 500 cfs from June to October, while discharge in winter can average 2,500 cfs (Shirzad, et al., 1988). Water circulation in the Yaquina Bay and River is driven by freshwater and saltwater inputs. When river discharges are high, the estuary is characterized as having a salt wedge that has a sharp density interface between the upper layer of freshwater and bottom layer of saline water. The upper, freshwater layer gradually thins as it moves seaward and the denser seawater inversely becomes thinner as it moves landward. Vertical mixing is limited during this period. During the summer and early fall, the volume of salt-water coming into the estuary during tidal flows exceeds river inputs. This results in a well-mixed water column and disappearance of the vertical salinity gradient.

No significant effects to hydrology are anticipated from the Project. The action alternatives would result in slightly deeper channels and would only have marginal effects to local hydrology. No structural changes to the breakwater are proposed under any action alternative.

4.3.5 Tribal Resources, Tribal Rights, and Tribal Lands

The area potentially affected by the project has been the homeland for multiple tribes since time immemorial. Tribal interests include Tribal lands, protected Tribal resources, Tribal rights, or assets held by the Federal government in trust to Indian Tribes or individuals. For example, treaty-reserved rights may include the right to fishing, hunting, and gathering on and off reservations. Tribal resources may include cultural resources that are subject to historic preservation laws and natural resources that are not protected by the historic preservation laws. Tribal resources in the study area could include cultural resources, wildlife, plants, aquatic resources, fish, wetlands, water quality, air quality, recreation, visual quality, noise, social and public health, and sacred sites. USACE, as part of the United States Government, has a Federal trust responsibility toward federally recognized Tribal nations pursuant to treaties between the United States and Tribes and engages in meaningful Nation-to-Nation consultation with Tribes per Executive Order 13175 and the January 26, 2021, Presidential Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships.

USACE sent letters, inviting potentially affected Tribes to engage in Nation-to-Nation consultation, to the Confederated Tribes of the Siletz Indians (CTSI), the Confederated Tribes of the Grand Ronde Community of Oregon (CTGR), and the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians (CTCLUSI) on February 27, 2025 and July 18, 2025. The letters briefly described the project, asked for participation identifying Tribal interests within or in the vicinity of the area of analysis, and provided USACE points of contact. USACE has received no response from affected Tribes to date.

None of the alternatives under consideration would result in actions likely to have a discernible effect on Tribal Trust Resources and Tribal Trust Resources have been screened from further analysis at this time. Should responses from affected Tribes be received identifying effects, an analysis of the effects on Tribal Resources Tribal Rights, and Tribal Lands will be completed at that time.

4.4 Aesthetics

4.4.1 Affected Environment

The Project is in Yaquina Bay at Newport, Oregon. The scenic views in the Yaquina Bay include a historic bridge, Yaquina Bay lighthouse, a historic bayfront area, various shipping vessels, the

Pacific Ocean on the west, and a backdrop of the coastal range mountains to the East (Oregon Coast Visitors Association, 2021). The Yaquina Bay Bridge is one of the most prominent features in the viewscape and is often featured in Newport travel brochures, postcards, and the like. Conde McCullough was the chief engineer, and it retains many of the characteristic steel accents that have contributed to its allure since construction in 1934 (HistoricBridges.org, 2021).

4.4.2 Environmental Consequences to Aesthetics

4.4.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, aesthetic views would likely remain unchanged, as there would be no significant changes to the marina or the size and character of boats accessing Port facilities. Aesthetic views and the viewshed experienced by local residents, visitors, businesses, and property owners would likely remain unchanged, barring some unforeseeable change due to a natural disaster or future unanticipated development.

4.4.2.2 Alternative 2: West Entrance

While there would likely be no substantial change to aesthetic views of the marina over the long-term, construction activities could result in short-term minor to moderate adverse effects. While some visitors and residents may enjoy seeing barges and dredges operating within view of the shoreline, others would likely deem vessels eyesores that detract from more natural views. Potential adverse effects to the viewshed would continue throughout the approximate 2-year construction period and be most apparent in the immediate vicinity of the marina. There are no anticipated long-term or regional adverse effects to aesthetics that would result from the deeper, wider channels or moorage improvements at Port Dock 7 that are proposed under this alternative. Alternative 2 would likely result in minor, short-term, local adverse effects to aesthetic views.

4.4.2.3 Alternative 3: West Entrance with Hoist Dock Access

Alternative 3 would include all measures under Alternative 2, but also add an access channel and dredging of a berthing area at the hoist dock. These additions are unlikely to result in additional adverse effects to aesthetics that were not already considered under Alternative 2. However, the additional dredging work would likely result in more construction days (i.e., on the order of days or weeks) so there could be a negligible increase in the duration of potentially obstructed views. Alternative 3 would likely result in minor, short-term, local adverse effects to aesthetic views.

4.4.2.4 Alternative 4: East Entrance

Effects to aesthetic views resulting from Alternative 4 would be nearly identical to Alternative 2, however, the construction work and potential viewshed obstructions would shift to the eastern entrance instead of the western entrance. More dredging would likely be required to achieve proposed target depths in the eastern entrance and submarine cable lines might also require relocation to avoid utility disruptions to the local community. These constraints would likely add weeks or months to the construction schedule, which would increase the duration of potential adverse effects to the viewsheds. Alternative 4 would likely result in minor, short-term, local adverse effects to aesthetic views.

4.4.2.5 Alternative 5: East Entrance with Hoist Dock

Alternative 5 includes all measures considered under Alternative 4, but as with Alternative 3, it

would add improvements to facilitate better access to the hoist dock. Effects to aesthetics would be slightly greater for Alternative 5 than all other alternatives because of the likely increased duration of construction work. More time would likely be needed to successfully deepen and widen the eastern entrance due to existing utility cables, and improvements to the hoist dock access would add even more workdays. Overall, Alternative 5 would result in minor, potentially long-term (i.e., 2-5 years), local adverse effects to aesthetic views.

Effects from the preferred alternative to Air Quality : Effects not significant.

4.5 Air Quality

4.5.1 Affected Environment

The Clean Air Act (CAA), 42 U.S.C. §§ 7401-7671q, established a comprehensive program for improving and maintaining air quality throughout the United States. The focus of the CAA is to reduce ambient concentrations of air pollutants and toxins that degrade air quality; the reduction of air pollution in turn improves the human and biological environment. The intent of the act is achieved through the permitting of stationary sources, restriction of toxic-substance emissions from stationary and mobile sources, and the establishment of National Ambient Air Quality Standards (NAAQS) as set by EPA (USEPA 2024a). The CAA prohibits federal agencies from funding, authorizing, or approving plans, programs, or projects that do not meet or conform to the NAAQS requirements.

EPA sets the national air-quality standards for six “criteria” pollutants as emitted by any stationary, mobile, marine, and/or land-based source. These standards establish threshold levels for carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2). For PM, separate standards have been established for particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

EPA has transferred primary implementation and enforcement of the CAA authority for federal air-quality standards to state, local, or tribal regulatory agencies. The delegated agency is responsible for establishing a State Implementation Plan (SIP) specific to their region. If the NAAQS are exceeded, the region is designated as a nonattainment area and is mandated to implement measures to improve the region air quality by way of a stricter SIP. Once NAAQS are met, regions are deemed maintenance areas.

The project area in Lincoln County is not within a nonattainment or maintenance area for any of the criteria pollutants nor has ongoing Yaquina FNC maintenance and transport of sediments to the ODMDSs to date resulted in a change to the reported air quality status for these pollutants.

Effects on air quality would be considered significant if implementation of an alternative plan would result in exceedance of federal or state air quality standards established for criteria pollutants.

Emissions from construction equipment may cause a temporary reduction in air quality at the project site during construction. Construction activities involving heavy equipment will cease once construction is completed. Direct emissions from a 1-year construction period and long-term indirect emissions from O&M over the 50-year project lifespan were quantified for each alternative. Pollutants were assessed for potential effects to air quality in accord with the CAA.

Emissions are listed in tons for each action alternative in Table 4-2. It is assumed that the No Action alternative would not result in any additional emissions beyond the ongoing navigation that would occur under all alternatives. The bases for comparison across alternatives are the emissions associated with deepening navigation channels to improve boater access to marina features, including the hoist dock. USACE assumes the emissions associated with subsequent federal O&M of the new channels would increase emissions over what is expected under the No Actional Alternative the same across all action alternatives.

Table 4-2 Air Pollution Emissions in metric tons

Emission	Alt 2 West Entrance	Alt 3 West Entrance & Hoist Dock	Alt 4 East Entrance	Alt 5 East Entrance & Hoist Dock
Reactive Organic Gases/ Volatile Organic Compounds (ROG/VOC)	0.31	0.34	0.32	0.35
Carbon Monoxide (CO)	3.17	3.47	3.30	3.59
Sulfur Oxides (SOx)	0.02	0.02	0.02	0.02
Nitrous Oxides (NOx)	13.70	14.93	14.27	15.50
Particulate Matter – 2.5 micron ($PM_{2.5}$)	0.42	0.46	0.44	0.48
Particulate Matter – 10 micron (PM_{10})	0.44	0.47	0.45	0.49
Carbon Dioxide (CO_2)	1,343.13	1,476.96	1,394.16	1,527.99
Methane (CH_4)	0.01	0.01	0.01	0.01
Carbon Dioxide Equivalents (CO_2e)	0.06	0.06	0.06	0.07

4.5.2 Environmental Consequences to Air Quality

No Action Alternative

Currently, USACE performs maintenance dredging activities in the Yaquina entrance/main channel between RM -1 and RM 4+20, South Beach Marina access channel, and portions of the Yaquina River above RM 4. USACE typically uses the hopper dredge *YAQUINA* to perform annual maintenance dredging of the main channel below RM 4+20. This includes removal of up to 450,000 cy of material over a period of up to 52 days. Within the project vicinity, maintenance

dredging at the South Beach Marina Access Channel occurs every 5-8 years and USACE is authorized to remove up to 25,000 cy over approximately 30 days. Either a mechanical (clamshell) or hydraulic cutterhead (pipeline) dredge can be employed to remove accumulated sediments from the South Beach Boat Basin Access Channel and may require the use of additional tugs and scows to facilitate placement. All material dredged from the main access channel and South Beach Marina has ultimately been placed in one of two ODMDSs. Estimates for emissions assume maximum dredge quantities and 24-h workdays. Actual emissions in a given year will likely be less, based on smaller maintenance dredge volumes. Any effects to air quality would be temporary. Annual maintenance dredging, including transport of sediments to the ODMDSs, has not prevented the area from meeting NAAQS.

4.5.2.1 Alternative 2: West Entrance

All action alternatives would necessitate dredging and placement beyond the scope of existing maintenance of the FNC. Alternative 2 would add approximately 4,800 ft of channel dredging and 170,850 cy of additional material, assuming an 18' channel depth, would be removed and placed at the ODMDS or an appropriate upland site. Dredging quantities and workdays in recent years have been below these limits, with roughly 391,000 and 341,000 cy dredged in 2021 and 2022. The amount of material dredged in a given day can vary significantly based on several environmental factors. Looking solely at the previous two years, the average rate of dredging and ODMDS placement from the Yaquina Bay entrance channel to RM 4.4 was over 8,500 cy per day. If we assume a similar rate for any new dredging under Alternative 2, we anticipate up to 21 additional days of work in first year, and significantly fewer days to maintain new channels in out years. These additional days of work would have a minor, short-term, local, adverse effects to air quality due to the increase in the number of barge or truck trips and the number of days the dredge would be operating. There has not been any mechanical dredging of the South Beach Boat Basin channel for several years so USACE referenced recent clamshell dredging at Port Orford and the Rogue River entrance channel to estimate the dredging rate that might be expected should action alternatives require mechanical dredging in lieu of a hopper dredge. In 2022, a clamshell dredge removed 14,176 cy of material in 7 days at Port Orford and 41,612 cy were removed via clamshell from the Rogue River entrance channel in 19 days. Based on these projects, we estimate a mechanical dredging rate of 2,100 cy per day[2]. Thus, it could take up to 82 days of dredging to execute Alternative 2 channel improvements solely via mechanical means. Either option (i.e., hopper or mechanical dredging) would result in an increase in emissions as outlined in Table 4-2, though effects to air quality will be minimized if a hopper dredge can perform at least a portion of the work. Maintenance dredging would result in additional emissions similar to those resulting from the South Beach Marina access channel, where maintenance dredging occurs on a similar cycle proposed for the project under alternative 2. Maintenance dredging for the South Beach Marina and portions of the Yaquina River above RM 4, including transport of sediments to the ODMDSs, has not prevented the area from meeting NAAQS. UACES assumes this will also be true of emissions from maintenance of the Alternative 2 channel improvements. Alternative 2 would result in adverse effects to air quality that would be minor, short-term, and local.

[2] All dredging, regardless of the dredge type, denotes tons/event and an assumed annual occurrence of dredging and placement operations to remove the maximum quantities summarized in text is considered one event.

4.5.2.2 Alternative 3: West Entrance with Hoist Dock Access

The inclusion of the hoist dock improvements under Alternative 3, along with all elements of Alternative 2, would result in an increase in dredging. Using the same assumptions for the hopper and clamshell dredging rates as stated under Alternative 2, removing a total of 183,407 cy of material under Alternative 3 would require one more day of hopper dredging and 6 additional days of mechanical dredging and placement in comparison with Alternative 2 (Table 4-2). Alternative 3 would result in adverse effects to air quality that would be minor, short-term, and local, though of slightly greater magnitude than Alternative 2.

4.5.2.3 Alternative 4: East Entrance

Alternative 4 has the same elements as Alternative 2 but would replace the option for a west entrance channel with an east entrance channel. The net effect would be fewer linear ft of new channel dredging (i.e., 4100 ft versus 4800 ft under Alternative 2) but a higher total dredging volume (i.e.,187,637 cy). This would require just over 22 days of dredging with a hopper and just under 90 days of mechanical dredge operations, with associated ODMDS placement. There would be slightly greater emissions than Alternatives 2 and 3 under mechanical dredging operations, but emissions would be fairly similar to Alternatives 2 and 3 if hopper dredging is viable. Overall adverse effects to air quality would be minor, short-term, and local.

4.5.2.4 Alternative 5: East Entrance with Hoist Dock Access

Inclusion of both the east entrance and hoist dock under Alternative 5 increases the total projected dredging volume to 200,190 cy. This Alternative would require the greatest amount of material removal, and thus the longest duration of work. Alternative 5 would require an estimated 24 workdays with a hopper dredge, or approximately 96 days of mechanical dredging and placement. Emissions would be slightly greater than under all other action alternatives (Table 4-2), however, the effects to air quality would still be minor, short-term, and local.

Effects from the preferred alternative to Air Quality : Effects not significant

4.6 Aquatic Resources and Wetlands

4.6.1 Affected Environment

Yaquina Bay is a drowned river mouth of the Yaquina River that covers roughly 4,000 acres at high tide. The ODFW defines several ecoregions throughout the state and proposed work would fall within the “nearshore” ecoregion, identified as the area from approximately three nautical miles offshore to the supratidal zone and into the portions of estuaries subject to saltwater intrusion (ODFW, 2016). Yaquina Bay is broadly defined by the State as estuarine habitat that ranges from the bay mouth to the point where the average difference in water level caused by tidal change is 0.06 m or just under 2.5 inches (ODFW, 2016). It includes mudflats, macroalgae beds, seagrass beds, and tidal marshes and swamps. The Yaquina ODMDSs are located approximately 2.5 miles offshore north and south of the Yaquina River entrance channel in waters 112-152 feet deep. These areas were officially designated by EPA for sediment disposal in 2012, but records indicate that dredged material disposal has been occurring in areas offshore from the Yaquina River since Congress authorized dredging in Yaquina Bay in 1919. They are situated in the open ocean adjacent to the shoreline and characterized by shifting sands that do not provide unique breeding, spawning, nursery, feeding, or passage habitat (USACE, EPA 2012).

Proposed channel improvements would occur in the vicinity of the Port of Newport between RM 1 and just above RM 2, on a map, this corresponds to the portion of river between the Yaquina Bay Bridge and McLean Point and includes seagrass beds, tidal flats, and rocky substrate associated with the breakwater and shoreline armoring. This lower reach of the river is largely oligotrophic (i.e., low nutrient, high oxygen), with reported summer salinities ranging from 31-35 parts per thousand (ppt), and average bottom water temperatures 10-15^{o}C (Kentula & DeWitt, 2003; DeBen, Clothier, Ditsworth, & Baumgartner, 1990). Nutrient inputs are dominated by marine sources (Brown, et al., 2007) and dissolved oxygen concentrations have been recorded between roughly 3 and 12 mg l^{-1}, with variability noted based on temperature and potential influx of hypoxic shelf water (Brown & Power, 2011).

Seagrass beds, primarily species *Zostera marina* (i.e., eelgrass), are found throughout Oregon estuaries and commonly occur in subtidal waters. Nonnative *Zostera japonica* is also present, but typically occurs in more shallow areas. Eelgrass beds in intertidal areas are limited by desiccation (i.e., from intertidal aerial exposure) so they are more prevalent in lower intertidal areas that are less exposed during tidal fluctuations (Boese, Alayan, Gooch, & Robbins, 2003). In Yaquina Bay, eelgrass has been reported at mean depths around 8 ft and detected up to a max depth of nearly 15 ft (Boese, et al., 2009). Light is one of the primary limiting factors for seagrass beds and they are generally more abundant in the lower portions of estuaries where water clarity is higher. This trend of decreasing eelgrass coverage as you move further upriver has also been observed in the Yaquina system (Kentula & DeWitt, 2003). Beds closer to the mouth tend to have greater shoot density, but there is spatial heterogeneity even within the same reach (Lewis & Henkel, 2016). The spatial extent and density of eelgrass is greatest in summer and lowest in winter and year to year coverage can also fluctuate (Sherman & DeBruyckere, 2018; Shafer & Bourne, 2012). A compilation of *Zostera* monitoring and mapping data collected in Yaquina Bay through 2012 as shown in Figure 4-2 indicates there may be eelgrass beds in the project area on either side of the existing breakwater, and intermittent patches under the port docks (Sherman & DeBruyckere, 2018). Other seagrass species previously detected in Yaquina Bay and River include *Ruppia maritima* and various species of *Phyllospadix*. The former is more likely in lower salinity waters of the upper reaches, and the latter is more commonly found attached to rocks in high-energy environments (Shafer & Bourne, 2012). USACE completed a hydroacoustic eelgrass survey (i.e., using a Biosonics DT-series digital echosounder with a 420-kHz, 6-degree single-beam transducer that generates monotone pulses at a rate of 10 Hz, and a 0.1-ms duration) of the project area in June 2023 (see results in Figure 4-3) and the Port contractor completed a more focused survey of the Port facilities in August 2023 (Figure 4-3). These more recent surveys provided updated information on the current footprint of eelgrass in the project area, while the prior maps for the historic extent were helpful in determining potential areas for mitigation.

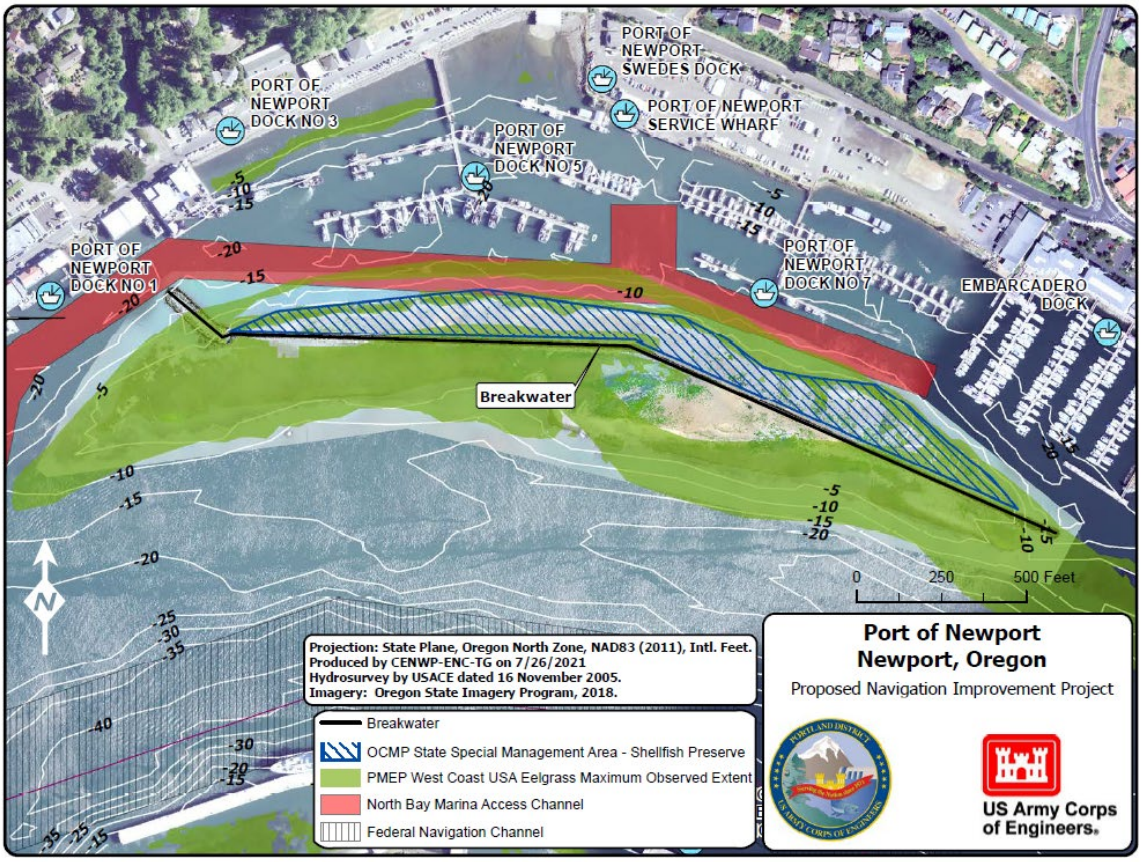

Figure 4-2. Potential Eelgrass Extent in Project Vicinity

Figure 4-3. Results for the extent of eelgrass within the project area based on hydroacoustic surveys completed in June 2023, with darker shading indicative of greater

eelgrass coverage.

