



MAUL FOSTER ALONGI

Port of Astoria Boatyard

Final Plan and Implementation Strategy

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Port of Astoria

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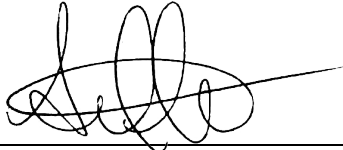
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Port of Astoria Boatyard

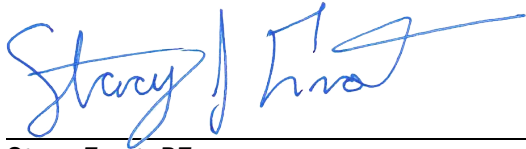
Final Plan and Implementation Study

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Abbreviations

Boatyard	Port of Astoria's Pier 3 Boatyard
City	City of Astoria
EDA	U.S. Economic Development Administration
EDA TA	EDA Technical Assistance
EDA EAA	EDA Economic Adjustment Assistance
feasibility study	Port of Astoria Boatyard and East Basin Plan
MARAD	USDOT Marine Administration
MFA	Maul Foster & Alongi, Inc.
MT	metric ton
PIDP	Port Infrastructure Development Program
PPMF	Business Oregon Port Planning and Marketing Fund
Port	Port of Astoria
SPWF	Business Oregon Special Works Fund
SF	square foot
TIF	tax increment financing
USDOT	U.S. Department of Transportation

Summary

The Port of Astoria (Port) recently completed its *Port of Astoria Boatyard and East Basin Plan* (feasibility study, BST 2022) that demonstrated clear justification for the expansion of services, infrastructure, and footprint at the Port's Pier 3 Boatyard (Boatyard) in the City of Astoria in Clatsop County. The Port engaged Maul Foster & Alongi, Inc. (MFA), to develop a master plan that will bolster the financial health of the Boatyard and support the development of the Port's infrastructure to better serve vessel owners in the region.

Purpose

This final plan and implementation strategy summarizes the master planning process and includes a description of site conditions, stakeholder feedback, and the alternative refinement process, then presents the Preferred Alternative with an implementation strategy that includes a funding strategy. The purpose of this document is not to be the final specific design but rather to develop a framework for future development of the Boatyard.

Process

An existing conditions report completed as a part of the master planning process summarizes site conditions and identifies existing opportunities and constraints with respect to physical and economic characteristics of the Boatyard. Existing plans and market studies justify growth and expansion of services at the Boatyard. Upgrades to utilities and other Boatyard infrastructure are necessary for future vertical construction and other developments.

The Port established an advisory group of key Boatyard stakeholders to participate in the Boatyard master planning process. The advisory group includes commercial fishermen, service vendors, boat suppliers, and a yacht broker. The advisory group convened twice during the master planning process to both imagine and refine alternative Boatyard concepts and identify a Preferred Alternative Concept. Port staff and MFA further refined the Preferred Alternative Concept to a more detailed design (Refined Concept) following the creation of the Preferred Alternative Concept.

Vision

The Port and its advisory group aspire to develop the best boatyard on the West Coast to serve small- to-medium-sized commercial fishing and recreational vessels. The Port can achieve this vision by developing structures that allow for year-round vessel servicing, by offering additional industrial and commercial vendor space, and by increasing lift capacity.

The Refined Concept includes necessary improvements to utilities, the in-water working dock, the bulkhead, and other site infrastructure; vertical construction of office, commercial, and industrial space; and new mobile boat hoists. Planned improvements are estimated to cost up to \$57.8 million which can be funded and financed through various state and federal programs. Figure ES-1 shows a thumbnail view of the Refined Concept.

Figure ES-1. Refined Concept



1 Introduction

The Port of Astoria (Port) recently completed *Port of Astoria Boatyard and East Basin Plan* (feasibility study, BST 2022) that demonstrated clear justification for the expansion of services, infrastructure, and footprint at the Port’s Pier 3 Boatyard (Boatyard) in the City of Astoria in Clatsop County. The Port engaged Maul Foster & Alongi, Inc. (MFA), to develop a master plan that would bolster the financial health of the Boatyard and support the development of Port infrastructure to better serve vessel owners in the region. This final plan and implementation strategy summarizes the master planning process and includes a description of site conditions, stakeholder feedback, and the alternative refinement process, then presents the Preferred Alternative with an implementation strategy that includes a funding strategy. The purpose of this document is not to outline the final specific design but rather to develop a framework for future development of the Boatyard.

2 Existing Conditions

An existing conditions memorandum (Appendix A), completed as a part of the master planning process, identifies existing opportunities and constraints with respect to physical and economic characteristics of the Boatyard. Existing plans and market studies justify growth and expansion of services at the Boatyard. City zoning and comprehensive planning documents support the Boatyard improvements considered in the current master planning process. Stakeholder outreach conducted as a part of the existing conditions memorandum recorded support of Boatyard improvements from key Boatyard users. Boatyard utilities, including power and sanitary sewer, need to be upgraded to accommodate vertical construction. Table 2-1 summarizes key findings and the implications of existing conditions for Boatyard master planning. A full existing conditions report is attached as Appendix A for greater detail.

Table 2-1. Key Findings and Implications from the Existing Conditions Memo

Section	Findings
Infrastructure & Site Conditions	<ul style="list-style-type: none"> • Existing power and sanitary sewer utilities will need to be upgraded and expanded to accommodate future development at the Boatyard. • Repairs to the east dock, the bulkhead, and storage area pavement on the north side of the Boatyard may be required prior to, or during development of the Boatyard. • There is a lack of geotechnical and environmental information available regarding the conditions in dredge spoil piles.

Section	Findings
Market / Economics	<ul style="list-style-type: none"> • The Boatyard is geographically well-positioned to capture vessel maintenance projects from all over the West Coast. • Recreational boating and commercial fishing have significant economic impacts in the area and create a market for future Boatyard developments. • There is an increase in Boatyard and haulout activity in Clatsop County which indicates future demand for the Boatyard. • The majority (51 percent) of existing Boatyard users are recreational power or sailboat users. The Boatyard can strategically invest in amenities for this type of boat user to maximize market capture.
Plans & Regulations	<ul style="list-style-type: none"> • Traffic caused by the mixed-use developments envisioned in the <i>Port of Astoria Waterfront Master Plan</i> (Port 2022) may impact future Boatyard activity. • Most elements of the <i>Port of Astoria Boatyard and East Basin Plan</i> (feasibility study) Preferred Alternative are supported by the advisory group besides maintenance of the existing 80 metric ton lift. • Zoning and comprehensive planning documents support Boatyard improvements and activity considered in the current master planning process. • In-water work required by any projects recommended in this plan will trigger the requirement for environmental permits, the time and cost of which must be incorporated early into the project schedule and scope. • Future developments within the 100-year floodplain will be required to adhere to specific development standards that will make development more expensive.
Community and Advisory Group Outreach	<ul style="list-style-type: none"> • There is strong support among Boatyard users for a higher-capacity lift and for work buildings at the Port. • The community of local vendors and suppliers will lease space and contribute to future Boatyard buildings. • The Boatyard is losing business it would otherwise attract if it contained a larger capacity lift and work buildings. • Work buildings or shelters and more accessible and adequate power sources could significantly improve efficiency and job times for vendors and vessel owners.

3 Stakeholder Feedback

3.1 Existing Conditions

The Port established an advisory group of key Boatyard stakeholders to participate in the Boatyard master planning process at the onset of the project. The advisory group included commercial fishermen, service vendors, boat suppliers, and a yacht broker. Six of the advisory group members were first interviewed over the phone during completion of the existing conditions report and were asked a series of questions related to the existing conditions and future use of the Boatyard.

Both recreational and commercial boaters have several options for boat storage and servicing along the West Coast. Advisory group members generally consider the Boatyard’s location and

convenience of access as its main appeal. Some advisory group members also consider the do-it-yourself character and access to local small-business vendors as key benefits for existing users. Existing commercial and recreational boaters of the advisory group enjoy the proximity of England Marine for readily available boat materials. Local vendors and suppliers would have the opportunity and capacity to grow with future Port investments.

Members of the advisory group recognize Boatyard challenges, including insufficient lift capacity, lack of adequate infrastructure, and lack of covered and enclosed work areas. Several advisory group members believe the Port is losing crucial business to other West Coast ports—such as Port Townsend, Ilwaco, Port Angeles, Blaine, and Bellingham, in Washington, and Reedsport, Newport, and Toledo in Oregon—with larger lift and storage capacity. Existing vendors and boat owners are limited in their ability to complete repair and maintenance work, including sand blasting, washing, and painting, due to the lack of shelter from year-round windy conditions in Astoria. Existing users also mentioned the lack of access to power sources with adequate voltage for tool operation as a drawback of the existing Boatyard. Advisory group members viewed some shifts in Port leadership, goals, and vision as an impediment to cohesive progress for Boatyard development.

3.2 Charette and Advisory Group Workshops

On November 15, 2023, the advisory group met in Astoria to identify a clear vision for the Boatyard expansion and design. The group aspires to develop the best boatyard on the West Coast to serve small-to-medium-sized commercial fishing and recreational vessels. The Port can achieve this vision by developing structures that allow for year-round vessel servicing, by offering additional industrial and commercial vendor space, and by increasing lift capacity. Taking into consideration existing conditions, opportunities, constraints, and aspirations, the advisory group worked to develop three design concepts.

Figure 2-1. Advisory Group Workshop



The concepts imagined in this workshop are the basis for the three alternative concepts described in Section 4 of this report. The advisory group convened again on February 20, 2024, to further refine the design concepts and identify a preferred alternative. In the February meeting, the advisory group identified desirable elements from each Boatyard concept to be integrated into a Preferred Alternative Concept. Figure 2-1 captures advisory group members and Port staff sharing ideas on alternative concept designs.

4 Alternatives Analysis

4.1 Alternatives Concepts

MFA produced three alternative Boatyard design concepts based on input gathered at the November charrette. Each concept includes a 400 metric ton (MT) boat lift, a 150 MT boat lift, a variety of small and large vessel¹ stalls, indoor/covered working spaces, commercial and industrial buildings, and other complementary Boatyard elements. Cost estimates for the alternatives are based on an engineer's preliminary opinion of probable cost and account for site preparation, belowground utilities, infrastructure, design and project management, and contingency. Thumbnail figures of the site plans are provided below. The full-sized conceptual design plans and associated costs for each concept can be found in Appendix B.

4.1.1 Concept 1

Alternative Concept 1 (Concept 1) provides small (30 × 80 foot [ft]) and large (50 × 110 ft) boat stalls. The 150 MT lift is positioned on the south half of Pier 3, in Slip 2 (Figure 4-1). The majority (38) of uncovered boat stalls are dedicated to small vessels and are on the south half of the Boatyard, adjacent to the 150 MT lift. There are ten covered workspaces dedicated to small vessels bordering the stormwater facility on the southwest side of the site. Circulation for vehicles servicing small vessels on the south half of the site is accommodated by 40 ft travel lanes. Access is provided off Gateway Avenue by three gate-controlled lanes.