Figure 4-4. Results from August 2023 eelgrass survey of marina access channel.

4.6.2 Environmental Consequences to Aquatic Resources and Wetlands

4.6.2.1 No Action Alternative

Aquatic resources in the project vicinity under the No Action alternative would be subject to the same seasonal, annual, or interannual variability that are likely the result of fluctuations in the aquatic environment that are beyond the scale and scope of proposed navigation

improvements. For example, salinity and temperature drive seasonal changes in the abundance and affect the overall distribution of macroalgae and *Zostera* in Yaquina Bay (Kentula & DeWitt, 2003). Temperature and water chemistry have also been shown to affect eelgrass growth, zonation patterns, and susceptibility to wasting disease (Kaldy, 2014; Kaldy, Shafer, & Magoun, 2015). We anticipate continued seasonal and interannual variability in eelgrass beds in Yaquina Bay independent of proposed channel improvements, but likely within the footprint of where beds have historically been observed (Figure 4-2). Alternative 2: West Entrance

Alternative 2 would include deepening Port Dock 5 and Port Dock 7 in-marina channels to the authorized depth. Assuming eelgrass could be present to the full extent of its historic distribution, deepening the Port Dock 5 and Port Dock 7 channels would convert intertidal waters to subtidal waters and may result in the immediate loss of up to three acres of eelgrass (Figure 4-4), that could be offset by establishing or enhancing eelgrass within one of three potential mitigation areas (Figure 4-5). Deepening the western entrance is not anticipated to result in any additional loss to eelgrass above the aforementioned acreage, as the western entrance already has an average depth that is deeper than the maximum 14.9 ft that *Z. marina* has historically been detected within Yaquina Bay (Boese, et al., 2009). All action alternatives would result in an immediate loss to eelgrass within the marina channels required to access Port facilities, and ultimately achieve project benefits. Alternative 2 would likely result in moderate, long-term, local adverse effects to aquatic resources. However, the establishment of new eelgrass beds would offset some of these adverse effects, as detailed further in the eelgrass mitigation plan (see Appendix D). Sediment placement within the ODMDS could result in temporary, localized, adverse effects to aquatic resources, but those effects would be to habitat and species as described under Sections 4.8 and 4.9.

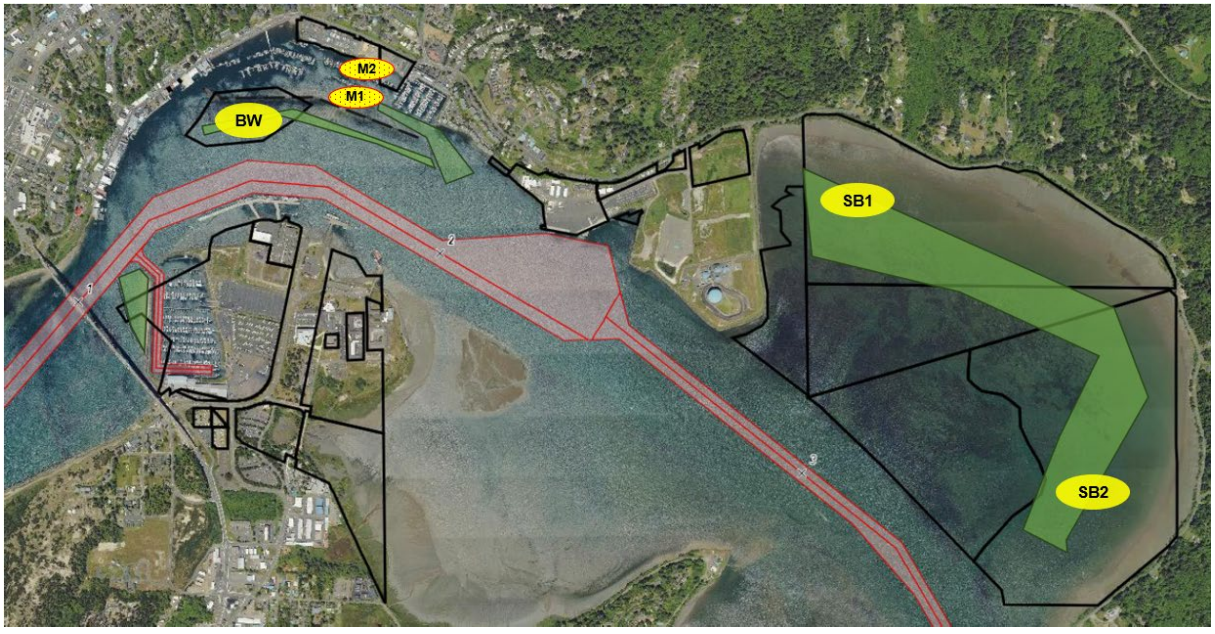

Figure 4-5 Marina eelgrass impact areas (i.e., M1 and M2), as well as areas identified for potential eelgrass mitigation (i.e., BW, SB1, and SB2).

4.6.2.2 Alternative 3: West Entrance with Hoist Dock Access

Alternative 3 would add dredging near the hoist dock, but available data on the historic extent of

eelgrass suggest that there would be no additional eelgrass effects (Figure 4-5). As with Alternative 2, there could be up to three acres of eelgrass loss from the Port Dock 5 and Port Dock 7 channel improvements. Alternative 3 would result in moderate, long-term, local adverse effects to aquatic resources, that would be offset through mitigation (Appendix C). Sediment placement within the ODMDS could result in temporary, localized, adverse effects to aquatic resources, but those effects would be to habitat and species as described under Sections 4.8 and 4.9.

4.6.2.3 Alternative 4: East Entrance

Deepening an eastern channel entrance would result in a greater potential loss to eelgrass habitat than Alternatives 2 and 3 because the average depths are currently much shallower than the western entrance. In addition, historic surveys indicate eelgrass could be present and in the direct path of eastern channel improvements. Construction of the east entrance could result in approximately 1.44 acres more direct adverse effects to eelgrass (Figure 3-7). The total potential eelgrass habitat loss caused by deepening the east entrance under Alternative 4 could be up to 4.15 acres, after accounting for Port Dock 7 channel improvements. Alternative 4 would result in moderate, long-term, local adverse effects to aquatic resources, but at a greater magnitude than Alternatives 2 and 3. The magnitude of mitigation would need to be greater to account for the likely additional adverse effects to eelgrass. Sediment placement within the ODMDS could result in temporary, localized, adverse effects to aquatic resources, but those effects would be to habitat and species as described under Sections 4.8 and 4.9.

4.6.2.4 Alternative 5: East Entrance with Hoist Dock Access

Similar to Alternative 3, adding hoist dock access under Alternative 5 is unlikely to result in any greater adverse effects to eelgrass beyond those evaluated solely for the east entrance. As under Alternative 4, Alternative 5 could similarly result in up to 4.15 acres of eelgrass habitat loss and moderate, long-term, local adverse effects to aquatic resources. The magnitude of mitigation would need to be greater than Alternatives 2 and 3 to account for the likely additional adverse effects to eelgrass. Sediment placement within the ODMDS could result in temporary, localized, adverse effects to aquatic resources, but those effects would be to habitat and species as described under Sections 4.8 and 4.9.

Effects from the preferred alternative to Aquatic Resources and : Effects not significant as a result of mitigation

4.7 Invasive Species

4.7.1 Affected Environment

There are numerous non-native species that occupy Oregon's estuarine environment including fish, invertebrates, and plants (see Appendix C). Invasive species that pose a known threat to native species and have been observed in Yaquina Bay include Japanese eelgrass (*Z. japonica*), Eurasian watermilfoil (*Myriophyllum spicatum*), European green crab (*Carcinus maenus*), Asian clam (*Corbicula fluminea*), purple varnish clam (*Nuttallia obscurata*), New Zealand mud snail (*Potamopyrgus antipodarum*), the colonial tunicate (*Didemnum vexillum*), Australasian isopod (*Sphaeroma quoianum*), Asian sea squirt (*Styela clava*), and Griffen's isopod (*Orthione griffenis*) (ODFW, 2016; Chapman, Breitenstein, & Dumbauld, 2012). A survey of the current distribution and abundance of invasive species within the project vicinity is beyond the scope of this document, but it is reasonable to conclude that some, if not all, of the above

species are present in the area.

4.7.2 Environmental Consequences of the Alternatives

4.7.2.1 No Action Alternative

Regular maintenance dredging of the existing FNC would continue under the No Action alternative. Any water-based transport of material removed from one area and taken elsewhere has the potential to introduce non-native species, namely through the operation of dredges, material transport, and use of other equipment necessary for placement. However, USACE implements measures to prevent and minimize the potential spread of invasive species to the maximum extent practicable.

Vessels and equipment used during dredging operations are regularly inspected and treated to prevent the spread of invasive mussels and other aquatic nuisance species. Construction equipment and supplies used by private contractors and intended for use in a work area that has been recently utilized in another waterbody often undergoes thorough cleaning and decontamination. There are regular onsite inspections of all vessels, equipment, pumps, and supplies (hulls, anchors, moorings, trailers, etc.) to be used in or around the water before work begins. Similar inspections are undertaken upon removal from any body of water. While USACE dredges are rarely removed from the water between dredge events, they do have a wash down system that is run to comply with EPA-issued Vessel General Permits (VGPs). The chain locker on hopper dredges is inspected annually to comply with another VGP requirement. Prior to starting a new project, the hopper, pipes, and pumps are flushed. Periodically, USACE may elect to perform a hull inspection of vessels through the use of a remote operated vehicle for the purpose of inspecting for invasive species. For all dredging and placement, the risk of introducing invasive species is minimized through strict adherence to these Best Management Practices (BMPs).

4.7.2.2 Alternative 2: West Entrance

Dredging of the West Entrance would increase the number of workdays in the water for both dredging and placement, in comparison with the No Action alternative. The anticipated increase in the duration of in-water work, along with dredging inside a new channel that could potentially have a higher prevalence of invasive species, could slightly increase the risk of translocating invasive species to new areas. However, this risk is fairly low given the O&M BMPs outlined earlier in this section. Alternative 2 would result in negligible, potentially long-term, local adverse effects to invasive species.

4.7.2.3 Alternative 3: West Entrance with Hoist Dock Access

Including hoist dock access channel dredging with a new west entrance channel under Alternative 3 could slightly increase the potential exposure to invasive invertebrates that may be more prevalent along the dock structures and moorage areas. Given this consideration, Alternative 3 could result in minor, potentially long-term, local adverse effects to invasive species.

4.7.2.4 Alternative 4: East Entrance

Effects to invasive species under Alternative 4 would likely be similar to that of Alternative 2, as they would each add a new entrance channel to the O&M dredging and placement operations occurring in lower Yaquina Bay. BMPs would greatly reduce the potential spread of invasive

species that may be present. However, Alternative 4 could result in negligible, potentially long-term, local adverse effects to invasive species.

4.7.2.5 Alternative 5: East Entrance with Hoist Dock Access

Alternative 5, which includes dredging a new eastern entrance and the hoist dock area, is expected to cause effects similar to those under Alternative 3. Effects would be slightly greater than those under the No Action, Alternative 2, or Alternative 4. Alternative 5 could result in minor, potentially long-term, local adverse effects to invasive species

Effects from the preferred alternative to Invasive Species: Effects not significant

4.8 Fish and Wildlife Habitat

4.8.1 Affected Environment

The Yaquina estuary has historically supported a wide array of resident and migratory fish, along with numerous invertebrate species (DeBen, Clothier, Ditsworth, & Baumgartner, 1990). The lower reaches of the river, particularly from approximately 12 km upstream to the mouth where oceanic influences on the abiotic environment are most prominent, tended to support a consistent array of species. While there were seasonal differences, the five most abundant species detected in the lower reach (i.e., Zone I) of Yaquina Bay in descending order were the buffalo sculpin (*Enophyrus bison*), English sole (*Parophrys vetulus*), Dungeness crab (*Cancer magister*), speckled sandab (*Citharichthys stigmaeus*), and starry flounder (*Platichthys stellatus*). Shiner sea perch (*Cymatogaster aggregata*) were also fairly abundant throughout the estuary but absent during winter (DeBen, Clothier, Ditsworth, & Baumgartner, 1990).

Yaquina Bay eelgrass beds (Figure 4-2) are important habitat for birds, fish, crabs, and other aquatic invertebrates. A recent study comparing fish abundance and diversity between dock and eelgrass habitats noted greater juvenile fish abundance in eelgrass, along with more stable species assemblages over time in the latter (Schwartzkopf, 2020). The most numerically abundant juvenile species sampled in the aforementioned habitats were saddleback gunnel (*Pholis ornata*), rockfish (*Sebastes* spp.), and Pacific staghorn sculpin (*Leptocottus armatus*). The sampling protocol in the Schwartzkopf (2020) study targeted fish <200 mm total length, thus was more limited than DeBen et al. (1990) which relied on otter trawls that were less discriminating. While stock estimates are highly variable in Yaquina Bay (Thompson, et al., 2017), Pacific herring (*Clupea pallasi*) are another important species that typically enter the estuary in February to spawn, release eggs that may attach to eelgrass blades, and the resulting juvenile fish utilize eelgrass beds and other estuarine areas as nursery habitat until fall (Oregon Sea Grant, 2019).

Tideflats are another important habitat in Yaquina Bay for shrimp, clams and shorebirds (Oregon Sea Grant, 2019). Bay clams including butter (*Saxidomus gigantea*), basket cockle (*Clinocardium nuttallii*), gaper (*Tresus capax*), Pacific littleneck (*Leukoma staminea*), and soft-shell (*Mya arenaria*) are all found in Yaquina Bay and important to recreational and commercial fisheries (Lewis, Fox, & DeWitt, 2019). Most of these species have been detected in Breakwater flat which borders the breakwater separating the Yaquina FNC from the Port of Newport (ODFW, 2025). While harvest does occur on the south side of the breakwater, flats along the north side of the breakwater are a designated shellfish preserve and take of clams is prohibited (ODFW, 2025). Ghost shrimp (*Neotrypea californiensis*) and mud shrimp (*Upogebia pugettensis*) are also commonly found within intertidal soft sediments of Yaquina Bay. These

burrowing shrimps are considered ecosystem engineers that can significantly alter the physical and abiotic conditions of the water and substrate (Fritz, 2002; Dumbauld, McCoy, DeWitt, & Chapman, 2021). They can create burrows to depths over a meter below the sediment surface and maximum densities in some locations within Yaquina Bay have exceeded 400 shrimp per square meter, though numbers of both species have significantly declined since peak numbers observed in the early 2000s (Dumbauld, McCoy, DeWitt, & Chapman, 2021). Burrowing shrimp are also an important prey source for crabs, birds, and fish. In fact, a recent study of Dungeness crab (*Cancer magister*) in Yaquina Bay indicated that juveniles of this important commercial and recreational crab species may preferentially select tidal flats with a higher density of mud shrimp burrows (Lewis, Young, Folger, & DeWitt, 2021).

Oyster reefs in coastal estuaries can provide numerous ecosystem services including wave attenuation, refugia habitat for juvenile fish, shoreline stabilization, and water filtration (Gray, et al., 2019). Historically, native populations of Olympic oysters (*Ostrea lurida*) were found in Yaquina Bay but overharvesting significantly depleted their numbers (Bohlen, 2019; ODFW, 2021b). Current efforts are primarily focused on recovery of the population, with no recreational or commercial harvest of the species permitted (ODFW, 2021b). Recent modeling efforts suggest that habitat in the lower estuary could be somewhat suitable for reestablishing native oysters, but higher salinities would likely be a limiting factor (Bohlen, 2019). The non-native Pacific oyster (*Crassostrea gigas*) has been introduced into Oregon estuaries for commercial aquaculture production and *C. gigas* grown and harvested in Yaquina Bay, but those oyster beds are considered private property.

There are numerous additional species that are known to utilize rocky shorelines, eelgrass beds, tideflats, and the broader aquatic environment of the lower portions of the estuary. Harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) often haul out on tideflats and port docks while resting (ODFW, 2021a). Birds are highly dependent on prey derived from diverse estuarine habitats found in Yaquina Bay and an array of species inhabit the estuary at various times throughout the year. Waterfowl are most prominent from September through May. For example, the brant (*Branta bernicla*), a migratory goose that winters in the bay, feeds almost exclusively on eelgrass. Other species like the great blue heron (*Ardea herodias*) can be seen year-around in tideflats and marshes. Shorebirds including the western sandpiper (*Ereunetes mauri*), whimbrel (*Nemenias phaeopus*), and dunlin (*Erolla alpina*) also feed in tideflats at low tide (Oregon Sea Grant, 2019).

The nearshore benthic environment outside the Yaquina River mouth is primarily medium-grain sand. The benthic community is dominated by amphipods, sand dollars, gastropods, and polychaetes. Various pelagic fish are found in the vicinity of ocean disposal sites, including salmonids, herring, anchovy, and surf smelt. Rocky patches and areas near the jetties support demersal species like sculpin, sea perch, numerous rockfish species, while open sand flats may host flatfish such as English sole and starry flounder (USACE, EPA, 2012).

4.8.2 Environmental Consequences of the Alternatives

4.8.2.1 No Action Alternative

Under the No Action, fish and wildlife habitat would be subject to ongoing effects from recreation, boat traffic, fishing, and regular channel maintenance at roughly the same frequency and level of intensity that has been occurring. USACE' channel maintenance dredging methods include hopper, hydraulic cutterhead, or mechanical means. Any suction dredging can cause entrainment to fish and other aquatic organisms near the benthic floor and temporarily disturb

benthic communities and prey resources for fish. However, the federal channels where dredging occurs are typically deeper, higher energy, and more dynamic than surrounding off-channel, subtidal, or intertidal habitats. Mobile organisms are anticipated to move beyond the work area, but sessile organisms are likely adversely affected by annual channel maintenance. The Yaquina River Entrance Channel (i.e., RM -1 to RM 4.4) is predominantly sand and dredging effects to the habitat are temporary and localized. Benthic organisms from adjacent areas are anticipated to recolonize the dredge prism within a few months. Potential effects to benthic habitat resulting from placement of material at the ODMDS were evaluated as part of EAs completed for both the Yaquina River ODMDS designation (USACE, EPA, 2012) and Yaquina River channel maintenance (USACE, 2015). Dominant benthic infauna at the ocean disposal sites is highly mobile and effects from material placement appear to be localized and temporary. Ongoing disposal associated with O&M dredging will result in some mortality of benthic fauna, fish, and crabs that may be in the immediate area. However, the benthic community appears to recolonize newly placed material within weeks and there are no anticipated long-term, adverse effects to foraging resources important to the broader fish and invertebrate community (USACE, EPA, 2012). The No Action is anticipated to result in minor, short-term, local adverse effects to fish and wildlife habitat.

4.8.2.2 Alternative 2: West Entrance

Improving the west entrance along with port dock access channels would involve deepening and widening existing channels. Assuming dredging would increase the maximum depth to approximately -20 MLLW and remove roughly 200,000 cy of material. Port dock access channels which are currently -5 to -15 ft MLLW would be permanently deepened to accommodate larger vessels. While areas would still be subtidal (i.e., below MLLW), the dredging would remove any existing vegetation within the dredge prism (see Figure 4-5), and likely preclude recolonization by new submerged vegetation post-dredging due to reduced light availability at the deeper depth. As discussed under Section 0., Alternative 2 could permanently remove approximately 2.91 acres of eelgrass that is important habitat for migratory birds, fish, crabs, and other invertebrates. In addition, the structural habitat complexity provided by submerged vegetation would be lost in proposed dredged areas. Effects to habitat, fish, and benthic species from ODMDS placement would be slightly greater than the No Action because of the minor increase in the number of disposal loads and workdays than what would typically be associated with ongoing channel maintenance. Effects to habitat, fish, and benthic organisms would still be considered minor, localized, and relatively short-term given regular disturbance that may favor species that are more adapted to these conditions. Alternative 2 would likely result in moderate, long-term, local adverse effects to fish and wildlife habitat.

4.8.2.3 Alternative 3: West Entrance with Hoist Dock

Effects to fish and wildlife habitat under Alternative 3 would not be substantially different or greater than those anticipated under Alternative 2. Primary adverse effects pertain to the loss of eelgrass habitat caused by new channel dredging and the hoist dock addition would cause a relatively minor increase to the dredge footprint affecting benthic habitat. The hoist dock's proximity to existing port facilities and structures might make certain species such as sculpin and rock fish more abundant in this region, but the disturbance caused by dredging would be of limited duration. Effects to habitat, fish, and benthic species from ODMDS placement would be slightly greater than the No Action and Alternative 2 because of the minor increase in the number of disposal loads and workdays. Effects to habitat, fish, and benthic organisms within the ODMDSs would still be considered minor, localized, and relatively short-term given regular disturbance that may favor species that are more adapted to these conditions. Alternative 3

would likely result in moderate, long-term, local adverse effects to overall fish and wildlife habitat, but effects would be of a slightly greater duration and magnitude than Alternative 2 due to additional dredging for the hoist dock.

4.8.2.4 Alternative 4: East Entrance

Effects under Alternative 4 would likely be greater than those under Alternatives 1-3 because the existing east entrance channel is much shallower, with some depths behind the breakwater - 5 ft MLLW, and would require roughly twice the amount of dredging and ODMDS placement when compared with the west entrance. These shallower regions could also support up to 1.44 acres more eelgrass that would be permanently removed should the eastern channel be deepened and maintained. Alternative 4 would result in moderate, long-term, local adverse effects to fish and wildlife habitat, but of a greater magnitude than Alternatives 2 and 3.

4.8.2.5 Alternative 5: East Entrance with Hoist Dock

Alternative 5 would results in similar effects to fish and wildlife habitat as Alternative 4, with a slight increase to the duration and magnitude of effects caused by proposed hoist dock improvements and additional placement volume within the ODMDSs. Alternative 5 would result in moderate, long-term, local adverse effects to fish and wildlife habitat of greater magnitude and duration than all other alternatives.

Effects from the preferred alternative to Fish and Wildlife Habitat: Effects not significant as a result of mitigation

4.9 Threatened/Endangered Species/Critical Habitat

4.9.1 Affected Environment

Several species listed under the ESA have a potential to occur within an approximate 5 km radius of the Port of Newport. The marine mammals and sea turtles listed in Table 4-3 would most likely be encountered outside the bay in the coastal marine waters beyond the river mouth. Sea turtles are transitory at best along the Oregon coast and their occurrence is considered rare, with most sightings associated with strandings or casualties of the gillnet fishery (Henkel, Suryan, & Langerquist, 2014). Similarly, blue, sei, fin, humpback, and sperm whales are a somewhat rare occurrence in or near Yaquina Bay. While transient killer whales (i.e., Bigg's killer whales) are known to occasionally enter Oregon estuaries such as Yaquina Bay (KATU News, 2017; Graves, 2025), perhaps in pursuit of marine mammal prey such as seals and sea lions, these individuals are not part of the ESA-listed SRKW that feed almost exclusively on Chinook salmon and are more commonly found in waters of the Puget Sound (Graves, 2025).

Coho salmon and green sturgeon occur in the project vicinity at various times throughout the year and Yaquina Bay is included as part of their critical habitats (73 FR 7816 and 74 FR 52300). Adult coho salmon are present in Yaquina Bay from September to April, whereas smolt are more abundant from February through July, with peak occurrence from mid-March to mid-May (NMFS, 2021). While not currently listed, fall chinook are known to occur in the Yaquina River from October to early March, and spring chinook may be found from August to early November. As with other Oregon estuaries, green sturgeon may occupy waters of Yaquina Bay from June through October; they spend the remainder of the year in nearshore waters of the coast. Coho salmon likely use Yaquina Bay for rearing, transitional habitat, and migration. Eelgrass beds likely provide important rearing habitat for pre-smolts, and other life stages may

also seek temporary refuge or forage within these vegetated areas. Yaquina Bay is part of the critical habitat for green sturgeon and likely supports their growth and development, with adults may have an affinity for deep channels and holes during the day, then move into tidal flats to forage at night (NMFS, 2021).

Northern spotted owl, short-tailed albatross, and snowy plover are in the wider region, but unlikely to occur in the immediate vicinity of the project. The Northern spotted owl prefers mature forests, and the short-tailed albatross is mostly transient and prefers foraging offshore. Western snowy plover may be present on the beaches north and south of the Entrance Channel, but unlikely in the action area because they would typically be found foraging along the beach or nesting in sparsely vegetated dune habitat. Neither of the aforementioned beaches has been designated a snowy plover management area.

Marbled murrelets may occur in the project vicinity, but are more likely to forage on anchovies, herring, and sand lance found just outside the breaker-line in coastal waters beyond the river mouth. There may be stands of old growth conifer forest that could support murrelet nesting habitat adjacent to the upriver portions of the Yaquina River. However, the closest important birding area for the species, which hosts relatively high numbers of murrelets, is at Yaquina head (National Audubon Society, 2021).

Yaquina ODMDSs have been sited to avoid unique breeding, spawning, nursery, feeding, or passage habitat that would be critical for threatened and endangered species (USACE, EPA 2012). NMFS proposed listing the sunflower sea star as threatened under the ESA on March 16, 2023 (88 FR 51). Sunflower sea stars are native to the west coast of North America and can be found in water depths ranging from intertidal to over 435 meters. They can be found occupying various substrates spanning Baja California, Mexico to the Aleutian Islands, Alaska. As determined for ongoing maintenance of existing FNCs on the Oregon coast, there is no evidence that dredging or dredged material placement would result in more than temporary, minimal, short-term adverse effects to sunflower sea stars that may be present in the vicinity of ODMDSs during material placement. There are no explicit maps of sunflower sea star distribution, but it is reasonable to conclude that some may occupy the navigation channels in coast rivers and nearshore areas. Mechanical and pipeline dredges may inadvertently collect or injure benthic organisms including sea stars (NRC 2002). However, sunflower sea stars are unlikely to occur in large numbers and the most likely immediate effect would be displacement, as any sea stars present would likely move away from the area of active dredging and disturbance.

Table 4-3. Species afforded protection under the Endangered Species Act that may occur in the project vicinity

Species	**Status**	**Federal Register Notice**	**Critical Habitat**
Fish			
Oregon Coast (OC) Coho Salmon *Oncorhynchus kisutch*	Threatened	76 FR 35755; 6/20/2011	73 FR 7816; 2/11/2008

Species	Status	Federal Register Notice	Critical Habitat
Oregon Coast (OC) Chinook Salmon *Oncorhynchus tshawytscha*	Candidate	88 FR 1548; 1/11/2023	
Southern DPS Green Sturgeon *Acipenser medirostris*	Threatened	71 FR 17757; 4/7/2006	74 FR 52300; 10/9/2009
Southern DPS Pacific Eulachon *Thaleichthys pacificus*	Threatened	75 FR 13012; 3/18/2010	76 FR 65324; 10/20/2011
Invertebrate			
Sunflower sea star *Pycnopodia helianthoides*	Threatened (proposed)	88 FR 16212; 3/16/2023	None proposed at this time
Marine Mammals			
Blue whale *Balaenoptera musculus*	Endangered	35 FR 18319; 12/2/1970	None designated
Fin whale *Balaenoptera physalus*	Endangered	35 FR 18319; 12/2/1970	None designated
Humpback whale *Megaptera novaeangliae*	Endangered	35 FR 18319; 12/2/1970	None designated
Southern resident killer whale *Orcinus orca*	Endangered	70 FR 69903; 11/18/2005	86 FR 41668; 9/1/2021
Sei whale *Balaenoptera borealis*	Endangered	35 FR 18319; 12/2/1970	None designated
Sperm whale *Physeter macrocephalus*	Endangered	35 FR 18319; 12/2/1970	None designated

Species	Status	Federal Register Notice	Critical Habitat
Reptiles			
Loggerhead sea turtle *Caretta caretta*	Threatened	43 FR 32800; 7/28/1978	None designated
Green sea turtle *Chelonia mydas*	Endangered	43 FR 32800; 7/28/1978	63 FR 46693; 9/2/1998
Leatherback sea turtle *Dermochelys coriacea*	Endangered	39 FR 19320; 6/2/1970	77 FR 4170; 1/26/2012
Olive (Pacific) Ridley sea turtle, Pacific Region *Lepidochelys olivacea*	Threatened	43 FR 32800; 7/28/1978	None designated
Northwestern Pond Turtle *Actinemys marmorata*	Proposed Threatened	88 FR 68370 10/3/2023	None proposed
Terrestrial Mammals			
Coastal DPS Pacific marten *Martes caurina*	Threatened	85 FR 63806; 10/8/2020	None designated
Insects			
Monarch butterfly *Danaus plexippus*	Proposed Threatened	89 FR 100662; 12/12/2024	None proposed in project vicinity
Suckley's cuckoo bumble bee *Bombus suckleyi*	Proposed Endangered	89 FR 102074; 12/17/2024	None proposed
Birds			
Marbled murrelet *Brachyramphus marmoratus*	Threatened	57 FR 45328; 10/1/1992	61 FR 26256 (1996); 76 FR 61599 (2011)
Northern spotted owl	Threatened	55 FR 26114;	57 FR 1796 1838;

Species	Status	Federal Register Notice	Critical Habitat
Strix occidentalis caurina		6/26/1990	01/15/1992
Short-tailed albatross *Phoebastria albatrus*	Endangered	65 FR 46643; 7/31/ 2000	None designated
Western snowy plover *Charadrius nivosus nivosus*	Threatened	58 FR 12864; 3/5/1993	70 FR 56970, 9/29/05; 77 FR 36727, 6/19/2012
Hawaiian petrel *Pterodroma sandwichensis*	Endangered	32 FR 4001; 3/11/1967	None designated

4.9.2 Environmental Consequences of the Alternatives

4.9.2.1 No Action Alternative

USACE completed formal consultation with the National Marine Fisheries Service (NMFS) for potential effects to aquatic species listed in Table 4-3 for ongoing operations and maintenance of the Yaquina Bay and River federal navigation channels and all other Oregon coastal rivers and bays in 2021 (NMFS 2021, Ref #: WCRO-2021-00418). In their biological opinion, NMFS concluded that ongoing maintenance is not likely to jeopardize the continued existence of Oregon Coast coho salmon or Southern DPS green sturgeon, nor the destruction or adverse modification of designated critical habitat. NMFS also concluded ongoing O&M actions were unlikely to adversely affect Southern DPS Pacific eulachon or their designated critical habitat; any of the marine mammals and marine turtles listed in Table 4-3, designated critical habitat for the leatherback turtle, or critical habitat for Southern Resident killer whales. Placement of material into the ODMDS is unlikely to have substantive effects to prey resources for murrelets and other avian species because the method of disposal does not result in significant adverse effects to water quality and the ODMDS site has been designated in a location that largely avoids effects to critical fish habitat. Larger organisms such as fish and marine mammals are generally able to avoid the temporary turbidity plume and physical disturbance to the water column during material placement (USACE, EPA 2012). The No Action alternative would continue to result in minor, short-term, local adverse effects to threatened and endangered species and their critical habitat.

4.9.2.2 Alternative 2: West Entrance

Proposed work under all action alternatives is unlikely to adversely affect the majority of species listed in Table 4-3. The life history and/or physical or biological features deemed essential to support ESA-listed sea turtles, whales, and coastal marten are simply not present in the primary action area. All work would take place in or over-water and largely from barges, thus limiting the scope of potential effects. Effects to species sensitive to construction noise and those that could be disturbed by barge traffic moving between the newly dredged channel and ODMDS for material disposal would be of limited duration. The potential destruction of existing eelgrass habitat under Alternative 2 could adversely affect OC coho, chinook, and Southern DPS green

sturgeon, and cause the destruction of essential fish habitat. The structural function of eelgrass and value contributing to primary production and food resources important to fish could be temporarily or permanently reduced or lost (Figure 4-5). Marbled murrelet and other birds would also be adversely affected by the loss of eelgrass habitat because they forage on herring, anchovy, candlefish and other aquatic organisms that may be more abundant in eelgrass beds. There are other eelgrass beds in the lower Yaquina Bay (e.g., Idaho Flat and Sally's Bend) that provide additional forage opportunities such that birds could avoid the action area and still meet feeding requirements. Additionally, the proposed placement of material into the ODMDS is unlikely have substantive adverse effects to prey resources for murrelets and other avian species different or greater than the No Action because the method of disposal will not result in prolonged adverse effects to water quality and the ODMDS site itself is sited to avoid critical fish habitat. Any short-term behavioral changes to avian prey resources and possible fish or marine mammal avoidance behaviors in the active disposal area would be minimal and similar for all action alternatives. Alternative 2 would result in moderate, long-term, local adverse effects to threatened and endangered species and their critical habitat.

4.9.2.3 Alternative 3: West Entrance and Hoist Dock

Alternative 3 is anticipated to have the same effects to the resource as Alternative 2 because adding the hoist dock to the improvement area is unlikely to substantially change the level of exposure to threatened and endangered species or their habitat. Alternative 3 would result in moderate, long-term, local adverse effects to threatened and endangered species and their critical habitat.

4.9.2.4 Alternative 4: East Entrance

Under Alternative 4, construction of an eastern entrance channel could substantially increase the adverse effects to essential fish habitat. Maps of the historic eelgrass extent indicate that over an acre of additional eelgrass beds would be adversely modified or destroyed by dredging the east entrance. This loss in eelgrass habitat would results in a concomitant loss in functions and values important to ESA-listed fish and birds. Potential effects to species from ODMDS placement would be slightly greater than the No Action, Alternative 2, and Alternative 3 because of the increase in the number of disposal loads and workdays that would extend the period of disturbance and possible avoidance behaviors. Alternative 4 would result in moderate, long-term, local adverse effects to threatened and endangered species and their critical habitat. Adverse effects would be of greater magnitude than Alternatives 2 and 3.

4.9.2.5 Alternative 5: East Entrance and Hoist Dock

Alternative 5 would cause adverse effects of the same magnitude and duration at Alternative 4. Adverse effects would primarily be the result of the potential permanent loss of essential eelgrass habitat and slightly greater effects to species transiting near ODMDS sites during active placement. Alternative 5 would result in moderate, long-term, local adverse effects to threatened and endangered species and their critical habitat similar to those assumed under Alternative 4.

Effects from the preferred alternative to Threatened/Endangered : Effects not significant as a result of mitigation

4.10 Historic Properties

4.10.1 Affected Environment

The primary affected environment for historic properties includes a collective ~31.1-acre area of potential effect (APE) consisting of all submerged locations within the Yaquina River in and around the immediate vicinity of the Commercial Marina where existing channel deepening, dredging and expansion "measures" are being proposed (Figures 1-1, 1-2, 2-1, 3-1, 3-3, 3-4, 3-5, 3-6, and 3-7). Specifically, seven contiguous APE locations where measure actions are being proposed (as described in Section 3.4) include: (a) an 8.5-acre portion of the existing West Entrance Channel to be deepened and/or widened to allow for passage of larger vessels and safer access through the existing, westside breakwater entrance; (b) a new, 8.25-acre East Entrance Channel to be dredged through the existing breakwater's eastside entrance or central portion (location to be determined) in an effort to provide safer and larger vessel access between the eastern portion of the FNC and central portion of the Marina; (c) a 5.5-acre portion of the existing In-Marina Port Dock 5 Channel to be deepened and/or widened; (d) a 4.0-acre portion of the existing In-Marina Port Dock 7 Channel to be deepened and/or widened; (e) a 3.25-acre portion of the existing in-marina Port Dock 7 Moorage Area to be deepened to allow for greater berthing capacity and improved vessel maneuverability; (f) a 1.25-acre portion of the existing In-Marina Hoist Dock Access Channel to be deepened and/or widened; and (g) a 0.35-acre portion of the existing Hoist Dock Moorage/Berth Area (located immediately north of the In-Marina – Hoist Dock Access Channel) to be deepened.

Other locations currently not identified as part the collective ~31.1-acre APE include two previously approved, offshore open-water ODMDS disposal sites located immediately west of the mouth of the Yaquina River (Figure 1-2).

Pursuant to USACE's responsibilities under Section 106 of the National Historic Preservation Act (NHPA) and 36 CFR Part 800 (as amended), the proposed channel deepening, dredging and in-water navigation corridor expansion measures to be conducted within the Yaquina River in and around the Marina, as well as any associated, upland construction/reconfiguration/staging activities, are collectively considered an undertaking and, therefore, must be evaluated for potential effects on historic properties and cultural resources. The USACE will complete Section 106 of the NHPA obligations for this undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the Oregon State Historic Preservation Office and affected Tribes, prior to completion of the Draft FONSI.

4.10.2 Environmental Consequences of the Alternatives

4.10.2.1 No Action Alternative

Under the No Action Alternative (Figure 2-1), no action is taking place and, therefore, there would be no impacts to the Yaquina River/Marina surroundings and no effect on historic properties, nor the historic significance, eligibility or potential eligibility of any such resources for listing in the National Register of Historic Places (NRHP). Therefore, in accordance with 36 CFR 800.3(a)(1), USACE finds the No Action Alternative would have no potential to cause effects on any identified historic properties and cultural resources within or near the Newport Commercial Marina Section 107 Navigation Project Feasibility Study APE, and no further NHPA considerations are required for this undertaking.

4.10.2.2 Alternative 2: West Entrance Channel Construction

Under Alternative 2 (Figure 3-3), actions associated with deepening and/or widening of an 8.5-acre portion of the existing West Entrance Channel, a 5.5-acre portion of the existing In-Marina – Port Dock 5 Channel and the connected, 4.0-acre portion of the In-Marina – Port Dock 7 Channel to allow for passage of larger vessels and safer maritime access through the existing, westside breakwater entrance has the potential to cause effects on historic properties and other cultural resources that may be present in the immediate vicinity. Therefore, pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed West Entrance Channel dredging and expansion activities has the potential to cause effects on historic properties and other cultural resources.

In partial fulfilment of the agency's NHPA compliance obligations, a USACE District Archaeologist conducted reviews of cultural resource investigations, evaluations and correspondence records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings, local shipwreck databases, and previous consultations with the Oregon State Historic Preservation Office (SHPO), CTSI, and CTGR. Based on those reviews, the USACE has determined that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly-dynamic, West Entrance Channel river and connected Port Docks 5 and 7 Channel environment. The only known historic structure in the immediate vicinity of the West Entrance Channel/Port Dock 5 Channel/Port Dock 7 Channel APE is the west end and northside periphery of the recently-modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. Although the breakwater likely retains minimal historic integrity and significance due to its extensive, recent reconstruction and rubble mound armoring (as well as ubiquitous degradation due to incessant exposure to ongoing wave and tidal forces), the breakwater has not been fully assessed or documented as a historic structure to date, nor has its eligibility for listing in the NRHP been evaluated. However, the proposed impact perimeters and proximity of Alternative 2 actions would not physically impact or alter the breakwater, nor would they affect any other known historic properties or cultural resources.

The USACE has determined that implementation of Alternative 2 would result in no effect on any historic properties or cultural resources. The USACE will complete Section 106 of the NHPA obligations for this alternative and overall undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the SHPO and affected Tribes, prior to completion of the Final EA and Draft FONSI.

4.10.2.3 Alternative 3: West Entrance Channel Construction with Improved Hoist Dock Access and Moorage

Alternative 3 would include all dredging and/or widening measures specified for the existing West Entrance Channel, Port Dock 5 Channel and Port Dock 7 Channel in Alternative 2 as well as deepening and widening of a 0.35-acre area of the Hoist Dock Moorage/Berth area and adjacent, 1.25-acre Hoist Dock Access Channel immediately northwest of the In-Marina/Port Dock 7 area in an effort to create a space that can safely accommodate larger vessels that may want to use the existing hoist dock facilities (Figure 3-4). Similar to the actions proposed under Alternative 2, the dredging and berth area expansion activities have the potential to cause effects on historic properties and other cultural resources that may be present in the immediate

vicinity.

Pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed Alternative 3 activities has the potential to cause effects on historic properties and other cultural resources. As noted for Alternative 2, the USACE District Archaeologist's reviews of cultural resource investigations, evaluations, correspondences and consultation records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings have revealed that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly-dynamic and heavily-reconfigured, Hoist Dock Moorage/Berth area. As noted, the only known historic structure in the immediate vicinity of the West Entrance Channel/Port Dock 5 Channel/Port Dock 7 Channel APE/Hoist Dock Moorage/Berth APE is the west end and northside periphery of the recently-modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of Alternative 3 actions would not physically impact or alter the breakwater, nor would they affect any other identified historic properties or cultural resources.

Therefore, USACE has determined that implementation of Alternative 3 would result in no effect on any historic properties or cultural resources.

4.10.2.4 Alternative 4: East Entrance Channel Construction

Alternative 4 would also include all dredging and/or widening measures specified in Alternative 2 including greater emphasis on dredging and expansion of the 8.25-acre East Channel Entrance and 4.0-acre Port Dock 7 Channel (Figure 3-5). Similar to the actions proposed under Alternative 2, the channel dredging and expansion activities have the potential to cause effects on historic properties and other cultural resources that may be present in the immediate vicinity. Pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed Alternative 4 activities has the potential to cause effects on historic properties and other cultural resources. As noted for Alternative 2, the USACE District Archaeologist's reviews of cultural resource investigations, evaluations, correspondences and consultation records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings have revealed that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly-dynamic and heavily-reconfigured, West and East Entrance Channel areas. As noted, the only known historic structure in the immediate vicinity of the West and East Entrance Channel areas is the recently modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of Alternative 4 actions would not physically impact or alter the breakwater, nor would they affect any other identified historic properties or cultural resources.

Therefore, USACE has determined that implementation of *Alternative 4* would result in no effect on any historic properties or cultural resources.

4.10.2.5 Alternative 5: East Entrance Channel Construction with Improved Hoist Dock Access and Moorage

Alternative 5 would also include all dredging and/or widening measures specified in Alternative 4, but as with Alternative 3, would include deepening and widening of the 1.25-acre Hoist Dock

Access Channel and 0.35-acre Hoist Dock Moorage/Berth (Figure 3-6). Similar to the actions proposed under each Alternative, the channel dredging and expansion activities have the potential to cause effects on historic properties and other cultural resources that may be present in the immediate vicinity. Pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed Alternative 5 activities has the potential to cause effects on historic properties and other cultural resources. As noted, the USACE District Archaeologist's reviews of cultural resource investigations, evaluations, correspondences and consultation records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings have revealed that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly-dynamic and heavily-reconfigured, collective West and East Entrance Channel/Marina areas. As noted, the only known historic structure in the immediate vicinity is the recently modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of Alternative 5 actions would not physically impact or alter the breakwater, nor would they affect any other identified historic properties or cultural resources.

Therefore, USACE has determined that implementation of Alternative 5 would result in no effect on any historic properties or cultural resources.