The 400 MT lift is positioned on the north end of Pier 3, in Slip 2. Four covered working spaces for large vessels and bathrooms are located on the north tip of the Pier. In Concept 1, 37 uncovered boat stalls are dedicated to boats hoisted from the 400 MT lift. Circulation for vehicles on the northern portion of the site is provided by 60 ft travel lanes. Table 4-1 summarizes the Boatyard elements incorporated in Concept 1.

Concept 1 includes three separate buildings that enclose a shared parking area. The buildings consist of 15,000 square feet (sf) of dedicated industrial space and 41,400 sf of dedicated commercial space. The remaining 50,200 sf of onsite industrial space is accounted for in the covered workspaces on the northwest and southwest portions of the site. Table 4-1 shows the quantity and dimensions of most Boatyard elements.

¹ Large vessels are those hoisted by the 400 MT lift and small vessels are those lifted by the 150 MT lift.

Figure 4-1. Alternative Concept 1



Table 4-1. Concept 1 Layout Table

Item	Quantity
150 MT Boat Stall (30' x 80')	38
400 MT Boat Stall (50' x 80')	12
400 MT Boat Stall (50' x 90')	12
400 MT Boat Stall (50' x 100')	12
400 MT Boat Stall (50' x 110')	1
Covered Workspaces (150 MT, 2400 sf)	10
Covered Workspaces (400 MT, 5500 SF)	4
Industrial Space	65,200 sf
Commercial Space	41,400 sf

Notes

sf= square foot. MT = metric ton.

Concept 1 is the least expensive alternative with a total anticipated cost of \$37.1 million, as it requires the least square footage of vertical construction. Structural infrastructure that includes the in-water working dock, buildings, and lifts accounts for the largest expense (\$19.9 million). Table 4-2 details the feasibility-level cost estimate summary for Concept 1. A full accounting of feasibility-level cost estimates can be found in Appendix B.

Table 4-2. Concept 1 Feasibility-Level Cost Estimate Summary

Schedule	Cost
Schedule A – Site Preparation	\$3,553,000
Schedule B – Belowground Utilities	\$315,000
Schedule C – Nonstructural Infrastructure	\$2,196,000
Schedule D – Structural Infrastructure	\$19,850,000
Schedule E – Design and Project Management	\$2,592,000
Schedule F – Contingency	\$8,552,000
Total	\$37,058,000

4.1.2 Concept 2

Alternative Concept 2 (Concept 2) includes two boat stall sizes, (30 × 80 ft) and (50 × 130 ft). Most boat stalls in the Boatyard are dedicated to commercial fishing vessels that can be lifted by the 150 MT lift, which is positioned on the south half of Pier 3, in Slip 2 (Figure 4-2). There are 56 uncovered boat stalls in the south half of the Boatyard that are dedicated to small vessels. Ten covered workspaces dedicated to small vessels border the stormwater facility on the southwest side of the site. Circulation for vehicles servicing smaller vessels on the south half of the site is accommodated by 60 ft travel lanes. Access is provided off Gateway Avenue by three gate-controlled lanes. The main access gate faces east and leads to a parking area on the southeast corner of the Boatyard.

Figure 4-2. Alternative Concept 2



The 400 MT lift is positioned in the Columbia River on the north end of Pier 3. The associated boat wash is just south of the lift, adjacent to a 35,000 sf industrial building. Five covered working spaces dedicated to large vessels are located on the west side of the Boatyard. In Concept 2, 27 uncovered boat stalls are dedicated to boats hoisted from the 400 MT lift. Circulation for vehicles on the northern portion of the site is provided by 80 ft travel lanes. Concept 2 has the largest conceptual in-water working dock (60 × 1000 ft) that stretches from the Attenuator Dock down to the 150 MT lift. Table 4-3 summarizes the Boatyard elements included in Concept 2.

Concept 2 includes one 35,000 sf commercial building with a parking area in the southwest corner of the site. The 96,100 sf of onsite industrial space is located in a large structure at the northern tip of the site and among the covered working space structures on the west side of the Boatyard.

Table 4-3. Concept 2 Layout Table

Item	Quantity
150 MT Boat Stall (30' × 80')	56
400 MT Boat Stall (50' × 130')	27
Covered Workspaces (150 MT, 2400 sf)	10
Covered Workspaces (400 MT, 6500 sf)	5
Industrial Space	96,100 sf
Commercial Space	35,000 sf

Notes

sf = square foot. MT = metric ton.

Concept 2 is the most expensive alternative with a total anticipated cost of \$39.5 million because it has the greatest square footage of vertical construction. Structural infrastructure that includes the in-water working dock, buildings, and lifts accounts for the largest expense (\$21.2 million). Table 4-4 details the feasibility-level cost estimate summary for Concept 2. A full accounting of feasibility-level cost estimates can be found in Appendix B.

Table 4-4. Concept 2 Feasibility-Level Cost Estimate Summary

Schedule	Cost
Schedule A – Site Preparation	\$3,635,000
Schedule B – Below Ground Utilities	\$315,000
Schedule C – Non Structural Infrastructure	\$2,540,000
Schedule D – Structural Infrastructure	\$21,146,000
Schedule E – Design and Project Management	\$2,764,000
Schedule F – Contingency	\$9,120,000
Total	\$39,520,000

4.1.3 Concept 3

Alternative Concept 3 (Concept 3) includes two boat stall sizes including (30 × 80 ft) for small vessels and (50 × 180 ft) for large vessels. Most boat stalls in the Boatyard are dedicated to commercial fishing vessels that can be lifted by the 150 MT lift that is positioned on the south half of Pier 3, in Slip 2 (Figure 4-3). There are 43 uncovered boat stalls in the south half of the Boatyard dedicated to small vessels. Seven covered workspaces dedicated to small vessels border the

stormwater facility on the southwest side of the Boatyard. Concept 3 includes a Port office positioned just north of the 150 MT lift. Circulation for vehicles servicing smaller vessels on the south half of the site is accommodated by 50 ft travel lanes. Access is provided off Gateway Avenue by three gate-controlled lanes. The main access gate faces east and leads to a parking area on the southeast corner of the Boatyard.