Effects from the preferred alternative to Historic : Resource unaffected by action

4.11 Other Cultural Resources

4.11.1 Affected Environment

The primary affected environment for historic properties and other cultural resources includes a collective ~31.1-acre APE consisting of all submerged locations within the Yaquina River in and around the immediate vicinity of the Commercial Marina where existing channel deepening, dredging and expansion "measures" are being proposed (Figures 1-1, 1-2, 2-1, 3-1, 3-3, 3-4, 3-5, 3-6, and 3-7). Specifically, seven contiguous APE locations where measure actions are being proposed (as described in as described in Section 3.4) include: (a) an 8.5-acre portion of the existing West Entrance Channel to be deepened and/or widened to allow for passage of larger vessels and safer access through the existing, westside breakwater entrance; (b) a new, 8.25-acre East Entrance Channel to be dredged through the existing breakwater's eastside entrance or central portion (location to be determined) in an effort to provide safer and larger vessel access between the eastern portion of the FNC and central portion of the Marina; (c) a 5.5-acre portion of the existing In-Marina – Port Dock 5 Channel to be deepened and/or widened; (d) a 4.0-acre portion of the existing In-Marina – Port Dock 7 Channel to be deepened and/or widened; (e) a 3.25-acre portion of the existing In-Marina Port Dock 7 moorage area to be deepened to allow for greater berthing capacity and improved vessel maneuverability; (f) a 1.25-acre portion of the existing In-Marina – Hoist Dock Access Channel to be deepened and/or widened; and (g) a 0.35-acre portion of the existing Hoist Dock Moorage/Berth area (located immediately north of the In-Marina – Hoist Dock Access Channel) to be deepened.

Other locations currently not identified as part the collective ~31.1-acre APE include two previously approved, offshore open-water ODMDS disposal sites located immediately west of the mouth of the Yaquina River (Figure 1-2

Pursuant to USACE' responsibilities under Section 106 of the National Historic Preservation Act (NHPA) and 36 CFR Part 800 (as amended), the proposed channel deepening, dredging and in-water navigation corridor expansion measures to be conducted within the Yaquina River in and around the Marina, as well as any associated, upland construction/reconfiguration/ staging activities, are collectively considered an undertaking and, therefore, must be evaluated for potential effects on historic properties and other cultural resources.

4.11.2 Environmental Consequences of the Alternatives

4.11.2.1 No Action Alternative

Under the No Action Alternative (Figure 2-1), no action is taking place and, therefore, there would be no impacts to the Yaquina River/Marina surroundings and no effect on historic properties and other cultural resources, nor the historic significance, eligibility or potential eligibility of any such resources for listing in the National Register of Historic Places (NRHP). Therefore, in accordance with 36 CFR 800.3(a)(1), USACE finds the No Action Alternative would have no potential to cause effects on any identified historic properties and other cultural resources within or near the Newport Commercial Marina Section 107 Navigation Project Feasibility Study APE, and no further NHPA considerations are required for this undertaking.

4.11.2.2 Alternative 2: West Entrance Channel Construction

Under Alternative 2 (Figure 3-3), actions associated with deepening and/or widening of an 8.5-acre portion of the existing West Entrance Channel, a 5.5-acre portion of the existing In-Marina – Port Dock 5 Channel and the connected, 4.0-acre portion of the In-Marina – Port Dock 7 Channel to allow for passage of larger vessels and safer maritime access through the existing, westside breakwater entrance has the potential to cause effects on historic properties and other cultural resources that may be present in the immediate vicinity. Therefore, pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed West Entrance Channel dredging and expansion activities has the potential to cause effects on historic properties and other cultural resources.

In partial fulfilment of the agency's NHPA compliance obligations, a USACE District Archaeologist conducted reviews of cultural resource investigations, evaluations and correspondence records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings, local shipwreck databases, and previous consultations with the Oregon SHPO, CTSI, and CTGR. Based on those reviews, it was determined that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly dynamic, West Entrance Channel river and connected Port Docks 5 and 7 channel environments. The only known historic structure in the immediate vicinity of the West Entrance Channel/Port Dock 5 Channel/Port Dock 7 Channel APE is the west end and northside periphery of the recently modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. Although the breakwater likely retains minimal historic integrity and significance due to its extensive, recent reconstruction and rubble mound armoring (as well as ubiquitous degradation due to incessant exposure to ongoing wave and tidal forces), the breakwater has not been fully assessed or documented as a historic structure to date, nor has its eligibility for listing in the NRHP been evaluated. However, the proposed impact perimeters and proximity of Alternative 2 actions would not physically impact or alter the breakwater, nor would they affect any other known historic properties or cultural resources.

The USACE has determined that implementation of Alternative 2 would result in no effect on any historic properties or other cultural resources. The USACE will complete Section 106 of the NHPA obligations for this alternative and overall undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the SHPO and affected Tribes, prior to completion of the Final EA and FONSI.

4.11.2.3 Alternative 3: West Entrance Channel Construction with Improved Hoist Dock Access and Moorage

Alternative 3 would include all dredging and/or widening measures specified for the existing West Entrance Channel, Port Dock 5 Channel and Port Dock 7 Channel in Alternative 2 as well as deepening and widening of a 0.35-acre area of the Hoist Dock Moorage/Berth area and adjacent, 1.25-acre Hoist Dock Access Channel immediately northwest of the In-Marina/Port Dock 7 area in an effort to create a space that can safely accommodate larger vessels that may want to use the existing hoist dock facilities (Figure 3-4). Similar to the actions proposed under Alternative 2, the dredging and berth area expansion activities have the potential to cause effects on historic properties and other cultural resources that may be present in the immediate vicinity. Pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed Alternative 3 activities has the potential to cause effects on historic properties and other cultural resources.

As noted for Alternative 2, the USACE District Archaeologist's reviews of cultural resource investigations, evaluations, correspondence and consultation records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings have revealed that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly dynamic and heavily-reconfigured, Hoist Dock Moorage/Berth area. As noted, the only known historic structure in the immediate vicinity of the West Entrance Channel/Port Dock 5 Channel/Port Dock 7 Channel APE/Hoist Dock Moorage/Berth APE is the west end and northside periphery of the recently modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of Alternative 3 actions would not physically impact or alter the breakwater, nor would they affect any other cultural resources.

The USACE has determined that implementation of Alternative 3 would result in no effect on any historic properties or other cultural resources. The USACE will complete Section 106 of the NHPA obligations for this alternative and overall undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the SHPO and affected Tribes, prior to completion of the Final EA and Draft FONSI.

4.11.2.4 Alternative 4: East Entrance Channel Construction

Alternative 4 would also include all dredging and/or widening measures specified in Alternative 2 including greater emphasis on dredging and expansion of the 8.25-acre East Channel Entrance and 4.0-acre Port Dock 7 Channel (Figure 3-5). Similar to the actions proposed under Alternative 2, the channel dredging and expansion activities have the potential to cause effects

on historic properties and other cultural resources that may be present in the immediate vicinity. Pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed Alternative 4 activities has the potential to cause effects on historic properties and other cultural resources.

As noted for Alternative 2, the USACE District Archaeologist's preliminary reviews of cultural resource investigations, evaluations, correspondences and consultation records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings have revealed that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly-dynamic and heavily-reconfigured, West and East Entrance Channel areas. The only known historic structure in the immediate vicinity of the West and East Entrance Channel areas is the recently modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of Alternative 4 actions would not physically impact or alter the breakwater, nor would they affect any other identified historic properties or cultural resources.

The USACE has determined that implementation of Alternative 4 would result in no effect on any historic properties or other cultural resources. The USACE will complete Section 106 of the NHPA obligations for this alternative and overall undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the SHPO and affected Tribes, prior to completion of the Final EA and Draft FONSI.

4.11.2.5 Alternative 5: East Entrance Channel Construction with Improved Hoist Dock Access and Moorage

Alternative 5 would also include all dredging and/or widening measures specified in Alternative 4, but as with Alternative 3, would include deepening and widening of the 1.25-acre Hoist Dock Access Channel and 0.35-acre Hoist Dock Moorage/Berth (Figure 3-6). Similar to the actions proposed under each Alternative, the channel dredging and expansion activities have the potential to cause effects on historic properties and other cultural resources that may be present in the immediate vicinity. Pursuant to its responsibilities under Section 106 of the NHPA regulations and in accordance with 36 CFR Part 800 (as amended), USACE has determined that implementation of the proposed Alternative 5 activities has the potential to cause effects on historic properties and other cultural resources.

As noted, the USACE District Archaeologist's reviews of cultural resource investigations, evaluations, correspondences and consultation records associated with other projects previously conducted in the immediate Yaquina River/Marina area surroundings have revealed that no historic properties, archaeological sites or other cultural resources have been documented or are known to be present within the highly-dynamic and heavily-reconfigured, collective West and East Entrance Channel/Marina areas. The only known historic structure in the immediate vicinity is the recently modernized, ca. 1946 timber pile breakwater which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of Alternative 5 actions would not physically impact or alter the breakwater, nor would they affect any other identified historic properties or cultural resources.

The USACE has determined that implementation of Alternative 5 would result in no effect on any historic properties or other cultural resources. The USACE will complete Section 106 of the NHPA obligations for this alternative and overall undertaking, including consultation of the proposed actions and findings, determination of possible effects on any cultural resources or historic properties, and recommendations with the SHPO and affected Tribes, prior to completion of the Final EA and Draft FONSI.

Effects from the preferred alternative to Other Cultural Resources: Resource unaffected by action

4.12 Hazardous, Toxic & Radioactive Waste

4.12.1 Affected Environment

The EPA tracks information about potential sources of hazardous waste through the EPA Facility Registry Service (EPA, 2020). This system specifically maintains records related to EPA's responsibilities under the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. Map layers of potentially hazardous waste generators, transporters, treaters, storers, and disposers are also accessible through EPA's Enviro Atlas (EPA, 2021) under "EPA Regulated Facilities."

The EPA is the lead agency in cleaning contaminated sites resulting from hazardous waste that was previously dumped or improperly managed, typically from former manufacturing facilities, processing plants, landfills, and old mining sites. These sites are managed in accord with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, informally referred to as the 'Superfund' program. As with RCRA, the EPA tracks and manages Superfund sites and the information is another map layer available through EPA's Enviro Atlas (Figure 4-6).

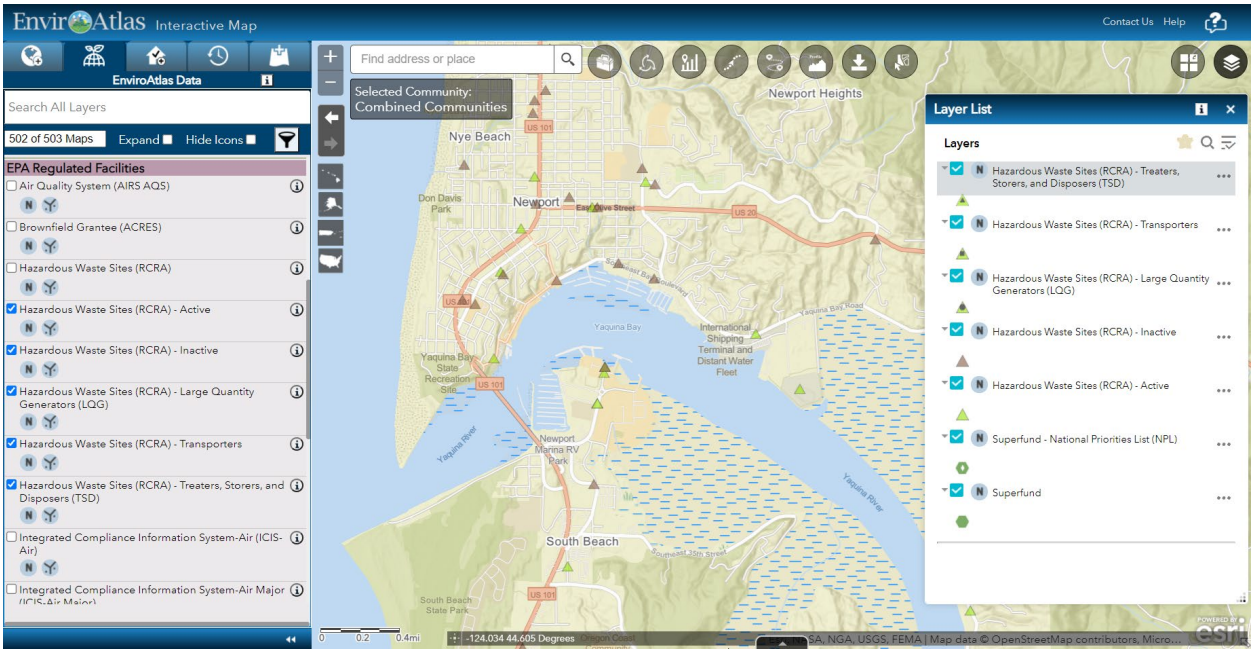

Figure 4-6. Enviro Atlas screenshot depicting results after querying RCRA and Superfund

sites in the project vicinity (EPA, 2021)

There are currently no National Priorities List sites or Superfund Alternative Approach sites in the project vicinity (Figure 4-6). There are five active RCRA sites within vicinity of the northern shoreline bordering the site, south of Highway 20 and east of US 101. ODEQ mapped 8 sites with permit actions in Newport, Oregon in the area south of Highway 20 and east of Interstate Highway 101 (ODEQ, 2025). Of those sites, 3 were linked to approved hazardous waste permits and only one was along the bayfront in the direct project vicinity (Figure 4-7). None of the proposed dredging, placement, or O&M activities considered in this study would affect these HTWR sites.

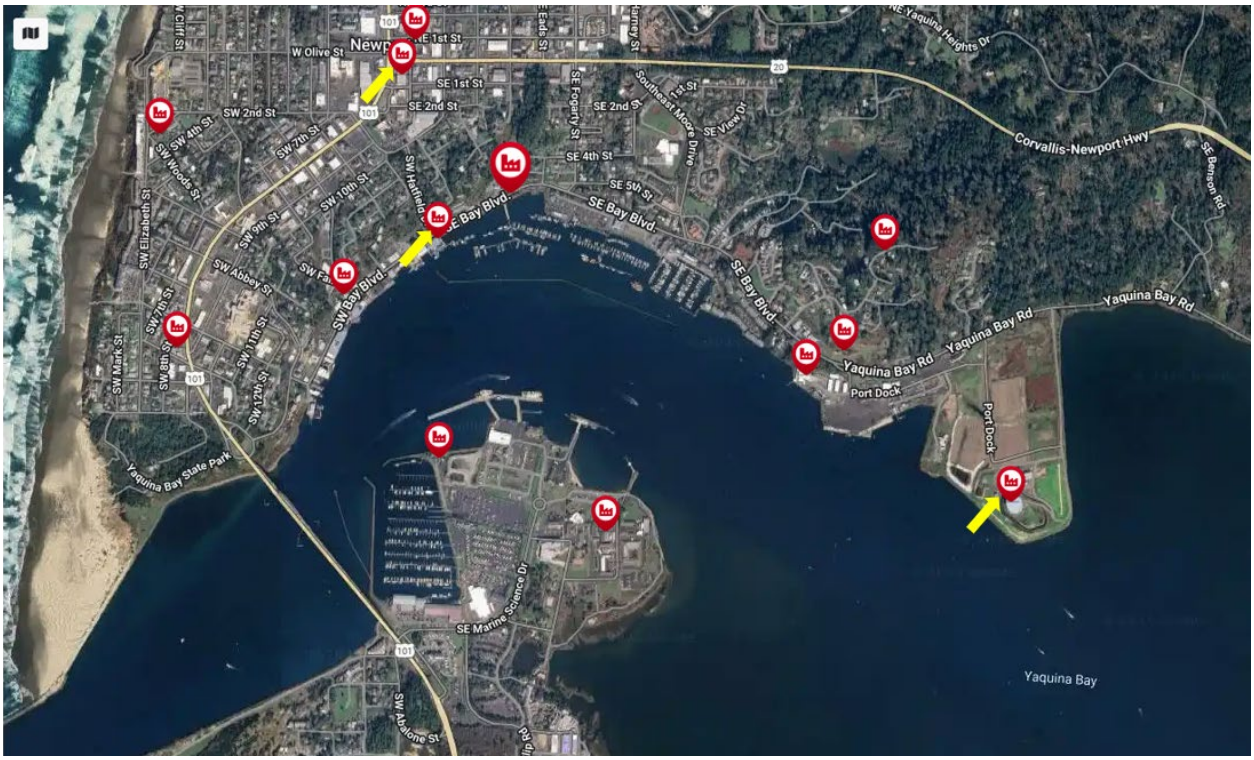

Figure 4-7. Sites identified by the State of Oregon

4.12.2 Environmental Consequences of the Alternatives

4.12.2.1 No Action Alternative

Under the No Action alternative, USACE would continue O&M dredging activities in the Yaquina Bay and River. Equipment used during dredging and placement operations does have the potential to generate hazardous waste, however, several BMPs are implemented to minimize the risk of an accidental spill and reduce overall contamination. Any hazardous material or waste generated by USACE or its contractors during normal equipment operations (e.g., fuel spills) is required to be disposed of and managed in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 264, 49 CFR 171-178, State, and local laws and regulations.

Specifications for hazardous waste disposal and management include the following:

- Use, or propose for use, materials which may be considered environmentally friendly in that waste from such materials is not regulated as a hazardous waste or is not

considered harmful to the environment.

- Handle, store, and dispose of contractor generated hazardous waste according to regulations at 40 CFR 261, which govern small quantity (100 kg or less of per month) hazardous waste generators. If the generator accumulates at any time 1,000 kg or greater of hazardous wastes, all of those wastes are subject to regulation under the special provisions of 40 CFR 262 applicable to generators of greater than 100 kg and less than 1,000 kg of hazardous waste in a month as well as the requirements of Section 3010 of RCRA.
- A conditionally exempt small quantity generator should ensure delivery to a licensed and permitted off-site treatment, storage or disposal facility.
- For any periods of time the contractor is categorized by EPA as a small quantity generator or large quantity generator the contractor must use the EPA identification number to dispose of all hazardous waste generated by the contractor and its subcontractors under this contract. This is construed to mean all hazardous waste the contractor or subcontractors generate from materials brought on the site for the purpose of performing work under the terms of the contract.
- Recycle hazardous waste to the maximum extent possible. Placing hazardous or dangerous waste in a permitted hazardous waste landfill must be the last resort.

4.12.2.2 Alternative 2: West Entrance

None of the action alternatives would result in a substantial quantity of hazardous, toxic, or radioactive waste nor affect sites known or suspected to have potential contamination by hazardous, toxic, or radioactive waste. The BMPs outlined under the No Action alternative would also be applicable to action alternatives. Alternative 2 would add workdays that necessarily increase the number of opportunities for accidental spills and initial dredging to create a new west entrance channel could require more equipment. Alternative 2 could result in minor, short-term, local adverse effects to Hazardous, toxic & radioactive waste.

4.12.2.3 Alternative 3: West Entrance with Hoist Dock Access

Effects from Alternative 3 are not anticipated to be substantially different or greater than any of the other action alternatives. Alternative 3 could result in minor, short-term, local adverse effects to Hazardous, toxic & radioactive waste.

4.12.2.4 Alternative 4: East Entrance

Effects from Alternative 4 are not anticipated to be substantially different or greater than any of the other action alternatives. Alternative 4 could result in minor, short-term, local adverse effects to Hazardous, toxic & radioactive waste.

4.12.2.5 Alternative 5: East Entrance with Hoist Dock Access

Effects from Alternative 5 are not anticipated to be substantially different or greater than any of the other action alternatives. Alternative 5 could result in minor, short-term, local adverse effects to Hazardous, toxic & radioactive waste.

Effects from the preferred alternative to Hazardous, Toxic & Radioactive Waste: Effects not significant

4.13 Navigation

4.13.1 Affected Environment

Yaquina Bay includes one of USACE' oldest navigation projects on the Oregon coast: the Yaquina Bay and River navigation channels, jetties, turning basins, breakwater, and dredging of a mooring basin within the breakwater. This mooring basin within the breakwater is the area proposed for improvement as part of this study (Commercial Marina). The Commercial Marina is privately owned by the Port. USACE began constructing the Yaquina Bay North Jetty in 1891 with a target length of 9,600 ft. The 8,600-foot South Jetty was completed in 1896 and extended to 10,400 ft in 1972. A 10-foot-deep channel in the Yaquina River was constructed from the town of Yaquina upstream to Toledo in 1914 (approximately river miles 5 to 14). In 1946, USACE completed construction of a timber and rubble mound breakwater on the north side of the bay to protect a marina for commercial fishing boats working fisheries including halibut, salmon, and crab. Authorization and establishment of the small-boat mooring basin displaced the original channel in the Bay which was located next to the water front, and proceeded to the turning basin. In 1968, USACE improved the entrance to the Yaquina Bay. The dimensions of the improved entrance to the bay measure 40-ft deep by 400-ft wide, then transition to a 30-foot deep by 300-foot-wide navigation channel upstream to McLean Point (peninsula to the right of the International Terminal on Figure 1-1). At McLean Point, a turning basin was constructed with dimensions of 30-ft deep, 900-1,200-ft wide, and 1,400 ft long for vessels. From McLean Point, the federal navigation channel transitions to 18-ft deep to the town of Yaquina, then again transitions to 10-ft deep to the Port of Toledo. The access channel into the commercial fishing marina was not improved as part of this effort.

4.13.2 Environmental Consequences of the Alternatives

4.13.2.1 No Action

Under the No Action Alternative, navigation within the Commercial Marina would continue to experience maneuverability and safety concerns. As the trend of the commercial fishing industry adopting larger vessels continues, the problems associated with sedimentation and channel dimensions will continue and likely be exacerbated by the increasing vessel size trends.

4.13.2.2 Alternative 2: West Entrance

In the short term, primarily the construction and O&M periods there may be impediments to navigation. These impediments are not anticipated to be long term, and the resulting construction will improve safety and reduce vessel operating costs. Alternative 2 would result in adverse effects to Navigation that would be minor, short-term, and local followed by beneficial effects that would be moderate, long-term, and local.

4.13.2.3 Alternative 3: West Entrance with Hoist Dock Access

Under all action alternatives, during the construction and O&M periods there may be impediments to navigation. These impediments are not anticipated to be long-term, and the resulting construction will improve safety, reduce vessel operating costs, and improve overall port efficiency. Alternative 3 would result in minor, short-term, and local adverse effects to Navigation, though of slightly greater magnitude than Alternative 2, followed by beneficial effects that would be moderate, long-term, and local.

4.13.2.4 Alternative 4: East Entrance

Under all action alternatives, during the construction and O&M periods there may be impediments to navigation. These impediments are not anticipated to be long-term, and the resulting construction will improve safety, reduce vessel operating costs, and improve overall port efficiency. The addition of the East channel will likely reduce congestion near the Embarcadero marina, resulting in positive safety enhancements. Alternative 4 would result in minor, short-term, and local adverse effects to Navigation, though of slightly greater magnitude than Alternatives 2 and 3 due to the potentially extended period of construction, followed by beneficial effects that would be moderate, long-term, and local.

4.13.2.5 Alternative 5: East Entrance with Hoist Dock Access

Under all action alternatives, during the construction and O&M periods there may be impediments to navigation. These impediments are not anticipated to be long-term, and the resulting construction will improve safety, reduce vessel operating costs, and improve overall port efficiency. The addition of the East channel will likely reduce congestion near the Embarcadero marina, resulting in positive safety enhancements. Alternative 5 would result in minor, short-term, and local adverse effects to Navigation, though of slightly greater magnitude than Alternatives 2 and 3 due to the potentially extended period of construction, followed by beneficial effects that would be moderate, long-term, and local.

Effects from the preferred alternative to Navigation: Effects not significant

4.14 Public Infrastructure

4.14.1 Affected Environment

The project overlaps the Port of Newport Commercial Marina facilities and there are several public infrastructure elements in the vicinity described in Section 2.3.1 and shown in Figure 2-1.

4.14.2 Environmental Consequences of the Alternatives

4.14.2.1 No Action Alternative

Under the No Action, there would be no anticipated changes to public infrastructure in the project vicinity except for the Port's planned improvements to Port Dock 7 as described in Section 2.3.1.

4.14.2.2 Alternative 2: West Entrance Channel Construction

Deepening the west entrance and in-marina channels would ultimately improve access to public infrastructure at the port facility but have no direct effect to their physical dimensions or quality. During construction, deepening of the Port Dock 7 moorage area would render inaccessible for use until construction is complete and the docking infrastructure rebuilt by the Port. Alternative 2 would have no effects on the public submarine infrastructure. Alternative 2 would require the relocation of a privately owned outfall at the west entrance. That said, the impacts attributed to a relocated outfall will likely be similar to the existing outfall and representative of the existing, affected environment. Alternative 2 would result in minor, short-term, local, adverse effects to public infrastructure.

4.14.2.3 Alternative 3: West Entrance with Hoist Dock Access

Deepening the east entrance and in-marina channels, and Port Dock 7 and Hoist Dock moorage

areas would ultimately improve access to public infrastructure at the port facility but have no direct effect to their physical dimensions or quality. During construction, deepening of the Port Dock 7 and Hoist Dock moorage areas would render these inaccessible for use until construction is complete and the docking infrastructure is rebuilt by the Port. Alternative 3 would require the relocation of a privately owned outfall at the west entrance. That said, the impacts attributed to a relocated outfall will likely be similar to the existing outfall and representative of the existing, affected environment. Alternative 3 would result in minor, short-term, local, adverse effects to public infrastructure.

4.14.2.4 Alternative 4: East Entrance

Deepening the east entrance and in-marina channels would ultimately improve access to public infrastructure at the port facility but have no direct effect to their physical dimensions or quality. During construction, deepening of the Port Dock 7 area would render these inaccessible for use until construction is complete and the docking infrastructure is rebuilt by the Port. Alternative 4 would require the relocation of the submarine water supply pipeline that crosses the east entrance channel alignment. Alternative 4 would result in minor, short-term, local, adverse effects to public infrastructure.

4.14.2.5 Alternative 5: East Entrance with Hoist Dock Access

Deepening the east entrance and in-marina channels would ultimately improve access to public infrastructure at the port facility but have no direct effect to their physical dimensions or quality. During construction, deepening of the Port Dock 7 and Hoist Dock moorage areas would render these inaccessible for use until construction is complete and the docking infrastructure is rebuilt by the Port. Alternative 4 would require the relocation of the submarine water supply pipeline that crosses the east entrance channel alignment. Alternative 5 would result in minor, short-term, local, adverse effects to public infrastructure.

Effects from the preferred alternative to Public Infrastructure: Effects not significant

4.15 Socioeconomics

4.15.1 Affected Environment

Newport, which is part of Lincoln County, was founded in 1882, was named after Newport, Rhode Island, and currently covers an area of about 10.5 square miles. According to the Census Bureau, the 2020 population was 10,256 people, a 2.7 percent increase from the about 9,989 people indicated in the 2010 Census. By contrast, Lincoln County has Increased 9.5% since the last census, with a 2020 Census population of 50,359—up from 46,034 in 2010. The overall population trend in Coastal Oregon towns is similar in modest growth to that of Newport, but not as robust as Oregon overall. Table 4-4 depicts the population trends from 2020 to present

Table 4-4. Population Trends for Coastal Oregon and Oregon, 2000 to 2020

Source Census: American Community Survey

Area	2000	2010	2020	% Change 20 Year
Newport	9,532	9,989	10,256	7.59
Astoria	9,813	9,477	10,181	3.75
Coos Bay	15,374	15,967	15,985	3.97
Oregon	3,421,398	3,831,074	4,237,256	23.85

Table 4-5, compares Newport, Lincoln County, the state of Oregon, and the broader United States, reflecting varying degrees of racial and ethnic diversity**.**

Table 4-5. Current Racial Breakdown, Newport/Lincoln County/Oregon/United States

Source:2020 US Census

Area	White	African American	Asian	Native American	Two or More Races	Hispanic Latino of Any Race	Pacific Islander
Newport	80.9%	1.0%	1.7%	1.8%	5.8	15.8%	0.0%
Lincoln County	89.1%	0.9%	1.5%	4.1%	4.1%	10%	0.2%
Oregon	71.4%	2.2%	4.5%	4.6%	8.9%	13.9%	0.5%
United States	57.8%	12.1%	5.9%	0.7%	4.1%	18.7%	0.2%

The employment landscape across Oregon, Lincoln County, and the city of Newport reflects a diverse economic structure shaped by regional strengths and demographic trends.

Statewide, Oregon’s economy is anchored by sectors such as health care and social assistance, which added 16,900 jobs in the past year, and government services, which grew by 7,000 jobs. However, the manufacturing sector has faced challenges, losing approximately 7,900 jobs over the past four years, partly due to layoffs at major employers like Intel and Nike. Despite these setbacks, the state’s unemployment rate has remained stable, hovering around 4.0% to 4.1% in recent months.

In Lincoln County, the economy is heavily influenced by tourism, with restaurants, bars, and lodging businesses serving as primary employment sources. The county’s labor force

participation rate stands at 50.4%, significantly lower than the statewide average of 62.4%, largely due to an aging population. Federal employment, though comprising just 2% of the workforce, has a notable impact, especially in Newport, home to the NOAA Marine Operations Center-Pacific.

Newport's economy mirrors the county's tourism focus but is further bolstered by federal and marine science employment. Institutions like the Hatfield Marine Science Center contribute to the local job market. However, the prevalence of low-wage tourism jobs contributes to financial hardship for many residents, with 47% living in financial insecurity.

Overall, while Oregon benefits from a diversified economy, Lincoln County and Newport face unique challenges due to their reliance on tourism and an aging workforce, underscoring the need for economic diversification and workforce development initiatives.

Table 4-6. Employment Status, Oregon, Lincoln County, and City of Newport

Source- US Census Bureau, ACS

	Oregon		**Lincoln County**		**City of Newport**	
Label	**Estimate**	**Percent**	**Estimate**	**Percent**	**Estimate**	**Percent**
Population 16 years and over	3,483,666	3,483,666	43,557	43,557	8,952	8,952
In labor force	2,172,047	62.3%	21,448	49.2%	4,556	50.9%
Civilian labor force	2,167,746	62.2%	21,400	49.1%	4,536	50.7%
Employed	2,051,335	58.9%	19,707	45.2%	4,208	47.0%
Unemployed	116,411	3.3%	1,693	3.9%	328	3.7%
Armed Forces	4,301	0.1%	48	0.1%	20	0.2%
Not in labor force	1,311,619	37.7%	22,109	50.8%	4,396	49.1%
Civilian labor force	2,167,746	2,167,746	21,400	21,400	4,536	4,536
Unemployment Rate	(X)	5.4%	(X)	7.9%	(X)	7.2%
Females 16 years and over	1,757,155	1,757,155	22,746	22,746	4,878	4,878
In labor force	1,025,419	58.4%	10,566	46.5%	2,300	47.2%

	Oregon		Lincoln County		City of Newport	
Civilian labor force	1,024,804	58.3%	10,565	46.4%	2,299	47.1%
Employed	972,277	55.3%	9,786	43.0%	2,144	44.0%

In 2022, Oregon's median household income was approximately $68,947, with a diverse distribution across income brackets. Lincoln County reported a median household income of $57,794, with about 35% of households earning less than $40,000 annually and approximately 8.4% earning over $150,000. Newport, a city within Lincoln County, had a median household income of $57,511. Notably, 39.3% of Newport's households earned less than $40,000, while around 8.9% earned between $150,000 and $200,000, and 3.7% exceeded $200,000. These figures highlight income disparities within the state and between regions. Table 4-7 shows the range of incomes, by household, for the State of Oregon, Lincoln County, and City of Newport

Table 4-7. Household Income Ranges, Oregon, Lincoln County, and City of Newport

Source- US Census Bureau, ACS

Income and Benefits (In 2023 Inflation-Adjusted Dollars)	Oregon		Lincoln County		City of Newport	
	#	%	#	%	#	%
Total households	1,701,548		22,829		4,796	
Less than $10,000	74,987	4.4%	1,171	5.1%	268	5.6%
$10,000 to $14,999	57,467	3.4%	1,103	4.8%	266	5.5%
$15,000 to $24,999	106,825	6.3%	2,023	8.9%	286	6.0%
$25,000 to $34,999	108,826	6.4%	2,205	9.7%	469	9.8%
$35,000 to $49,999	178,543	10.5%	2,444	10.7%	787	16.4%
$50,000 to $74,999	270,646	15.9%	4,942	21.6%	941	19.6%

Income and Benefits (In 2023 Inflation-Adjusted Dollars)	Oregon		Lincoln County		City of Newport	
$75,000 to $99,999	225,597	13.3%	2,788	12.2%	481	10.0%
$100,000 to $149,999	313,993	18.5%	3,430	15.0%	720	15.0%
$150,000 to $199,999	163,392	9.6%	1,292	5.7%	305	6.4%
$200,000 or more	201,272	11.8%	1,431	6.3%	273	5.7%
Median household income (dollars)	80,426	(X)	61,314	(X)	57,213	(X)
Mean household income (dollars)	108,321	(X)	83,483	(X)	85,158	(X)

4.15.2 Environmental Consequences of the Alternatives

4.15.2.1 No Action Alternative

Under the No Action, there is a possibility that income from commercial fishing and ancillary industries could be impacted due to increased vessel operating costs. This includes potential loss of employment and exacerbation of income related socioeconomic stressors.

4.15.2.2 Alternative 2: West Entrance Channel Construction

No negative effects on the socio-economic resources of the area are anticipated from construction of Alternative 2. Navigation needs would be partially met; the harbor of refuge would be better protected along with nearshore seafood industry infrastructure. No changes in the areas of public facilities and services, community cohesion, property values, and community and regional growth are expected from implementation of the Alternative. Similarly, no displacement of people or businesses would occur, and there would not be any adverse effect on any group. Alternative 2 would likely result in minor, long-term, local beneficial effects to Socioeconomics.

4.15.2.3 Alternative 3: West Entrance with Hoist Dock Access

No negative effects on the socio-economic resources of the area are anticipated from construction of Alternative. Fishing or crabbing opportunities would not be reduced and would be enhanced by implementing the proposed project. Navigation needs would be met; the harbor of refuge would be better protected along with nearshore seafood industry infrastructure. No changes in the areas of public facilities and services, community cohesion, property values, and

community and regional growth are expected from implementation of the proposed project. Similarly, no displacement of people or businesses would occur, and there would not be any adverse effect on any group. Alternative 3 would likely result in minor, long-term, local beneficial effects to Socioeconomics.

4.15.2.4 Alternative 4: East Entrance

No negative effects on the socio-economic resources of the area are anticipated from construction of Alternative 4. Fishing or crabbing opportunities would not be reduced and would be enhanced by implementing the proposed project. Navigation needs would be met; the harbor of refuge would be better protected along with nearshore seafood industry infrastructure. No changes in the areas of public facilities and services, community cohesion, property values, and community and regional growth are expected from implementation of the proposed project. Similarly, no displacement of people or businesses would occur, and there would not be any adverse effect on any group. Alternative 4 would likely result in minor, long-term, local beneficial effects to Socioeconomics.

4.15.2.5 Alternative 5: East Entrance with Hoist Dock Access

No negative effects on the socio-economic resources of the area are anticipated from Alternative 5. Fishing or crabbing opportunities would not be reduced and would be enhanced by implementing the proposed project. Navigation needs would be met; the harbor of refuge would be better protected along with nearshore seafood industry infrastructure. No changes in the areas of public facilities and services, community cohesion, property values, and community and regional growth are expected from implementation of the proposed project. Similarly, no displacement of people or businesses would occur, and there would not be any adverse effect on any group. Alternative 4 would likely result in minor, long-term, local beneficial effects to Socioeconomics.

Effects from the preferred alternative to Socioeconomics: Effects not significant.

4.16 Soils

4.16.1 Affected Environment

4.16.1.1 Upland Soils

Soils in the project vicinity (i.e., north of the Port of Newport) are predominantly identified as 59C – Urban land-Nescott complex w/ 0-12% slopes; 58E – Urban land-Bandon complex w/ 12-50% slopes; and 60C – Urban land-Waldport complex w/ 0-12% slopes (NRCS, 2019).The strip of land along the bayfront is of the latter 60C designation which is further characterized as excessively drained, a high capacity to transmit water, and more than 80 inches to the water table. Nonetheless, the environment that would be most affected by proposed navigation improvements is aquatic and noted as W – water (Figure 4-8).

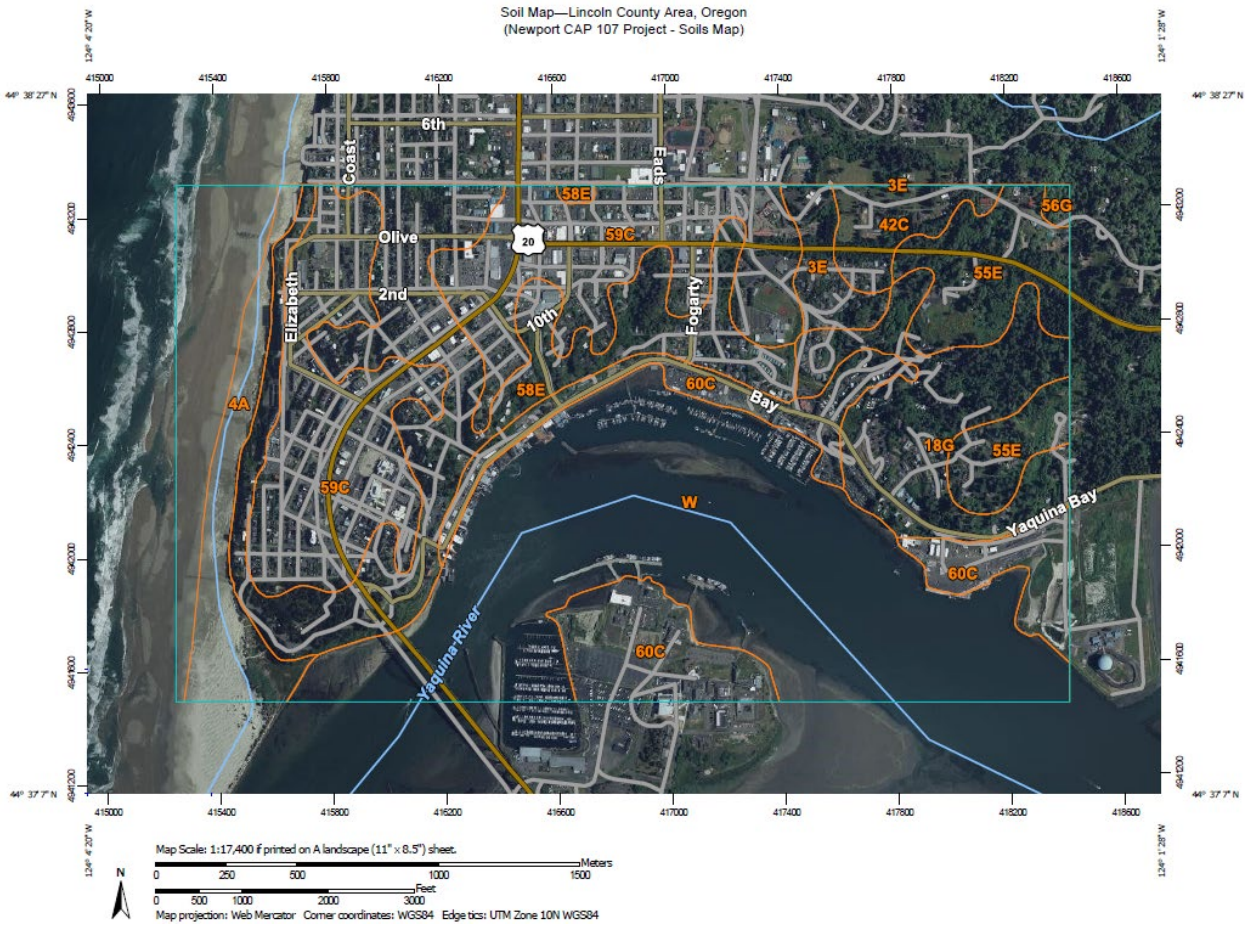

Figure 4-8. USDA NRCS Soils Map

4.16.1.2 Local Geologic Conditions

The Port of Newport is located within the northwest extent of Yaquina Bay. Geologic description of the area characterized the region as underlain by marine sedimentary deposits which are comprised of the Nye Mudstone, Yaquina and Astoria formations. These soil units generally strike north and dips 10 to 20 degrees west. Sediment deposition overlying these deposits vary in sand, silt and shell fragments largely dependent on distance from the main navigational channels. Grab samples of these sediments from RM 1+12 to RM 1+45 were collected and analyzed in 2022. There were no detected concentrations or non-detections with method detection limits that exceeded either SEF marine screening levels or state of Oregon screening level values.

The Nye formation is petroliferous, meaning that it has the potential to contain petroleum hydrocarbons and associated contaminants. Representative samples of the Nye mudstone were tested for total petroleum hydrocarbons (diesel and residual range), polycyclic aromatic hydrocarbons, and heavy metals. There were no detected concentrations or non-detections with method detection limits that exceeded either SEF marine screening levels or state of Oregon screening level values (GRI 2025).

USACE regularly tests sediments in the Yaquina Navigation Channel as part of the coastal

dredging and maintenance program. Sediments from the main channel between RM -1 and RM 4+20 are dredged annually to facilitate navigation and were last tested in 2022 from the Yaquina Bay federal navigation channel from RM -1+00 to +2+23, and then in 2024 from RM 2+23 to 4+40. The sediments near the estuary are predominantly sand and have been deemed suitable for in-water placement. Deeper sediments in the footprint of potentially new channels that could be deepened or widened as part of the proposed action have been tested and are currently being evaluated by the PSET. Historic surveys indicate that there may be consolidated sediments (Nye mudstone) below the sediment surface in the project area.

4.16.1.3 Subsurface Conditions/Investigations

Within the North Marina, there have been multiple investigative studies to collect data in aiding the initial construction of the timber breakwater in the 1940s and the rubble mound extension in the 1990s. Investigative techniques varied from water jet probes, subsurface drilling and sample collection, hydrographic surveys, and seismic reflection surveys. Based on the data collected, it was generally inferred that the Nye Mudstone varies in depth throughout the North Marina from a MLLW elevation of -6 to -55 ft. The mudstone is overlain by fine sand and shell fragments with varying silt content with a thickness varying from 5 to 10 ft on average. More recent geotechnical investigations in 2024 confirm the Nye Mudstone is located approximately –20 ft MLLW behind the breakwater and –22 ft MLLW to the west of the breakwater (GRI 2025).

4.16.1.4 Current Sediment Conditions

Surface sediments behind the breakwater were tested in August 2022 and were 65% sand and gravel, and 28% silts and clays. Total organic carbon (TOC) and total solids in the sediments were 1.11% and 60%, respectively. Surface sediments slightly downstream of the marina were 95% sand and gravel, and 5% silts and clays, with 0.55% TOC and 69% total solids. All detections and non-detect method detection limits fell below 2018 SEF marine screening levels.

The Port of Newport conducted surface and subsurface investigations in February 2024 using a sonic drill to obtain samples through the length of the dredge prism to the potential post-dredge surface. The sediments were analyzed, for physical, conventional, chemical, and biological parameters. Because of the potential petroliferous content of the Nye Mudstone, samples of mudstone were tested for target contaminants of concern including total petroleum hydrocarbons (diesel and residual range), polycyclic aromatic hydrocarbons, and heavy metals. There were no exceedances of 2018 SEF screening levels including bioassay performances and chemical results for the unconsolidated material or subsequent mudstone analyses (GRI 2025).

4.16.2 Environmental Consequences of the Alternatives

4.16.2.1 No Action Alternative

Under the No Action, there would be no anticipated changes to the soil conditions in the project vicinity. Sediments beyond the current FNC would not be dredged during ongoing USACE channel maintenance activities. Any petroleum hydrocarbons or other contaminants present in the Nye mudstone layer below surface sediments would likely remain undisturbed, with a low potential to release contaminants into surrounding soils or water. Exposure of potential contaminants or aquatic disposal of dredged material would not occur.