Figure 4-3. Alternative Concept 3



The 400 MT lift that bisects two 6,000 SF in-water working docks is positioned in the middle of Pier 3 in Slip 2. Four covered working spaces for larger vessels and bathrooms are located on the northwest corner of Pier 3. In Concept 3, 18 uncovered boat stalls are dedicated to boats hoisted from the 400 MT lift. Circulation for vehicles on the northern portion of the site is provided by 90 ft travel lanes. Table 4-5 summarizes the Boatyard elements included in Concept 3.

Concept 3 includes one 37,500 sf commercial building with a parking area in the southwest corner of the site. A 5,200 sf industrial/commercial building fronts Gateway Avenue near the main entrance on the south side of the Boatyard. Covered working space structures on the west side of the Boatyard account for 84,100 sf of industrial space.

Table 4-5. Concept 3 Layout Table

Item	Quantity
150 MT Boat Stall (30' × 80')	43
400 MT Boat Stall (50' × 180')	18
Covered Workspaces (150 MT, 2,400 sf)	7
Covered Workspaces (400 MT, 9,000 sf)	4
Industrial Space	84,100 sf
Commercial Space	37,500 sf

Notes sf= square foot. MT = metric ton.

Concept 3 has a total anticipated cost of \$37.7 million. Structural infrastructure that includes the in-water working dock, buildings, and lifts accounts for the largest expense (\$26.3 million). Table 4-6 details the feasibility-level cost estimate summary for Concept 3. A full accounting of feasibility-level cost estimates can be found in Appendix B.

Table 4-6. Concept 3 Feasibility-Level Cost Estimate Summary

Schedule	Cost
Schedule A – Site Preparation	\$3,573,000
Schedule B – Belowground Utilities	\$315,000
Schedule C – Nonstructural Infrastructure	\$2,174,000
Schedule D – Structural Infrastructure	\$26,331,000
Schedule E – Design and Project Management	\$2,634,000
Schedule F – Contingency	\$8,690,000
Total	\$37,655,000

4.2 Preferred Alternative Concept

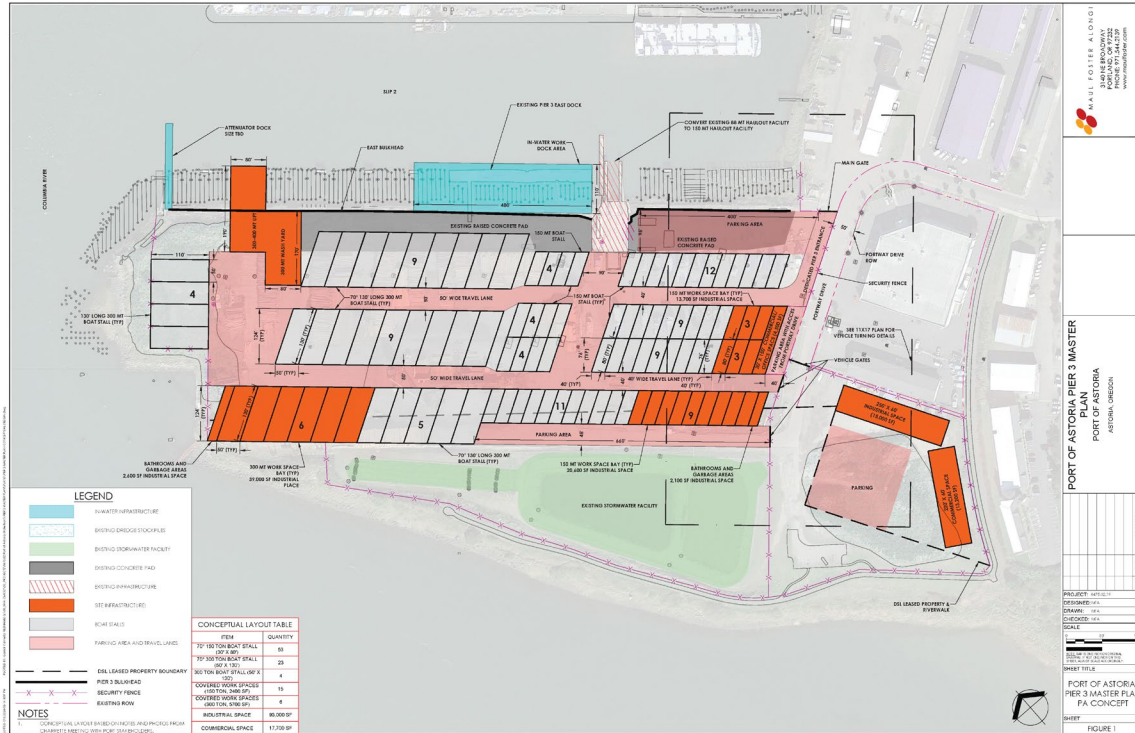
A final advisory group meeting was convened on February 20, 2024, to reach a consensus on the Preferred Alternative Concept for the Boatyard. In the meeting, advisory group members and Port staff identified desirable elements from each Boatyard concept to be implemented in the Preferred Alternative. A Preferred Alternative Concept design was drafted based upon the results of advisory group discussions.