4.16.2.2 Alternative 2: West Entrance

The west entrance construction would expose previously undisturbed mudstone which would quickly be covered by incoming sediment through seasonal high flows and sediment transport. Because chemical testing indicates the material is suitable for aquatic exposure and the relatively short duration of exposure, this effect would be negligible. Generated dredged material would likely be placed in an appropriate upland facility or placed in an ocean disposal location. During placement of dredge material at the ODMDS, nye mudstone material would be covered with maintenance dredge material, consisting of sandy, less consolidated sediment to prevent attractive habitat formation that could draw benthic organisms to the disposal location. Alternative 2 would result in minor, short-term, and local adverse effects to Soils.

4.16.2.3 Alternative 3: West Entrance with Hoist Dock Access

Excavation and dredge material placement effects would be similar to Alternative 2. A slight increase in generated dredge material would occur from inclusion of the hoist dock access area. Alternative 3 would result in minor, short-term, and local adverse effects to Soils, though of slightly greater magnitude than Alternative 2 due to the slightly large area effected.

4.16.2.4 Alternative 4: East Entrance

Excavation and dredge material placement effects would be similar to Alternative 2. There may be negligible to slight variation to sediment deposition patterns and minor variation to dredge volumes. Alternative 4 would result in minor, short-term, and local adverse effects to Soils, though of slightly greater magnitude than Alternatives 2 and 3 due to the slightly large area effected.

4.16.2.5 Alternative 5: East Entrance with Hoist Dock Access

Excavation and dredge material placement effects would be similar to Alternative 4. A slight increase in generated dredge material would occur from the addition of the hoist dock access area. Alternative 4 would result in minor, short-term, and local adverse effects to Soils, though of slightly greater magnitude than the other action alternatives due to the slightly large area effected.

Effects from the preferred alternative to Soils: Effects not significant

4.17 Water Quality

4.17.1 Affected Environment

Yaquina River water quality is part of EPA Region 10 and ODEQ water quality monitoring programs. Both entities track total maximum daily loads (TMDLs) for contaminants that may be present in surface waters. The numeric value of a TMDL represents the highest amount of a pollutant that may be present in a water body and still meet the established water quality standard. Both the EPA and state track contaminant levels in all waterbodies identified as impaired based on an Integrated Report, last prepared by Oregon and approved by the EPA on September 1, 2022, (ODEQ, 2022). There were 100 parameters assessed as part of ODEQ's 2022 Integrated Report and the Yaquina River Assessment Unit (AU) includes the estuary and lower river and is considered impaired for the following parameters: temperature, arsenic, inorganic human-health toxics, and aquatic weeds. The Yaquina River AU was first listed as

impaired in 2010 and that status was reaffirmed in the 2022 report. Impaired beneficial uses include aesthetic quality, boating, fish and aquatic life, and fishing (ODEQ, 2022).

Section 404 of the Clean Water Act (CWA) and Section 103 of the Marine Protection, Research, and Sanctuaries Act (also known as the "Ocean Dumping Act (ODA)") sediment testing regulations found at 40 CFR §§ 230.60-230.61 and 40 § CFR 227.13 (respectively) require pre-dredge sediment testing prior to aquatic disposal of the dredged material. The Portland District coordinates with the interagency Portland Sediment Evaluation Team (PSET) in dredged material evaluations to ensure dredging projects comply with these laws. The PSET is co-chaired by USACE and the EPA – Region 10; other reviewing agencies include NMFS, USFWS, Oregon Department of Environmental Quality, Washington Department of Ecology, Washington Department of Natural Resources, and Idaho Department of Environmental Quality.

In the Pacific Northwest (Oregon, Washington, and Idaho), CWA and ODA dredged material testing is performed in accordance with the 2018 Sediment Evaluation Framework for the Pacific Northwest (SEF) (Northwest Regional Sediment Evaluation Team, 2018). Marine and freshwater benthic toxicity screening levels (SLs) published in the SEF serve as surrogates for benthic toxicity testing. Bioaccumulative chemical compound concentrations were compared to the Oregon Department of Environmental Quality's 2017 bioaccumulation screening level values (SLVs) (ODEQ, Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment, 2020). Chemical concentrations in the sediment are compared to these thresholds; if any chemical concentrations exceed the SLs, solid-phase biological testing is triggered.

4.17.2 Environmental Consequences of the Alternatives

4.17.2.1 No Action Alternative

There are no anticipated effects to water quality under the No Action alternative that are not already accounted for under regular channel maintenance activities. USACE was issued a 10-year water quality certification (WQC) from the Oregon Department of Environmental Quality in 2015 for ongoing maintenance dredging for eleven navigation projects along the Oregon coast, including the Yaquina Bay and river. In that WQC, USACE described maintenance dredging that includes removing up to 25,000 cy of material from the South Beach Marina Access Channel and up to 450,000 cy of material from the main entrance and river. As part of ongoing channel maintenance, USACE complies with conditions in the WQC to protect water quality during dredging, transport, and placement activities within the ODMDS.

Annual channel maintenance likely results in temporary, localized increases in turbidity at the dredging sites and during ODMDS placement, but these effects are assumed negligible given the predominantly coarse-grained material that dissipates and settles out of the water column fairly quickly

4.17.2.2 Alternative 2: West Entrance

Deepening the west entrance and boat basin access channels will temporarily increase turbidity in surrounding waters. However, the primarily coarse-grained material would not remain suspended in the water column and dredging operations are unlikely to result in a large turbidity plume. Initial dredging to reach authorized depths could require the removal of roughly 204,351 cy of material. However, subsequent channel maintenance would likely be intermittent (i.e., perhaps at 5-year intervals) and necessitate removing no more than 25,000 cy per event. USACE would adhere to similar BMPs to protect water quality as listed under the No Action

alternative. Turbidity at the ODMDS will likely increase during disposal activities but is anticipated to dissipate fairly quickly. Alternative 2 would ultimately result in minor, short-term, local, adverse effects to water quality, slightly greater than the No Action due to the increased volume of material to be dredged and placed within the ODMDS.

4.17.2.3 Alternative 3: West Entrance with Hoist Dock Access

Alternative 3 would require roughly 20,000 cy more material be removed, resulting in potentially more dredging days and extend the temporary effects to water clarity. BMPs listed under the No Action would reduce the magnitude of effects, but Alternative 3 would likely result in minor, short-term, local, adverse effects to water quality greater than Alternative 2 because of the greater volume of material to be dredged and potentially placed within the ODMDSs. These effects would be over a broader area and for a longer duration than Alternative 2.

4.17.2.4 Alternative 4: East Entrance

Dredging the east entrance along with the basin access channels would require approximately 10,000 cy more dredging and placement than Alternative 2 and 3, but less dredging and placement than Alternatives 5. As with all action alternatives, BMPs listed under the No Action would reduce the magnitude of effects. Nonetheless, Alternative 4 would result in minor, short-term, local, adverse effects to water quality for a slightly shorter duration than Alternative 5.

4.17.2.5 Alternative 5: East Entrance with Hoist Dock Access

Alternative 5 would require the greatest volume of dredging and placement (i.e.,233,622 cy) and therefore poses the greatest potential risk to water quality. Effects would still be minor, short-term, localized, and further reduced through BMPs; but the duration and extent of adverse effects would be more than that of all other alternatives.

Effects from the preferred alternative to Water : Effects not significant

4.18 Safety

4.18.1 Affected Environment

The existing Yaquina River channel and breakwater adjacent to the Port are maintained as part of the Yaquina Bay and River Federal Navigation Project (USACE, 2015). The federally authorized elements in the vicinity of this action include:

- A channel from the inner end of the Entrance Channel at RM 0 to approximately RM 2+0 (-30 ft deep and 300 ft wide) and a turning basin at McLean Point (-30 ft deep, 900 to 1,200 ft wide and 1,400 ft long); and
- A 2,650-foot long breakwater and 400-foot shorewing protect a commercial boat basin on the north side of the bay (which was initially established by USACE).

Removing accumulated sediments to keep channels at their authorized dimensions is part of USACE mission to provide safe navigation and support commerce. The U.S. Coast Guard station just west of the marina is considered a “critical harbor of refuge” providing safe haven to boaters and is the sole site for protection in accord with public safety and regional distance requirements. Annual maintenance dredging to facilitate constant access to this harbor and ensure other recreational and commercial boaters can navigate the river is essential to safety. Occasionally, significant shoaling necessitates advanced maintenance dredging beyond the

normal channel dimensions and these activities are coordinated with state and federal resource agencies to minimize environmental effects.

4.18.2 Environmental Consequences of the Alternatives

4.18.2.1 No Action Alternative

The No Action alternative is unlikely to result in risks to safety that aren't already being realized. The lack of deeper, wider entrance and access channels throughout the marina area requires boaters with sufficient skill, experience, and awareness to successfully navigate during inclement weather and lower water levels. There are associated safety concerns and risks that would not change if proposed navigation improvements do not occur.

4.18.2.2 Alternative 2: West Entrance

Deepening and widening the west access entrance and in-marina navigation channels, along with modifications to the moorage areas around Port Dock 7 would likely reduce safety concerns by facilitating greater boat maneuverability across a wider range of vessel sizes and tidal levels. Alternative 2 would likely result in moderate, long-term, local, beneficial effects to safety greater than the No Action.

4.18.2.3 Alternative 3: West Entrance with Hoist Dock Access

Deepening the berth at the hoist dock, in addition to channel improvements listed under Alternative 2 would allow larger vessels to have safe access to the hoist dock. The hoist dock is an essential Port feature that allows boaters to remove vessels from the water that may need maintenance or repair. Larger boats would otherwise have to transit several miles upstream to the Toledo Boatyard for an alternate hoist dock site large enough to accommodate their removal from the water. Ensuring access to the hoist dock at Port facilities under Alternative 3 will improve safety by accommodating a wider range of vessels and possibly facilitating more regular maintenance by boat operators. Alternative 3 would result in moderate, long-term, local, beneficial effects to safety greater than all action alternatives and the No Action.

4.18.2.4 Alternative 4: East Entrance

As with Alternative 2, Alternative 4 would result in immediate improvements to safety by improving vessel maneuverability in an around the marina. However, because larger commercial vessels would have to travel slightly farther to reach the east entrance from the ocean and potentially face greater boat traffic near the Embarcadero dock, the potential safety benefits would be slightly less. Alternative 4 would result in moderate, long-term, local, beneficial effects to safety greater than the No Action, but less than all other action alternatives.

4.18.2.5 Alternative 5: East Entrance with Hoist Dock Access

Alternative 5 is comparable to Alternative 3 in that is also includes improved access to the hoist dock. Nonetheless, the potential benefits to safety would be reduced because the eastern entrance requires more transit time and possibly more boater traffic near the Embarcadero where a large number of private vessels dock. Alternative 5 would result in moderate, long-term, local, beneficial effects to safety that are greater than the No Action, Alternative 2 and Alternative 4, but less than Alternative 3.

Effects from the preferred alternative to Safety: Beneficial effects

5 Recommended Plan

This chapter discusses the details of the Recommended Plan, which include material quantities and classifications, requirements for O&M, dredged material placement, cost and benefits, and risk and uncertainty. The navigation improvements respond to local needs and desires as well as the economic and environmental criteria used to screen, evaluate, select, and refine measures and alternatives. If implemented, the recommended plan would handle the current and forecasted vessel fleets with improved safety, fewer delays, and less congestion and damages than under the No-Action Alternative while avoiding unacceptable adverse environmental impacts.

5.1 Recommended Plan Accomplishments

The recommended plan meets the study purpose, to improve access to and maneuverability within the Commercial Marina for the existing and emerging commercial fishing fleet's larger vessel sizes. The project is needed to reduce or eliminate transit inefficiencies due to inadequate depths of the entrance and access channels and inadequate mooring within the Commercial Marina for larger vessels. The Project would improve safety conditions within the Commercial Marina by reducing congestion, decreasing the likelihood of grounding, and improving safe harbor capabilities. Additionally, the Project would improve access to hoist dock facilities that currently have inadequate depths for larger vessels. Finally, the project would avoid and minimize effects to eelgrass to the maximum extent practicable and compensate for any significant, unavoidable losses to eelgrass beds through creation, restoration, or enhancement of a comparable area (i.e., in-kind). The plan meets the identified study objectives and addresses study problems by improving transportation efficiency and safety in a cost-effective manner.

The draft recommended plan, Alternative 3, is the NED maximizing plan and reasonably maximizes comprehensive benefits in a cost-effective manner.

5.2 Description of Recommended Plan

The Recommended Plan is Alternative 3, as identified in Section 3.4.2 and shown in Figure 3-4. For improving navigation safety at the entrance, the Recommended Plan would include deepening and authorizing the existing west access channel to a depth of -22 ft MLLW. For improved navigational safety and maneuverability as well as access to all moorage areas, the Recommended Plan would also include deepening and widening the in-marina channels to Port Docks 5 and 7 and to the hoist dock, to a depth of -20 ft MLLW. The Recommended Plan also includes deepening the hoist dock and Port Dock 7 moorage areas as LSFs to a depth of -20 ft MLLW. These depths include -2 ft to accommodate advanced maintenance and over dredge depth. The recommended bottom width is 72 ft, in compliance with EM 1110-2-1615 (Hydraulic Design of Small Boat Harbors, 1984), for vessels with good to very good controllability. The side slopes should be no steeper than 3 ft vertically to 1 foot horizontally and a minimum 50 ft offset from existing infrastructure shall be maintained where possible.

These improvements represent dredging quantities of approximately 20,000 cy from the West Entrance, 89,700 cy from the in-marina channels, and 106,800 cy from the LSF moorage areas for a total of approximately 216,470 cy. The estimated 125,340 cy of unconsolidated sand and silt and an estimated 91,140 cy of uncontaminated mudstone will be placed at the Yaquina

ODMDS.

5.3 Unavoidable Adverse Environmental Effects

There will be unavoidable adverse effects to the aquatic environment caused by proposed dredging and placement activities. Dredging, in particular, will cause short- to long-term changes to the benthic environment by removing eelgrass in the footprint of access channels that will be deepened to accommodate larger vessels and by causing direct harm to sessile benthic organisms that could be displaced or destroyed. Benthic organisms are anticipated to recolonize areas fairly quickly after dredging so the long-term effects to benthic productivity are likely minimal. It is unclear whether eelgrass might recolonize the deeper channel after initial dredging, but any future maintenance dredging would repeatedly disturb those areas, so mitigation is proposed to offset unavoidable losses to existing eelgrass habitat (Appendix D). BMPs would minimize turbidity. There are no long-term adverse effects to water quality anticipated that would affect fish or other aquatic organisms.

5.4 Mitigation for Adverse Environmental Effects*

To reduce potential adverse effects of project alternatives to eelgrass, the following or equivalent avoidance and minimization measures have been incorporated into the planning process or would be included as part of project implementation. For unavoidable losses to existing eelgrass beds, USACE and the Port are proposing mitigation measures consistent with USACE policy for planning studies (i.e., see Engineer Regulation ER 1105-2-100 and ER 1105-2-103) and as authorized by Congress under Section 906 of the WRDA of 1986.

- An eelgrass survey was conducted to determine the extent of eelgrass in the Action Area. This survey identified the boundaries and spatial distribution of existing eelgrass beds relative to the tidal elevation and the proposed dredging footprint. The Tier I survey used a combination of side-scan sonar and SCUBA to map eelgrass in the project vicinity that could be affected by proposed activities (MTS 2023).
- For planning purposes, estimates for the area of direct and indirect effects to eelgrass will be based on surveys in the port dock area that were completed in August 2023 (MTS 2023)
- Alternatives will avoid existing eelgrass beds to the maximum extent practicable, while still achieving project purposes.
- The project will seek offset measures (e.g., eelgrass transplanting, planting, etc.) for any unavoidable loss of eelgrass due to project activities.
- A USACE-approved model has been developed to compare the suitability between site(s) proposed for potential eelgrass habitat creation or enhancement with that of site(s) where eelgrass is likely to be directly affected by proposed dredging activities. The model will help estimate the area needed to offset adverse effects to existing beds.
- During the feasibility stage, USACE and Port sponsor will estimate direct and indirect effects to eelgrass based on the project footprint, identify potential areas for eelgrass offset measures, and use the aforementioned model to provide tentative estimates for the acreage targets for offsetting eelgrass impacts.
- After construction, a post-action survey of the eelgrass habitat in the Action Area and at an appropriate reference site(s) would be completed. Surveys would take place within 30

days of completion of construction, or within the first 30 days of the next active growth period that follows completion of construction and occurs outside of the active growth period.

- Any future eelgrass surveys will be conducted between May 1 and September 31 to ensure overlap with the growing season, or period when shoots would be most abundant and readily observable.
- Monitoring to achieve a successful mitigation project will include eelgrass surveys to confirm the spatial extent, plant survival, and eelgrass density within newly established beds at least annually, along with concurrent monitoring of those same metrics within a reference eelgrass bed to be identified at the start of implementation.

5.5 Monitoring and Adaptive Management*

Monitoring will occur over a 5-year adaptive management period. All monitoring and adaptive management actions included in the tentative plan are associated with eelgrass mitigation efforts and are articulated in Section 5.4 above and Appendix D.

5.6 Environmental Commitments

Environmental commitments for the recommended plan include the applicable proposed design criteria required by NMFS for SLOPES IV applicability. Additional environmental commitments would likely be required when the Section 401 WQC is obtained for the recommended plan. USACE, and its contractors, will implement applicable BMPs. .

5.7 Cost Estimate and Construction

5.7.1 General

This section presents the cost estimate and construction considerations for the Newport Commercial Marina Navigation Project as described in this Feasibility Study. The cost estimate for Alternative 3 is shown in Table 5-1. This table includes Construction First Costs, inclusive of Project Engineering and Design (PED), Lands, Easements, Rights-of-Way, Relocations and Disposal (LERRDs), Engineering During Construction (EDC), and Construction Management (CM). A 43 percent risk-based contingency has been applied to the construction cost estimate. The first cost is estimated at $13,475,000.

Table 5-1. Alternative 3 First Cost Summary Table (Oct 2024 Price Level, $1000s)

Construction Feature	Project First Cost	Federal Cost	Non-Federal Cost
Alternative 3 Total	$13,475	$6,605	$6,870
Mobilization/Demobilization	$2,316	$2,084	$232
Eelgrass Mitigation[1]	$858	$386	$472
West Entrance Channel	$533	$480	$53

Construction Feature	Project First Cost	Federal Cost	Non-Federal Cost
Port Dock 5 Channel	$455	$409	$45
Port Dock 7 Channel	$1,726	$1,553	$173
Port Dock 7[2]	$3,645	$0	$3,645
Hoist Dock Access Channel	$230	$207	$23
Hoist Dock Moorage[2]	$154	$0	$154
Outfall Relocation[2]	$528	$0	$528
Lands and Damages[3]	$133	$65	$68
Planning, Engineering, Design[3]	$1,894	$929	$966
Construction Management[3]	$1,004	$492	$512

[1] Half of estimate is for LSF work not covered under CAP
[2] Scope for LSF and not covered under CAP for Federal cost-share
[3] Costs calculated from percentage of construction cost. Federal costs calculated for 90% of covered GNF scope.

5.7.2 Criteria

ER 1110-2-1302, Engineering and Design Civil Works Cost Engineering, provides policy, guidance, and procedures for cost engineering for all Civil Works projects in the USACE.

5.7.3 Major Cost Features

The following features account for a majority of the cost estimate:

- Mobilization and demobilization of a clamshell dredging package and land-based unloading equipment
- Dredging of material at the West Entrance Channel, Port Dock 5 Channel, Port Dock 7 Channel, Port Dock 7, Hoist Dock Entrance Channel, and the Hoist Dock Moorage and placement of this material at the ODMDS.

5.7.4 Cost and Schedule Risk

An abbreviated cost risk analysis has been completed to determine a risk-based contingency to add to the cost estimate. The analysis identified the following project risks primary contributors to the risk-based contingency.

- Mudstone: The exact mudstone extents may vary from what was used to calculate the volumes for the project. Differences between the cost estimate and contractors' estimates could be a major source of pricing variance.
- Acquisition Strategy/Bidding Climate: Recent clamshell projects in the district and region have had limited competition and increased pricing. Additional set-asides could further

restrict competition. The expected period of performance during the Winter season may reduce bidders and/or increase pricing.
- Inflation: Future inflation could be higher than expected.

5.7.5 Acquisition Strategy

The cost estimate assumes that competitive pricing will be obtained, though it is not currently known if the project will have any set-aside that could restrict some competition. Any set-aside would be determined from contractor responses during sources sought.

5.7.6 Subcontracting Plan

The cost estimate is based on the work being accomplished by a dredging contractor being the prime contractor.

5.7.7 Construction Schedule

Construction is estimated to take approximately 3.2 months for the Recommended Plan. The entire construction duration with mobilization and demobilization for the Recommended plan is estimated to take approximately 3.6 months for the Recommended Plan.

5.7.8 Contractor Operations

5.7.8.1 Transportation and Staging

The dredging contractor will need to obtain local dock space for the transportation of personnel and supplies to the dredge, as well as a small local office during the project. It is not common for clamshell dredging projects to require staging area. They typically keep supplies and spare parts on the dredge or on another barge.

5.7.8.2 Construction (Dredging)

Construction will consist almost entirely of dredging for the Recommended Plan. There are two distinct materials that are expected to be encountered at the site. The overlying sediment is expected to be similar to the typical maintenance material that is typically encountered and will be dredged and placed in a split-hull scow to go offshore for disposal. Under the loose sediment, there is a layer of mudstone, which will be dredged and placed with the same, or similar, equipment, but will likely have reduced productivities, compared to the overlying sediment.