The Preferred Alternative Concept includes elements from each Alternative Concept. The Preferred Alternative Concept includes 53 30 × 80 ft uncovered boat stalls in the south half of the Boatyard dedicated to small vessels. The small lift is positioned in the location of the existing lift on the south half of Pier 3, in Slip 2 (Figure 4-4). Nine covered workspaces bordering the stormwater facility on the southwest side of the site are dedicated to small vessels. Circulation for vehicles servicing smaller vessels on the south half of the site is accommodated by 40 ft travel lanes. Access is provided off Gateway Avenue by three gate-controlled lanes. The main access gate faces east and leads to a parking area on the southeast corner of the Boatyard.

The Preferred Alternative Concept includes angled stalls to maximize space. The front-facing commercial/office building along Gateway Avenue acts as a gateway to the Boatyard and includes an on-street parking area and adjoining indoor workspaces. There are two mixed-use buildings positioned on the southwest corner of the Boatyard, outside of the DSL property boundary. The in-water working dock is located north of the 150 MT lift to accommodate future development of the

south end of Slip 2. The full-size conceptual design plans and associated costs for the Preferred Alternative Concept can be found in Appendix B.

Figure 4-4. Preferred Alternative Concept



The 400 MT lift and wash is positioned in Slip 2, on the northeast corner of Pier 3. Six covered working spaces for larger vessels with adjoining bathrooms are located on the northwest corner of the Pier. In the Preferred Alternative Concept, 27 50 × 130 ft uncovered boat stalls are dedicated to boats hoisted from the 400 MT lift. Circulation for vehicles on the northern portion of the site is provided by 50 ft travel lanes. A wider travel lane is implemented between the 400 MT lift and large indoor working areas to accommodate cross-pier vessel transport. Table 4-7 summarizes the Boatyard elements included in the Preferred Alternative Concept.

Table 4-7. Preferred Alternative Layout Table

Item	Quantity
Angled 150 MT Boat Stall (30' × 80')	53
Angled 400 MT Boat Stall (50' × 130')	23
400 MT Boat Stall (50' × 130')	4
Covered Workspaces (150 MT, 2,400 sf)	15
Covered Workspaces (400 MT, 5,700 sf)	6
Commercial/Office Space	14,000 sf
Industrial Space	93,000 sf
Commercial Space	17,700 sf

Notes

sf= square foot. MT = metric ton.

The Preferred Alternative Concept has a total anticipated cost of \$32.3 million. Structural infrastructure that includes the in-water working dock, buildings, and lifts accounts for the largest expense (\$22.6 million). Table 4-8 details the feasibility-level cost estimate summary for the Preferred Alternative Concept. A full accounting of feasibility-level cost estimates can be found in Appendix B.

Table 4-8. Preferred Alternative Concept Feasibility-Level Cost Estimate Summary

Schedule	Cost
Schedule A – Site Preparation	\$3,395,000
Schedule B – Belowground Utilities	\$315,000
Schedule C – Nonstructural Infrastructure	\$2,201,000
Schedule D – Structural Infrastructure	\$22,599,000
Schedule E – Design and Project Management	\$2,260,000
Schedule F – Contingency	\$7,458,000
Total	\$32,317,000

4.2.1 Refined Concept

MFA further refined the Preferred Alternative Concept to a more detailed design concept (Refined Concept) based on input from Port staff. The Refined Concept includes the same large and small lift placement and in-water work dock as the Preferred Alternative Concept. The Refined Concept differs from the Preferred Alternative Concept mostly in building size and orientation. The industrial/office building fronting Gateway Avenue (Building C in Figure 4-5) is smaller than in the Preferred Alternative Concept and includes only two indoor working spaces for small vessels. The enclosed work structures (Buildings A and B in Figure 4-5) both contain five covered boat stalls and are aligned with the site boundary, not Gateway Avenue. Figure 4-5 shows a thumbnail of the Refined Concept. Detailed renderings of the Refined Concept can be found in Appendix C.

In the Refined Concept, there are two mixed-use buildings positioned on the southwest corner of the Boatyard. The southernmost building (Building D in Figure 4-5) includes six loading bays and is designed to be outside of the DSL property, while the northern building (Building E in Figure 4-5) includes five loading bays and is designed to be within the DSL boundary. Table 4-9 summarizes the Boatyard elements included in the Refined Concept.

Table 4-9. Refined Concept Layout Table

Item	Quantity
Angled 150 MT Boat Stall (30' × 80')	69
Angled 400 MT Boat Stall (50' × 130')	14
400 MT Boat Stall (50' × 130')	4
Enclosed Vessel Work Structures (150 MT, 19,300 sf)	7
Enclosed Vessel Work Structures (400 MT, 40,300 sf)	5
Port Office	15,600 sf
Mixed-Use (Building D)	33,100 sf
Mixed-Use (Building E)	44,600 sf

Notes: sf= square foot. MT = metric ton.

Figure 4-5. Refined Concept



The Refined Concept has a total anticipated cost of \$80 million. Structural infrastructure that includes the in-water working dock, bulkhead repair, buildings, and lifts accounts for the largest expense (\$47.1 million). The cost estimate for the Refined Concept includes higher estimates for site preparation, structural infrastructure, design and project management, and contingency that are higher than the estimates for the Alternative Concepts. Most of the additional costs result from the development of additional mixed-use building space in the southwest corner of the site and more accurate costs for the bulkhead repair and lifts. Table 4-10 details the feasibility-level cost estimate summary for the Refined Concept. A full accounting of feasibility-level cost estimates for the Refined Concept can be found in Appendix D.

Table 4-10. Refined Concept Feasibility-Level Cost Estimate Summary

Schedule	Cost
Schedule A – Site Preparation	\$5,483,367
Schedule B – Belowground Utilities	\$315,000
Schedule C – Nonstructural Infrastructure	\$3,030,543
Schedule D – Structural Infrastructure	\$47,137,500
Schedule E – Design and Project Management	\$5,596,641
Schedule F – Contingency	\$18,468,915
Total	\$80,031,967

5 Implementation Strategy

Strategic and coordinated actions need to be identified and pursued to sequence the Boatyard improvements identified in the Refined Concept. This section identifies possible funding opportunities and recommends next steps for implementation of Boatyard improvements.