5.8 Schedule

A schedule has been developed through project closeout. The completed milestones have been identified as actual, with future milestones estimated based on funding availability and execution of a project partnership with a non-federal sponsor.

Table 5-2. Proposed Design and Implementation Schedule

Milestone	Scheduled
Federal Interest Determination	07 January 2021 (A)
Execute Feasibility Cost Share Agreement	23 April 2021 (A)

Milestone	Scheduled
Tentatively Selected Plan Milestone	24 January 2025 (A)
Initiate Concurrent Review of Draft Report	May 2025
MSC Approved Decision Document	January 2026
Initiate Design and Implementation Phase	February 2026
Execute Project Partnership Agreement	June 2026
Real Estate Certification	April 2027
Completion of Plans and Specs	April 2027
Construction Contract Award	September 2027
Construction Complete	February 2028
Monitoring and Adaptive Management Complete	October 2032
Project Closeout	November 2032

5.9 Lands, Easements, Rights-of-Way, Relocations, and Disposal

Lands needed for the Project deepening activities are all below the OHWM. USACE will utilize the navigational servitude to construct general navigation features in areas below the OHWM. The project footprint also includes the ODMDS off the coast of Newport for dredged material disposal. One outfall pipe currently located in the commercial marina and owned by Pacific Seafoods will be relocated by the Port prior to construction. For unavoidable losses to existing eelgrass beds, the Port will provide tidelands owned in fee for mitigation measures. Three sites are indicated as potential mitigation sites in Figure 5-1 but only one will be needed for implementation of the project. The most likely mitigation site is Site 1 at the Break water (Figure 5-1).

Figure 5-1. Overview of area including disposal sites.

The Port owns all the property adjacent to the Commercial Marina, but it is not anticipated that that they would need to provide any or acquire any additional lands to implement of the Recommended Plan.

5.10 Operations, Maintenance, Repair, Replacement and Rehabilitation

Upon project implementation, O&M dredging of the entrance and in marina channels would be part of the USACE's routine Oregon coast clamshell work that occurs between 15 June - 31 October. O&M for the project would take place on a 5-year basis. Maintenance dredging would result in an estimate of 10,000 cy of material dredged after 5 years and 5,000 cy per 5 years thereafter. Material would be placed at the ODMDS. However, it is likely that site will become self-sustaining, and no O&M would be required past the first 5 years after implementation.

5.11 Risk and Uncertainty

This study was undertaken using Risk Informed Decision Making to ensure that study, implementation, and project outcome risks are considered when formulating plans, selecting a plan for implementation, and during feasibility-level design efforts. The risks and uncertainties for this project have been further developed in both a Planning Risk Register and a Cost and Schedule Risk Analysis. None of the risks identified were considered significant enough from either a likelihood or consequence rating to require specific mitigation planning.

The following section provides a discussion of potential risks and uncertainty identified for the study.

- Disposal. The current assumption is that all mudstone would need to be disposed of at the ODMDS. Although the sedimentation determination memo indicates ocean disposal is appropriate for all material dredged as a part of the project, the memo has not received EPA concurrence. If concurrence is not received, an alternate placement site would need to be assessed and the recommended plan, report, and costs would be updated.

- Future O&M requirements. Existing dredge equipment is limited and may not be consistently available to remove additional annual volumes of O&M material in the new project dredge prism.

- Eelgrass Mitigation. The eelgrass mitigation is being pursued in a dynamic estuary and there is no way to control for all of the natural variability that could affect eelgrass growth and establishment. The mitigation plan includes measures to buy down this risk. For example, the parcels identified for restoration are 3 to 5 times larger than the actual area needed to compensate for eelgrass losses. This means that USACE can select the areas within those larger polygons most amenable to restoration success. In addition, USACE has identified a preferred restoration area, along with two other options in case conditions at the preferred location somehow become less suitable.

- In water work period. We are currently consulting with NMFS per the Endangered Species Act and seeking concurrence that the proposed action would not exceed take estimates under the SLOPES IV programmatic biological opinion (NMFS 2012). However, that programmatic opinion includes specifications to adhere to preferred in-water work windows to avoid and minimize potential effects to listed species. However, it may not be safe or feasible for contractors to perform the in-water work solely within the preferred work window between November 1 and February 1. The Corps will propose a variance to the work window to begin dredging in August or September, but this may require separate consultation with NMFS with a longer timeframe for receiving a final opinion due to staffing shortages and workload within their agency. Individual consultation may delay the final decision.

5.12 Environmental Operating Principles and USACE Campaign Plan

The USACE has reaffirmed its commitment to the environment in a set of "Environmental Operating Principles". These principles foster unity of purpose on environmental issues and reflect a positive tone and direction for dialogue on environmental matters. By implementing these principles within the framework of USACE regulations, USACE continues its efforts to evaluate the effects of its projects on the environment and to seek better ways of achieving environmentally sustainable solutions in partnership with stakeholders. The seven “Environmental Operating Principles” are as follows:

- Foster sustainability as a way of life throughout the organization.
- Proactively consider environmental consequences of all USACE activities and act accordingly.
- Create mutually supporting economic and environmentally sustainable solutions.
- Continue to meet our corporate responsibility and accountability under the law for activities undertaken by the USACE, which may impact human and natural environments.
- Consider the environment in employing a risk management and systems approach

throughout the life cycles of projects and programs.
- Leverage scientific, economic and social knowledge to understand the environmental context and effects of USACE actions in a collaborative manner.
- Employ an open, transparent process that respects views of individuals and groups interested in USACE activities.

The USACE Campaign Plan guides USACE policy decisions on how we organize, train, and equip our personnel; how we plan, prioritize, and allocate resources; and how we respond to emerging requirements and challenges and meet national priorities. The Campaign Plan is regularly updated and the current version of the plan covers the period of FY2018 to FY2022.

The USACE strategic plan effort towards improvement began in August 2006 with the "12 Actions for Change" and has evolved to four goals and associated objectives. Although the effort originally developed with a focus on missions that seek to manage risk associated with flooding and storm damage, the Campaign Plan Goals and Objectives are applied to all aspects of the USACE service to the nation including its civil works mission. USACE Campaign Plan Goals and Objectives are derived, in part, from the Commander's Intent, the Army Campaign Plan, and Office of Management and Budget guidance. The four goals are (1) Support National Security, (2) Deliver Integrated Water Resource Solutions, (3) Reduce Disaster Risk, and (4) Prepare for Tomorrow.

The goal and associated objectives most closely related to the study and recommendation of a navigation improvement project at the Newport Commercial Marina are:

Goal 2: Deliver Integrated Water Resource Solutions

Objective 2a – Deliver Quality Water Resources Solutions and Services

The Recommended Plan for navigation improvements at the Newport Commercial Marina meets this objective by delivering a project which, within the limits of Federal participation established by Congress, meets to the extent practicable the expectations of our partners and stakeholders in providing safe and efficient navigation for the commercial fishing fleet operating at the Port.

Objective 2c – Develop the Civil Works Program to Meet the Future Needs of the Nation

The Recommended Plan for navigation improvements at the Newport Commercial Marina meets this objective by delivering a project which, within the limits of Federal participation established by Congress, provides sustainable system of channel improvements. The study and recommendation were conducted with stakeholder engagement and the public provided an opportunity to review and comment on the study and its recommendations through the NEPA process.

Objective 2d – Manage the Lifecycle of Water Resources Infrastructure Systems to Consistently Deliver Reliable and Sustainable Performance

The project has been formulated with the complete life cycle in mind, with a consideration of the costs and impacts of both initial construction and future operations and maintenance, to determine the most cost-effective alternative solution to address problems and opportunities with navigation the Newport Commercial Marina.

5.13 Cost-sharing and Non-Federal Sponsor Responsibilities

The details behind the initial project first cost as well as expected O&M estimated at every 5 years after implementing the Recommended Plan are shown in .

Table 5-3. The Federal share is 90% and the non-Federal share is 10% of the initial project first cost for the GNF. The non-Federal sponsor is responsible for 100% of the costs of the LSF. Because the estimated cost of obtaining the required LERR creditable to the non-Federal sponsor ($577,000) is greater than 10% of the initial first cost ($522,000), no cash would be required upfront. An additional 10% in cash or over up to 30 years at a rate equivalent to current Department of the Treasury bond rates. Future operations and maintenance would be 100% a Federal responsibility. The Federal Government will design the project, prepare detailed plans and specifications and construct the project, exclusive of those items specifically required of non-Federal interests.

Table 5-3. Cost Apportionment (October 2024 price Level, $1,000)

Project Phase/Feature	**Project Cost Items**	**Federal Apportionment**	**Non-Federal Cost Apportionment**
Feasibility Phase			
Initial $100K (100% Federal) Federal Interest Determination, Project Management Plan, and Feasibility Cost Share Agreement	$100	$100	0
IFR/EA (50%Federal/50% Non-Federal)	$1,350	$675	$675
Subtotal Feasibility Study Cost	$1,450	$775	$675
Design and Implementation (D&I) Phase Recommended Plan First Cost			
General Navigation Features (GNF) – Deepening West Entrance Channel -20' MLLW, Deepening in-marina channels -18' MLLW (90% Federal/10% Non-federal)[1]	$5,259	$4,733	$526
LERRDs (100% Non-Federal)	$661	$65	$528
Subtotal Project First Costs	$5,920	$4,789	$1,054
Additional Project Implementation Requirements and Cost Adjustments			
Local Service Facilities (LSF) – Moorage Areas	$3,799	$0	$3,799
Environmental Mitigation[2]	$858	$386	$472
Planning, Engineering, Design and Construction Management[3]	$2,898	$1,421	$1,478

Project Phase/Feature	Project Cost Items	Federal Apportionment	Non-Federal Cost Apportionment
Additional 10% of General Navigation Features (GNF) (see Sec. 101(a)(2) of WRDA 1986) minus the cost of LEERDs[4]			$0
Subtotal Additional Project Implementation Requirements and Cost Adjustments	$7,555	$1,807	$5,747
Total	**$14,925**	**$7,380**	**$6,948**
Annual O&M (100% Federal)[5]		$39,000	

[1]Includes Mobilization/Demobilization.
[2]Federal apportionment only includes 90% of cost to mitigate for impacts to eelgrass from GNF only. Non-federal apportionment includes 10% of cost to mitigate eelgrass impacts from GNF and 100% of cost to mitigate eelgrass impacts from LSF.
[3]Costs calculated from percentage of construction cost. Federal costs calculated for 90% of covered CAP construction scope.
[4]The additional 10% of GNF is payable over a 30-year period.
[5]Non-federal apportionment is the total cash cost share minus the creditable LERRRDs.
[6]Assumes a 5-year maintenance cycle.

6 Compliance with Environmental and Cultural Resource Laws and Executive Orders

The following sections demonstrate compliance with all relevant environmental and cultural laws for the proposed action.

6.1 National Environmental Policy Act, as amended, 42 U.S.C. § 4321 et seq.

NEPA requires that decision making should proceed with full awareness of the environmental consequences that follow from a major federal action which significantly affects the environment. Provisions for complying with the NEPA are found in the NEPA statute and 33 CFR Part 230 (USACE procedures for implementing NEPA for the Civil Works Program). Although USACE's NEPA implementing procedures have been revoked, in an effort to maximize efficiency USACE voluntarily complied with them since preparation of this integrated NEPA document began in 2001, before CEQ and USACE regulations were rescinded.

This Environmental Assessment has been prepared in accordance with this law.

6.2 Clean Air Act (CAA) of 1970, 42 U.S.C. §7401 *et seq.*

Section 176(c) of the CAA requires that federal agencies assure that their activities are in conformance with Federally approved CAA state implementation plans for geographical areas designated as "non-attainment" and "maintenance" areas under the CAA. The EPA General Conformity Rule to implement Section 176(c) is found at 40 CFR Part 93. The rule addresses how federal agencies are to demonstrate that activities in which they engage conform to Federally approved CAA state implementation plans. The EPA rule contains a number of "exempted" or "presumed to conform" activities which include a number of USACE activities.

> The Proposed Action Area is not a non-attainment or maintenance area, and construction activities will remain in compliance with the Clean Air Act The proposed action would also not involve activities involving asbestos, a regulated industry, use of an incinerator, open burning, or hazardous materials. All vehicular and mechanical equipment used to complete the proposed action would be required to meet State emissions standards. The proposed action would involve minimal effects from noise would be minimal because it is localized, low-level, and temporary. Therefore, the proposed action is *in compliance with* this Act.

6.3 Clean Water Act (CWA) of 1972, 33 U.S.C. §1251 *et seq.*

6.3.1 Section 401 of the Clean Water Act of 1972

Section 401 of the CWA regulates a discharge of pollutants into waters of the state, including turbidity and the discharge of dredged material. Under this section of the Act, requirements and procedures are set forth to obtain WQC for activities which result in any discharge into navigable waters to ensure compliance with established effluent limitations and water quality standards. In cases where dredged material disposal is regulated under section 103 of the MPRSA and not under section 404 of the Clean Water Act (as is the case under the Recommended Plan), the USACE still seeks the State of Oregon's certification as a matter of comity under CWA section 401 [see 33 CFR § 336.2(c)].

The USACE is currently awaiting a final memorandum from the PSET as to the suitability of material for ocean disposal and concurrence from the EPA that the specified ODMDS site can indeed accommodate dredged material from the proposed access channel, including mudstone. Based on the preliminary coordination with these entities, USACE is requesting a letter of confirmation from the Oregon Department of Environmental Quality (ODEQ) indicating the agency's intent to issue a WQC for the Recommended Plan once this information is available. The Corps will request a WQC from ODEQ once the dredge material placement plan has been finalized and prior to construction.

The Proposed Action will be *in compliance with* this Act.

6.3.2 Section 402 of the Clean Water Act

The NPDES permit program controls water pollution by regulating point sources, including stormwater discharges from construction sites, that discharge pollutants into waters of the United States. In the state of Oregon, ODEQ has the delegated authority to administer the NPDES permit program and issue permits, including the construction stormwater general permits. When applicable, Corps contractors are required to prepare and submit an application for a NPDES Construction Stormwater General Permit (1200-C) to the State of Oregon for anticipated stormwater discharges from the construction site. They are considered the primary permittee because the extent of potential discharge will be based on details pertaining to contractor means and methods that are currently unknown. However, in the case of this study, the majority, if not all, construction activities are anticipated to occur via barges and dredges without land-based staging activities that would trigger the need for a NPDES permit. Should any land-based staging ultimately be deemed necessary.

6.3.3 Section 404 of the Clean Water Act

Section 404 of the CWA regulates discharge of dredged or fill material into waters of the United States. USACE proposed projects involving the discharge of dredged or fill material into waters of the United States shall be developed in accordance with guidelines promulgated by the Administrator of the Environmental Protection Agency (EPA) in conjunction with the Secretary of the Army under the authority of Section 404(b)(1) of the Clean Water Act (CWA) of 1972, unless these activities are exempted by Section 404(f) (40 CFR 230.1(a)). The purpose of Section 404(b)(1) CWA guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material (40 CFR 230.1(a)). For navigation projects, if compliance with 404(b)(1) guidelines alone prohibits the designation of a proposed dredged material disposal site, then the economic impact on navigation and anchorage shall be evaluated and USACE may recommend using the proposed site, even if it cannot be officially designated under 404(b)(1) guidelines (Section 404(b)(2) of CWA).

Section 404 of the CWA is not applicable for implementation of the Recommended Plan, as all in-water discharge of dredged material will occur within the existing ODMDS. The transport and disposal of dredged material in this location is regulated by the U.S. EPA under Section 103 of the MPRSA. Section 401 WQC is required for this project as described above. The Proposed Action complies with this Act.

6.4 Coastal Zone Management Act (CZMA) of 1972, 16 U.S.C. §1451 *et seq.*

The proposed action is in the coastal zone for the state of Oregon. This zone is described by the

Oregon Department of Land Conservation and Development as extending from Washington to California, seaward to the extent of three nautical miles, and inland to the crest of the coastal mountain range [except to the downstream end of Puget Island on the Columbia River, to Scottsburg on the Umpqua River, and to Agness on the Rogue River]. The project area was compared to the Oregon DLCD map for the extent of coastal zone under Oregon's Coastal Management Program and determined to be within the coastal zone range. This Act *is applicable* to the proposed action. A consistency determination will be prepared outlining how the Recommended Plan is consistent to the maximum extent practicable with enforceable policies of Oregon's Coastal Management Program. USACE anticipates submitting this documentation to the Oregon Department of Land Conservation and Development for concurrence by 30 July 2025. Therefore, the action will be in compliance with this Act prior to implementation.

6.5 Endangered Species Act (ESA) of 1973, 16 U.S.C. §1531 *et seq*.

Section 7(a)(2) of the ESA provides for specific coordination and consultation with the USFWS and/or NMFS (collectively "the Services"), and to ensure Federal actions will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats. USACE initiates specific coordination and consultation, as needed, for threatened and endangered species and designated critical habitat.

USACE hosted a virtual meeting on 16 January 2025 to update the Services about the final suite of alternatives under consideration and discuss environmental compliance pathways. For species under the NMFS jurisdiction, the potential use of SLOPES IV (NMFS No: 2011/05585) was discussed, consistent with recommendations received in Fish and Wildlife Coordination Act (FWCA) correspondence. USACE provided NMFS with the latest eelgrass survey results in the project vicinity on 17 January 2025 to facilitate their preliminary review. On 18 February 2025, NMFS indicated that the preferred alternative could be included under the SLOPES IV BiOp, but their concurrence was pending a review of the final eelgrass mitigation plan to be submitted with the SLOPES notification form initiating consultation. USACE will submit the SLOPES IV notification and mitigation plan to NMFS by 07 July 2025. USACE would then anticipate a response from NMFS indicating whether or not they concur with our use of SLOPES to meet ESA requirements for species under their purview by 07 August 2025.

With regard to species under the purview of the USFWS, USACE has made a no effects determination due to the nature, duration, and the location of the Proposed Activity. Placement of material into the ODMDS is unlikely to have substantive effects to prey resources for murrelets and other avian species because the method of disposal does not result in significant adverse effects to water quality and the ODMDS site has been designated in a location that largely avoids effects to critical fish habitat. One recommendation included in their FWCA response letter suggested dredged material placement to facilitate potential improvements to habitat for Western Snowy Plover, however, that recommendation was not feasible given the physical characteristics of material to be dredged from the marina access channel, operational considerations, and budget constraints. Aside from general avoidance and minimization of adverse effects to eelgrass that many fish and wildlife species rely upon, USFWS did not raise any further concerns or mention significant effects to species under their purview during the meeting in January 2025.

The Proposed Action will *comply with* this Act prior to implementation.

6.6 Farmland Protection Policy Act (FPPA) of 1994, 7 U.S.C. §4201 *et seq.*

The purpose of FPPA is to minimize to the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with State, local government, and private programs and policies to protect farmland. Federal agencies are to analyze impacts to and conversion of agricultural lands by federal actions during planning and NEPA documentation. Specifically, prime and unique farmlands, as defined in the Act, and farmlands of statewide and local importance, must be an integral part of the environmental assessment process and part of the decision as to whether significant impacts occur and require an EIS. Effects to be described include direct and indirect effect and cumulative impacts, as well as mitigation components that could be taken to lessen the impacts on prime and unique farmlands.

No farmland will be affected by the Proposed Action. The Proposed Action complies with this Act.

6.7 Fish and Wildlife Coordination Act (FWCA) of 1958, 16 U.S.C. §661 *et seq.*

The purpose of the FWCA consultation is to consider a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof in connection with such water-resource development. USACE shall coordinate with the USFWS, the NMFS, and the State agencies exercising administration over the fish and wildlife resources beginning with the initiation of the study, as practicable, and through the planning, engineering, and design phases of project development.

The USACE coordinated with NMFS and USFWS throughout the scoping phase of this project, culminating in a meeting held on July 20, 2021, to provide the Services with a final overview of the project alternatives under consideration. A formal request for FWCA coordination was sent on November 22, 2021. There was a lapse in project funding that caused a multi-year delay, so USACE sent an updated request for planning aid letters on July 10, 2024. USACE received a final planning aid letter from NMFS on September 25, 2024, and from USFWS on October 2, 2024. One recommendation included in the USFWS letter suggested dredged material placement to facilitate potential improvements to Western Snowy Plover habitat, however, that recommendation was not feasible due to the physical characteristics of material to be dredged from the marina access channel, operational considerations, and budget constraints. Both agencies recommended eelgrass avoidance to the maximum extent practicable, with possible mitigation for adverse effects to essential fish habitat. The full letter responses are included in the Supplemental Environmental Appendix (Appendix C). USACE has incorporated recommendations for eelgrass avoidance and mitigation, as described in Appendix D. The Proposed Action complies with this Act

6.8 Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976, 16 U.S.C. §1801 *et seq.*

The MSA provides for management and conservation of marine fisheries in U.S. Federal waters through Regional Fishery Management Councils. The Act requires a Federal agency to consult with the Secretary of Commerce if an action may adversely affect any Essential Fish Habitat (EFH) identified under the Act.

NMFS has conditionally concurred, via email sent on 18 February 2025, that the recommended plan will likely be consistent with SLOPES IV (NMFS No: 2011/05585) provided that the mitigation plan appropriately offsets adverse effects to eelgrass and appropriate proposed design criteria are implemented. An assessment of EFH and potential effects was included as part of the NMFS SLOPES IV BiOp. The Proposed Action *will comply with* this Act prior to implementation.

6.9 Marine Mammal Protection Act (MMPA) of 1972, 16 U.S.C. §1361 *et seq*.

The MMPA prohibits take, including the harassment, of any marine mammal. Coordination with the FWS or NMFS for species under their purview should initiate early in the study process to formulate appropriate measures to avoid take. Incidental take authorization (ITA) can be granted by NMFS / USFWS for species under their jurisdiction for those actions that only impact small numbers of a population, have no more than negligible impacts on species not listed as depleted, and do not have unmitigable adverse impacts on subsistence harvests. ITA are authorized in Incidental Harassment Authorization or Letter of Authorization permits. The process for obtaining a permit should be initiated as soon as the analysis indicates unavoidable impacts to marine mammals will occur. If an ITA is required, USACE would coordinate with the respective agency to consider the take request.