5.1 Funding

The funding sources summarized in Table 5-1 can fund planning, design, engineering, permitting, and construction of both infrastructure and buildings. Funding strategies and sources should be examined and updated throughout early steps, as grants and loans that flow from federal sources (either directly or through state programs) are updated monthly, sometimes weekly. Appendix E provides more information on the funding opportunities listed in the table below.

Table 5-1. Funding Opportunities

Funding Source	Amount	Allowable Uses	Match
Oregon			
Business Oregon Special Public Works Fund	\$10,000,000	Finances capital improvement (acquisition, preliminary and final design, and engineering) or planning projects (technical and financial feasibility studies) that assist in developing industrial lands, supporting an immediate job creation/retention/expansion opportunity, or replacement of essential community facilities.	Low interest rate is offered over a 30-year term.
Business Oregon Port Planning and Marketing Fund	\$50,000	Funds the planning or marketing project necessary for improving the port's ability to carry out its authorized functions or activities related to trade and commerce which includes port strategic plans.	None required.
Federal			
Economic Development Administration Public Works and Economic Adjustment Assistance Programs	Grant funding from \$100,000 to \$30 million. \$3M to \$5M typical.	Funds the planning and construction of infrastructure improvements, site acquisition, site preparation, and construction.	50% match.
EDA Planning and Local Technical Assistance	\$300,000	Funds planning and engineering of infrastructure improvements.	50% match.
USDOT MARAD Small Shipyards Grants	Average \$1 Million	Planning and construction for boatyard elements such as travel lifts, fire suppression systems, floating docks, and wash equipment.	25% match.
USDOT MARAD Port Infrastructure Development Program	No maximum	Supports the operational improvements at a port and infrastructure that supports seafood and seafood-related businesses.	20% match.

Notes

MARAD= USDOT Marine Administration.
 USDOT = U.S. Department of Transportation.

5.1.1 Astor-West Urban Renewal District

The study area is in the Astor-West Urban Renewal District, which allows for the use of tax increment financing (TIF) for financing improvements. TIF allows a jurisdiction to issue bonds to fund public improvements to support development activities within a designated increment area. As development occurs and the assessed values of the properties in the increment area increase, the future increased tax revenues pay off the debt on the improvements. TIF can be used to pay the costs of planning, design, acquisition, studies and surveys, site preparation, and the construction and installation of public improvements and other directly related costs.

The City of Astoria (City) is currently updating its Astor-West Urban Renewal District Plan with an estimated completion date in the third quarter of 2024. MFA recommends that Port staff coordinate with City planning staff to include Boatyard improvements such as site preparation and utility upgrades as target projects in the updates to the upcoming Astor-West Urban Renewal District Plan.

5.2 Implementation

The implementation plan that follows (Table 5-2) includes project actions with general timing and details linked to potential funding sources. Design and permitting for Boatyard improvements can start as early as the third quarter of 2024 and last until the beginning of 2029. Vertical construction of the enclosed work structures and mixed-use buildings can begin at the beginning of 2026 following the completion of utility upgrades and site preparation. In-water improvements, such as the bulkhead and east dock repair are programmed later in the schedule to account for a permitting period with the Army Corps of Engineers and Department of State Lands. An effective marketing plan should begin early to properly advertise key actions as they are completed through the Boatyard improvement period. Figure 5-2 provides a planning-level timeline of the critical paths for these efforts—some of which will be pursued in parallel. Worksheets detailing the steps of the implementation plan can be found in Appendix F.

Table 5-2. Key Actions by Category

Action	Description	Potential Funding Source	Timing/Status
Planning and Regulatory			
Plan Updates and Development	Update upcoming strategic plan with projects and plans for the Boatyard. Formally commit the site to Boatyard use.	PPMF, Port, TIF	Short Term
Update Capital Improvement	Add targeted Boatyard improvements to Capital Facilities Plan.	PPMF, Port	Short Term
Develop Site Plan	Generate planning and engineering documents for site improvements.	EDA TA, EDA EAA, SPWF, TIF	Short Term
Permitting	Initiate permitting process with the City and U.S. Army Corps of Engineers.	Port	Short Term
Infrastructure			
Site Preparation	Initiate erosion control, sediment disposal, and demolition of inadequate surfaces.	PIDP, SPWF, EDA TA, EDA EAA, TIF	Short Term
Utility Upgrades	Extend water, sanitary sewer, and electrical utilities throughout site.	PIDP, SPWF, EDA TA, EDA EAA, TIF	Short Term

Action	Description	Potential Funding Source	Timing/Status
Paving and striping	Repave site, and stripe or paint boat stalls.	PIDP, SPWF, EDA TA, EDA EAA, TIF	Short Term
150 MT Lift	Procure and install small boat lift.	PIPD, MARAD SSG	Short Term
Enclosed work structure (small vessel)	Construct small enclosed work structure.	PIDP, SPWF, EDA TA, EDA EAA, MARAD SSG	Short Term
Bulkhead Repair	Repair bulkhead on east side of the Boatyard.	PIDP, SPWF, EDA TA, EDA EAA, MARAD SSG	Short Term
East Dock Repair	Repair East Dock in existing location.	PIDP, SPWF, EDA TA, EDA EAA, MARAD SSG	Medium Term
Commercial and Office Entrance Area	Construct building fronting Gateway Avenue.	EDA TA, EDA EAA, MARAD SSG	Medium Term
Mixed-Use Building (South)	Construct southern mixed-use building.	EDA TA, EDA EAA, MARAD SSG, TIF	Medium Term
400 MT Lift	Procure and install large boat lift including necessary Boatyard structural improvements.	PIPD, MARAD SSG	Long Term
Enclosed work structures (large vessel)	Construct large enclosed work structure.	PIDP, SPWF, EDA TA, EDA EAA, MARAD SSG	Long Term
Mixed-Use Building (North)	Construct northern mixed-use building.	EDA TA, EDA EAA, MARAD SSG	Long Term
Funding			
Apply for Planning and Infrastructure Grants	Research and develop applications for grants for roadway and utility infrastructure improvements.	Port	Short Term
Astor-West Urban Renewal District	Coordinate with City planning staff to include targeted improvements in upcoming Astor-West plan update.	Port	Short Term
Apply for construction and procurement grants.	Research and develop applications for grants for procurement of travel lifts and Boatyard improvements including vertical construction.	Port	Medium Term
Marketing			
Develop Marketing Plan	Prepare a draft marketing plan framework.	PPMF	Medium Term
Notes		MT = metric ton. PIDP = Port Infrastructure Development Program. Port = Port of Astoria. PPMF= Business Oregon Port Planning and Marketing Fund. Short Term- 1-2 years. SPWF= Business Oregon Special Works Fund. TIF= tax increment financing.	
City = City of Astoria. EAA = Economic Adjustment Assistance from EDA. EDA = U.S. Economic Development Administration. EDA TA= EDA Technical Assistance. EDA EAA= EDA Economic Adjustment. Long Term= 5+ years. MARAD SSG = USDOT Marine Administration Small Shipyard Grant.			

Figure 5-2. Action Plan Timeline

Action	2024				2025				2026				2027				2028				2029			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Site Preparation and Utilities			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Design and Permitting			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Utility Upgrades					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Site Preparation					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Pavement					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Vertical Construction									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Enclosed Work Structures									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	+
Commercial and Office Entrance Area									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Mixed-Use Buildings									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	+
Boatyard Infrastructure																								
Access Improvements																								
150 MT Lift																								
400 MT Lift																								
Boat Stalls																								
Bulkhead Repair																								+
East Dock																								+
Marketing Plan					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Develop Marketing Plan					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Implement Marketing Plan					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	+

Note
 + = Action items that are expected to last beyond the six-year period shown on the table.

Table 5-3 shows the opportunities and constraints identified in the existing conditions report and the associated Boatyard improvements and implementation actions that address them. All basic site needs, such as improved pavement and utilities, will be prioritized in the project schedule. The development of enclosed work structures and upgraded lift capacities address the majority of the structural constraints identified in the existing conditions report. Permitting concerns are addressed in cost and schedule considerations for each proposed improvement. All proposed Boatyard improvements in the Refined Concept enhance the marketability of the Boatyard and its ability to capture more of the West Coast boating market.

Table 5-3. Implementation Actions to Address Opportunities and Constraints

Identified Opportunity/Constraint	Implementation Actions
Existing power and sanitary sewer utilities will need to be upgraded and expanded to accommodate future development at the Boatyard.	<ul style="list-style-type: none"> • Site preparation • Utility upgrades
Repairs to the east dock, the bulkhead, and storage area pavement on the north side of the Boatyard may be required prior to, or during, development of the Boatyard.	<ul style="list-style-type: none"> • East dock repair • Bulkhead repair • Site preparation • Paving and striping
There is a lack of geotechnical and environmental information available regarding the conditions in dredge spoil piles.	<ul style="list-style-type: none"> • Site preparation
The Boatyard is geographically well-positioned to capture vessel maintenance projects from all over the West Coast.	<ul style="list-style-type: none"> • All proposed improvements
Recreational boating and commercial fishing have significant economic impacts in the area and create a market for future Boatyard developments.	<ul style="list-style-type: none"> • All proposed improvements
The majority (51 percent) of existing Boatyard users are recreational power or sailboat users. The Boatyard can strategically invest in amenities for this type of boat user to maximize market capture.	<ul style="list-style-type: none"> • 150 MT Lift • 400 MT Lift • Enclosed work structures
Traffic caused by the mixed-use developments envisioned in the <i>Port of Astoria Waterfront Master Plan</i> may interfere with future Boatyard activity.	<ul style="list-style-type: none"> • Access improvements
Most elements of the <i>Port of Astoria Boatyard and East Basin Plan</i> (feasibility study) Preferred Alternative Concept are supported by the advisory group besides maintenance of the existing 80 MT lift.	<ul style="list-style-type: none"> • 150 MT lift • 400 MT lift
Zoning and comprehensive planning documents support Boatyard improvements and activity considered in the current master planning process.	<ul style="list-style-type: none"> • All proposed improvements
In-water work required by any projects recommended in this plan will trigger the requirement for environmental permits - the time and cost of which must be incorporated early into the project schedule and scope.	<ul style="list-style-type: none"> • Permitting
Future developments within the 100-year floodplain will be required to adhere to specific development standards that will make development more expensive.	<ul style="list-style-type: none"> • Permitting
There is strong support among Boatyard users for a higher-capacity lift and for work buildings at the Port.	<ul style="list-style-type: none"> • 150 MT lift • 400 MT lift • Enclosed work structures

Identified Opportunity/Constraint	Implementation Actions
The community of local vendors and suppliers will lease space and contribute to future Boatyard buildings.	<ul style="list-style-type: none"> • Enclosed work structures • Mixed-use buildings • Commercial and office entrance area
The Boatyard is losing business it would otherwise attract if it contained a larger capacity lift and work buildings.	<ul style="list-style-type: none"> • 150 MT lift • 400 MT lift
Work buildings or shelters and more accessible and adequate power sources could significantly improve efficiency and job times for vendors and vessel owners.	<ul style="list-style-type: none"> • Enclosed work structures
<p>Note MT = metric ton.</p>	

References

Port. 2022. *Port of Astoria Waterfront Master Plan*. Port of Astoria & City of Astoria: Astoria, Oregon. March.