Due to the location of the Proposed Action within an active Port area with frequent navigation and no need for blasting, pile driving, or other activities that would substantially increase levels of in-water sound, there are no anticipated adverse effects to marine mammals that would require marine mammal take or a permit under the MMPA. The Proposed Action complies with this Act.

6.10 Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, 33 U.S.C. §1401 et seq. (1988)

Under the MPRSA, U.S. EPA regulates the transportation and disposal of materials, including dredged materials, into ocean waters. The MPRSA ensures that ocean disposal will not unreasonably degrade or endanger human health, welfare, or the marine environment. In cooperation with USACE, EPA evaluates candidate sites using the five general and eleven specific Ocean Dumping Criteria found at 40 CFR §§228.5 and 228.6, respectively. Once this evaluation is performed, the EPA designates ocean dredged material disposal sites under §102 of the MPRSA. Site designation is a formal rulemaking process. U.S. EPA publishes the proposed designation in the Federal Register for public review and comment; after addressing substantive comments, the site is added to regulation at 40 CFR §228.15.

USACE must receive EPA concurrence to use designated sites. Prior to seeking EPA's concurrence, USACE must evaluate the availability of other alternatives for the disposition of the dredged material (terrestrial disposal, beneficial use, etc.). USACE must also document the suitability of the dredged material for unconfined, aquatic disposal per 40 CFR §227.13. In Oregon, the 2018 Sediment Evaluation Framework for the Pacific Northwest is used to evaluate dredged material suitability, and the interagency PSET (co-chaired by EPA and USACE) performs the evaluation. The dredged material suitability determination, in combination with the Ocean Dumping Criteria evaluation for site designation, supports the MPRSA regulatory requirements.

The Yaquina North and South ODMDSs were designated by the U.S. EPA in 2012 [see 40 CFR

228.15(n)(15)]. U.S. EPA's evaluation of the Ocean Dumping Criteria supporting the designation of these sites appears in the February 2012 *Yaquina Bay, Oregon Ocean Dredged Material Disposal Sites Evaluation Study and Environmental Assessment* (U.S. EPA and USACE 2012). These sites are located in the Pacific Ocean, approximately 1.5 mi northwest and southwest of the Yaquina Bay entrance.

Under the Proposed Action, ocean disposal at one of the Yaquina ODMDSs (likely the Yaquina South ODMDS) was determined to be the least cost, most practicable and environmentally acceptable option for the disposition dredged sediments. Terrestrial disposal alternatives were evaluated and determined to be infeasible. Nearshore and estuarine beneficial use alternatives were also evaluated and eliminated from further consideration.

Sediment characterization of the proposed construction dredge prism was performed in 2023 and 2024. As of June 2025, the PSET is reviewing the Port's 21 March 2025 Sediment Characterization Report (GRI 2025) and is planning in July 2025 to issue a positive dredged material suitability determination memorandum for the material dredged as a result of the Proposed Action. Concurrently, the U.S. EPA and USACE are updating the *Yaquina Bay North and South Ocean Dredged Material Disposal Sites Site Management/Monitoring Plan* to include the proposed channel construction. As part of this effort, USACE assessed the capacity of the ODMDSs and found that there is sufficient capacity to accommodate both the construction material and future maintenance material. The USACE will seek EPA's concurrence to use one of the ODMDSs for disposal of material dredged under the Proposed Action. The Proposed Action complies with this Act.

6.11 Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. § 668 et seq.

This Act prohibits the take, possession, or disturbance of any bald or golden eagle. Associated agencies include the USFWS.

No take, possession, or disturbance of any bald or golden eagle will occur as a result of the implementation of the recommended plan. All components of the Proposed Action will take place within previously disturbed and actively maintained areas located below the high tide line. The Proposed Action complies with this Act.

6.12 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601–9675, and the Resource Conservation Recovery Act (RCRA), 42 U.S.C. §§ 6901–6992k

Consistent with the guidance in ER 1165-2-132, USACE will not participate in cleanup or other response actions related to materials regulated by CERCLA or that otherwise qualify as hazardous, toxic, or radioactive waste (HTRW). Assessments during the DMMP phase to investigate the existence, nature, and extent of such materials within the project area shall be cost shared. If an area where HTRW substances are present cannot be avoided, the area must be remediated prior to and outside the project, performed by and at the sole expense of local interests, and satisfy the requirements of local regulators. Associated agencies include the USEPA.

A desktop analysis for HTRW within the project vicinity was performed as part of this EA, and it is unlikely that HTRW will be encountered within the Proposed Action Area. No cleanup of HTRW is planned as part of the Proposed Action. The Proposed Action complies with this Act.

6.13 Migratory Bird Treaty Act (MBTA) of 1918, 16 U.S.C. §703-712.

The MBTA prohibits the take, possession, or disturbance of any migratory bird, nests, or eggs without a federal permit. Permits to take MBTA species will be sought during implementation, if necessary. Associated agencies include the USFWS.

No take, possession, or disturbance of any migratory birds, nests, or eggs will result from the Proposed Action due to the nature and location of the activity. The Proposed Action complies with this Act

6.14 National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd) (Public Law 89-669)

This Act authorizes the Secretary of the Interior (Secretary) to issue use permits for activities performed on National Wildlife Refuge whenever it is determined that such uses are compatible with the major purposes for which such areas were established. USACE shall initiate coordination with the Regional Director, USFWS, immediately upon determining that a USACE project feature or activity would likely involve the use of refuge lands. This coordination shall be designed to obtain response from the Regional Director on whether USACE activity will require a compatibility determination and, if so, the procedures that must be followed to obtain the necessary compatibility determination.

No impacts to National Wildlife Refuge lands will occur as part of the Proposed Action. The Proposed Action complies with this Act.

6.15 Native American Graves Protection and Repatriation Act 25 U.S.C. 3001 et seq.

This Act provides for the protection of Native American and Native Hawaiian human remains and cultural items on federal or Tribal lands. The intentional excavation or removal of Native American human remains and cultural items (funerary objects, sacred objects, and objects of cultural patrimony) from federal or Tribal lands for the purpose of discovery, study, or removal of such items is only permitted after consultation with culturally affiliated Indian tribes or Native Hawaiian organizations. Culturally affiliated tribes that have expressed traditional and cultural interests in the project area surroundings include the CTSI and CTGR.

Should any federal or tribal trust lands necessary for the Proposed Action be identified in the future, and/or if any Native American remains or associated cultural items are discovered during the course of the undertaking, the USACE would comply with applicable NAGPRA requirements. Therefore, the Proposed Action complies with this Act.

6.16 National Historic Preservation Act (NHPA) of 1966, 54 U.S.C. § 300101 et seq

Pursuant to Section 106 of the NHPA of 1966, as amended, USACE determined that the proposed action will have no effect to historic properties. In further compliance with NHPA, USACE is in the process of consulting this undertaking, findings and determination of effect with SHPO and affected Tribes, all of which will be completed prior to completion of the Final EA and FONSI.

Section 106 of NHPA requires federal agencies to consider the potential effects of their projects

and undertakings on historic properties eligible for, or listed on, the NRHP. Historic properties include archaeological sites or historic structures or the remnants of sites or structures that are eligible for the NRHP. To determine the potential effect of the project on known or unknown historic properties and cultural resources, the following items are analyzed: (a) the nature of the proposed activity and any effects on the landscape, (b) the likelihood that historic properties and/or significant cultural resources are or may be present within the defined project area, (c) whether the ground or landform where project activities will take place has already been disturbed by previous land-use or ground-disturbing activities before the proposed undertaking, and, the extent of the prior disturbances, and (d) reviews of listings of known archaeological or historic site locations (including site databases, areas previously surveyed, listings of sites on the NRHP, traditional cultural information obtained from affect Tribes, etc.) that occur or may be present within the APE and/or immediate surroundings.

USACE defined the APE based on review of all available project and historic property/cultural resources information and initiated consultation on the project, APE and effects determination with the SHPO, CTSI, and CTGR in early-July 2025. USACE is currently waiting for any comments and/or concurrences from the consulting parties, but none have been received prior to release of the Draft IFR/EA for public comment.

While the USACE is not aware of any specific cultural resource investigations having been previously conducted within the APE based on review of all available USACE and SHPO records, other USACE data, databases and information sources pertaining to the APE and immediate surroundings (including bathymetry and side-scan sonar data) have been reviewed and analyzed to provide up-to-date information about the presence of potential obstructions and/or underwater anomalies within the navigation channel and disposal areas; such information is invaluable for the safety of USACE dredge crews and to both identify and protect environmental and cultural resources. This data has allowed USACE to determine that the current in-water disposal method (ODMDS) will not impact any submerged resources.

Reviews of all available databases and information sources by the USACE District Archaeologist indicate that no historic properties, archaeological sites, shipwrecks, submerged cultural resources or other significant cultural areas have been documented or are known to be present within the APE. As previously noted, the only known historic structure in the immediate vicinity of the APE is a recently-modernized, ca. 1946 timber pile breakwater (located outside of the APE between the Newport Commercial Marina and navigation channel) which was reconstructed and capped with a rubble mound extension in 1997-1998. However, the proposed impact perimeters and proximity of the chosen Alternative actions will not physically impact or alter the breakwater structure, nor will the undertaking activities affect any other known historic properties or cultural resources. Therefore, based on the information described above, USACE has determined that this undertaking will result in a finding of no effect to historic properties in accordance with 36 CFR 800.4[d](1).

Pursuant to its responsibilities under Section 106 of the NHPA, 36 CFR §800.3 (c) and 36 CFR §800.3(f)(2), USACE has reviewed the undertaking for purposes of Section 106 of the NHPA and has determined that the nature of the undertaking is such that it will result in a finding of *No Effect* on any historic properties or cultural resources pursuant to 36 CFR §800.4(d)(1). In further compliance with NHPA, USACE is in the process of consulting this undertaking, findings and determination of effect with SHPO and affected Tribes. USACE submitted consultation information for this project to SHPO and affected Tribes in early-July 2025, and anticipates

completing all Section 106 of the NHPA compliance obligations for this undertaking in mid-July 2025, prior to completion of the Final EA and Draft FONSI.

6.17 Abandoned Shipwreck Act of 1987, 43 U.S.C. §§ 2101, et seq.

Under this Act, the U.S. Government asserts title to abandoned shipwrecks and transfers titles to the respective state unless the abandoned shipwreck is in or on public land or Indian lands, in which case the title remains with the U.S. Government or is transferred to the Indian tribe.

There are no known abandoned shipwrecks within the Proposed Project Area, due to the previously disturbed and maintained nature of the area. The Proposed Action complies with this Act.

6.18 Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. § 6901-6987

RCRA gives EPA the authority to control hazardous waste from the “cradle-to-grave.” This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground storage tanks storing petroleum and other hazardous substances. USACE will perform database searches to identify any potential sources of contamination. USACE will maintain a Spill Prevention, Control, and Countermeasure Plan for all its facilities and projects. Associated agencies include the EPA.

> No generation of hazardous waste will occur, and no underground storage tanks will be encountered or disturbed as a result of the implementation of the Proposed Action. A database search was completed, and no sources of contamination were found within the Proposed Action Area. All activities will occur within a previously disturbed footprint below the high tide line. The Proposed Action complies with this Act.

6.19 Compliance with Environmental and Cultural Resource Executive Orders

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
Executive Order 11593, Protection and Enhancement of the Cultural Environment	This order requires Federal agencies to preserve, restore, and maintain the historic and cultural environment of the United States. Federal agencies are	Oregon State Historic Preservation Office Federally recognized tribes: the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw	USACE abides by this EO by consulting with SHPOs and Federally recognized tribes to ensure the effects of projects on cultural resources are determined and cultural resources are preserved and protected, when possible.	Prior to completion of Final IFR/EA

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
	directed to administer the cultural properties in a spirit of stewardship and trusteeship for future generations, initiating measures in such a way that Federally owned and non-Federally owned sites, structures and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people. In addition, Federal agencies are ordered to consult with the Advisory Council on Historic Preservation to assure that Federal plans and programs contribute to the preservation	Indians, the Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Grand Ronde Community of Oregon	Compliance determination to be made after NEPA impact assessment and Section 106 consultation is complete.	

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
	and enhancement of non-Federally owned sites, structures, and objects of historical, architectural, or archaeological significance.			
Executive Order 11988, Floodplain Management, 24 May 1977	This order requires Federal agencies to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.	All Federal Agencies	The evaluation and decision making process included in this project is consistent with the eight-step decision-making process outlined in EO 11988. *Determine if the proposed action would be in the base (1 percent ACE or 1/100-year) floodplain* Proposed actions to establish new federal channels under this CAP study would take place within the base (1% ACE) floodplain. 1. *If the action is in a floodplain as determined in Step 1, notify the general public in the affected area to explain the*	The proposed action is *in compliance* with the Order.

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
			proposed action. USACE will notify interested parties and the general public on the opportunity to comment on the draft IFR/EA, including floodplain topics, during the formal public comment period. 2. *Identify and evaluate practicable alternatives to the action or to locating the action in a floodplain.* Any new navigation channel will be fully within the floodway of the Lower Yaquina River and there is no method for accommodating improved boat-based access to Port facilities that would be located outside of the base floodplain. 3. *When an action or its alternative must be carried out in the floodplain, identify beneficial and adverse impacts due to the action and any expected gains or losses of natural and beneficial floodplain*	

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
			values. The recommended alternative does not include any structural modifications in the floodplain, such as modifying the rubblemound breakwater. This action is proposing to deepen the channel and move the material upland or offshore; the base floodplain elevations should either decrease or remain unchanged as a result of this action. 4. *If an action must be located in the floodplain, identify viable methods to minimize the harm of that action. Minimization includes consideration of risks and actual harm to people, property, and the natural environment including reduced beneficial floodplain values, as well as consideration of risks and actual harm to the project itself. This also includes minimization of harm that may be*	

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
			caused by any induced development when it has been determined that there is no practicable alternative. The recommended alternative reflects the new channel alignment that would minimize adverse effects to aquatic habitat, including shellfish and eelgrass beds, to the maximum extent practicable. Additionally, this action is not likely to induce further development in the base floodplain aside from improvements to Port facilities that are necessary to achieve overall project benefits to navigation and commerce. 5. *Having identified the impacts the proposed action would have on the floodplain (Step 4), methods to minimize these impacts, and opportunities to restore and preserve floodplain values (Step 5); the*	

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
			proposed action must now be reevaluated. This EA has outlined likely placement locations for dredged material that includes ocean disposal or upland placement, depending on the type and quantity of material. The material removed from the navigation channel will be placed in areas outside the river's floodway. As such, the base floodplain elevations should either decrease or remain unchanged as a result of this action. 6. *If the final determination is made that no practicable alternative exists to locating the action in a floodplain, advise the general public in the affected area of the findings.* Interested parties are advised that no practicable alternative exists to locating this action in the floodplain.	

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
			7. *Recommend the action most responsive to objectives of the proposed action and consistent with the requirements of EO 11988 as well as other laws, Executive Orders, and requirements.* This Newport CAP study would likely have minimal effects on the conveyance capacity of the Lower Yaquina River. Similarly, this action would have negligible effects to the base floodplain hazard. Thus, there is no specific alternative that is more consistent with the requirements of Executive Order 11988.	
Executive Order 11990, Protection of Wetlands	This order requires Federal agencies to protect wetland habitats.	All Federal Agencies	If wetlands as defined in EO 11990 are identified in the project footprint, USACE will offset unavoidable wetland losses in a manner that results in no net loss of wetlands. No wetlands are within the project footprint.	Not applicable to the proposed action.

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
Executive Order 13007, Indian Sacred Sites	This order directs Federal agencies to provide access and ceremonial use of sacred sites on Federal lands and avoid affecting their physical integrity.	Federally recognized tribes: the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians, the Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Grand Ronde Community of Oregon	No Federally owned lands are known in the Proposed Action Area. Should such lands be identified in the future, the USACE and the relevant Federal agency will consult with appropriate Tribes to determine if any sacred sites are located on those lands.	Prior to completion of Final IFR/EA
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments	This order directs federal agencies to formulate and establish "regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the United States government-to-government relationships	All Federal Agencies	Consistent with this executive order, the USACE initiated consultation with the tribes that have interest in the project area. None of the tribes requested additional consultation on a government-to-government level. With these actions, the USACE is in compliance with this executive order.	Prior to completion of Final IFR/EA

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
	with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes." This consultation is meant to work towards a mutual consensus and is intended to begin at the earliest stages of planning, before decisions are made and actions are taken.			
Executive Order 13186, Migratory Birds	This order requires federal agencies to protect migratory birds. It establishes an interagency council to oversee implementation of the order.	All Federal Agencies	No effect to migratory birds will result from the Proposed Action. The Proposed Action is in compliance with this Order.	Prior to completion of Final IFR/EA
Executive Order 13751, Safeguarding the Nation from the Impacts of Invasive	This order requires Federal agencies to take reasonable measures to prevent the	All Federal Agencies	Barges, dredges, and other potential boats that would be used for in-water work are required to implement measures to prevent the introduction and	Prior to completion of Final IFR/EA, and during subsequent site-specific evaluation as

Relevant Executive Order	Requirements	Associated Agencies or Tribes	Compliance Status	Timeframe for Compliance
Species	spread and introduction of invasive species as a result of their management or construction actions.		spread of aquatic nuisance species. These measures include visual inspections; washing and disinfecting procedures; and equipment maintenance protocols. The Proposed Action is in compliance with this Order.	required
Executive Order 13287, Preserve America	This order directs Federal agencies to advance the protection, enhancement, and contemporary use of Federal historic properties, as defined in the NHPA, in its ownership and to promote partnerships for the preservation and use of historic properties, particularly through heritage tourism.	All Federal Agencies	The Proposed Action is in compliance with this Order.	Prior to completion of Final IFR/EA, and during subsequent site-specific evaluation as required

7 Summary of Public Involvement, Review Process and Consultation

7.1 Public Involvement Process

On April 17, 2025, USACE and the Port presented information on the Project to the Port of Newport Commercial Fishing User Group Committee. On May 27, 2025, USACE and the Port presented on the project to the Port of Newport Commission Budget Hearing and Regular Session which was open to the public.

7.2 Public Views and Comments

This section will be updated after the public comment period with feedback received on the draft recommended plan.

7.3 Peer Review Process

A USACE Portland District Quality Control Review occurred in May 2025, prior to public release of for the draft report. A technical and policy review will be conducted by the agency concurrent with the public review of the report.

8 District Engineer Recommendation

This study has included an examination of all potential and practicable alternatives for meeting the study objectives of to improve access to and maneuverability within the Port of Newport Commercial Marina for the existing and emerging commercial fishing fleet's larger vessel sizes. Alternative plans also considered measures to improve safety conditions and minimize future maintenance costs. The recommended alternative provides the maximum, cost effective transportation benefits that meets the objectives outlined for this study.

The recommended plan of deepening and widening of the west entrance and all in-marina channels, including access to the hoist dock, would maintain sufficient water depth for the commercial fishing fleet to access facilities within the Commercial Marina and reduce or eliminate tidal delay. The inclusion of deepening the Port Dock 7 and hoist dock moorage areas ensures adequate moorage for the commercial fishing fleet within the marina and reduces or eliminates the need for fishing vessels to call on other, more distant ports. The plan has limited impacts to environmental resources by avoiding and minimizing impacts to eelgrass and shellfish beds and by mitigating unavoidable impacts. The plan is consistent with national policy, statutes, and administrative directives. The plan has been reviewed considering overall public interest, which includes the views of the non-Federal sponsor and interested agencies. The district has concluded that the Port can meet their financial obligations and that the public interest would be served by implementation of the recommended plan.

Based on October 2024 price levels, the estimated first cost is $13,475,000. The Federal share of the project first cost is estimated to be $6,606,000 and non-Federal share is estimated to be $6,870,000 which equates to 90% Federal and 10% non-Federal for all GNFs based on the authorized depth of -20' MLLW for the entrance channel and -18' MLLW for all in marina channels. This also include the 100% non-Federal costs for all LSFs, the moorage area deepening to -18' MLLW. The estimated total Federal cost of the project (including feasibility costs) is $6,999,000. The annualized construction and O&M costs over the period of project performance (50 Years) at the FY2025 discount rate of 3.0% are estimated at $39,000. The Average Annual Benefits for the period of analysis are estimated for this project at $642,000. Resulting in Average Annual Net Benefits of $77,000 and a Benefit Cost Ratio of 1. 1.

It is recommended the proposed work be authorized and funding allotment of $319,000 be made available in FY26 to begin design work. A second allotment of $6,661,000 will be required in FY27 to complete design, construction, and project close-out.

The proposed work would include deepening and widening of the deepening and widening of the west entrance and all in-marina channels to Port Dock 7 and the hoist dock, the deepening of the Port Dock 7 and hoist dock moorage areas, and the required 2.5 acres of eelgrass mitigation as generally described in this report, under Section 107 of the 1986 WRDA, as amended. Authorization is subject to cost sharing and financing arrangements with the non-Federal sponsor, the Port, and is based on the cost sharing and financing requirements of the Section 107 program. Prior to construction, and during the Plans and Specifications phase, the non-Federal sponsor will: (1) provide all lands, easements, and rights of way necessary for project construction and operation and maintenance; and (2) hold and save harmless the United States from damages due to the construction or operation and maintenance of the project. The non-Federal sponsor will also operate and maintain the project local service facilities and the eelgrass mitigation sites after construction for the life of the project (50 years).

The recommendations contained in this report reflect information available at this time and current Departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program nor the perspective of higher levels within the Executive Branch. Consequently, the recommendations may be modified before they are approved for implementation.

9 List of Preparers

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