BST. 2022. *Port of Astoria Boatyard and East Basin Plan*. Port of Astoria: Astoria, Oregon. September 2.

Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Appendix A

Existing Conditions Report



MAUL
FOSTER
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Technical Memorandum

To: Matt McGrath, Port of Astoria Date: November 10, 2023
From: Garrett Augustyn, MFA Project No.: M0475.02.019
Re: Port of Astoria Pier 3 Boatyard Background Memo

Introduction and Key Findings

The Port of Astoria (Port) recently completed a Boatyard Feasibility Study that demonstrated clear justification for the expansion of services, infrastructure, and footprint at the Port's Pier 3 Boatyard (Boatyard). The Port engaged Maul Foster & Alongi, Inc. (MFA) to develop a master plan that will bolster the financial health of the Boatyard and support the development of Port infrastructure to better serve vessel owners in the region. This memo analyzes existing conditions including infrastructure and utilities, existing plans, public outreach, and code and policy framework, then identifies existing opportunities and constraints with respect to physical and economic characteristics of the Boatyard. Table 1 summarizes key findings and implications for Boatyard master planning.

Table 1. Key Findings and Implications for the Boatyard Master Plan

Section	Findings
Infrastructure & Site Conditions	<ul style="list-style-type: none">Existing power and sanitary sewer utilities are lacking and may not accommodate future development at the Boatyard.Repairs to the east dock, the bulkhead, and storage area pavement on the north side of the Boatyard may be required prior to, or during development of the Boatyard.There is a lack of geotechnical and environmental information available regarding the conditions in dredge spoil piles.
Market / Economics	<ul style="list-style-type: none">The Boatyard is geographically well-positioned to capture vessel maintenance projects from all over the West Coast.Recreational boating and commercial fishing have significant economic impacts in the area and create a market for future Boatyard developments.There is an increase in boatyard and haulout activity in Clatsop County which indicates future demand for the Boatyard.The majority (51 percent) of existing Boatyard users are recreational power or sailboat users. The Boatyard can strategically invest in amenities for this type of boat user to maximize market capture.

Section	Findings
Plans & Regulations	<ul style="list-style-type: none"> • Traffic caused by the mixed-use developments envisioned in the Waterfront Master Plan may interfere with future Boatyard activity. • Most elements of the Boatyard and East Basin Plan (feasibility study) preferred alternative are supported by the advisory group besides maintenance of the existing 88 metric ton lift. • Zoning and comprehensive planning documents support Boatyard improvements and activity considered in the current master planning process. • In-water work required by any projects recommended in this plan will trigger the requirement for environmental permits - the time and cost of which must be incorporated early into the project schedule and scope. • Future developments within the 100-year floodplain will be required to adhere to specific development standards that will make development more expensive.
Community and Advisory Group Outreach	<ul style="list-style-type: none"> • There is strong support among Boatyard users for a higher capacity lift and work buildings at the Port. • The community of local vendors and suppliers will lease space and contribute to future Boatyard buildings. • The Boatyard is losing business it may otherwise attract if it contained a larger capacity lift and work buildings. • Work buildings or shelters and more accessible and adequate power sources could significantly improve efficiency and job times for vendors and vessel owners

Study Area

The Study Area is the Port’s existing Boatyard located on Pier 3, the westernmost of three Port-owned piers situated on the Columbia River (see Figure 1). The 16-acre Boatyard includes a haulout facility, bulkheads, dredge spoil piles, the east dock, and a DSL leased parcel containing a stormwater facility and riverwalk (See Figure 2). The Boatyard is currently used for haulout, maintenance, and storage. Services offered include an 88-ton travel lift, long-term boat and trailer parking, upland vessel storage, short-term vessel project areas (powered), and equipment rental. The Boatyard is a do-it-yourself (DIY) facility where Port staff operate the Travelift and washdown, but vessel owners and vendors perform the maintenance and repair work. Other elements of the existing Boatyard include the following:

- Fifty boat stations with electricity
- A washdown pad
- A drive-out service pier, accessed via a single trestle, that can be used to move supplies on and off vessels. This pier is currently limited due to cabling for fishing vessels and does not have the capacity to adequately serve vessels.

Infrastructure

The following sections provide background information and data on the current state of the Boatyard and supporting infrastructure based on CAD data, GIS maps, and a site visit on August 16, 2023. The Boatyard is orientated at an angle relative to the cardinal points and extends in a northwest direction into the Columbia River. For purposes of this document, the northwest section of Pier 3 will be referred to as the northern section, while the southeast section be deemed the southern section.

Utilities

The Boatyard contains both operational and abandoned utilities (see Figure 1). The abandoned utilities are located in the southeast section, adjacent to Portway Drive. The abandoned utilities include water and sanitary sewer lines that were part of a former Port warehouse building (Former Building) that was present on the site during the mid-20th century (Port GIS 2023).

The operational utilities at the Boatyard include the following:

Water Mains: The water mains are located on the northeast and southeast sections of the Boatyard. Approximately 2,600 linear feet of ductile iron water mains ranging from 6 to 10 inches in diameter supply potable water to existing facilities and boat stations, as measured from the Port of Astoria GIS webmap (Port GIS 2023).

Electrical Conduit: The conduit lines are located on the southwest and southeast sections of the Boatyard. Approximately 1,300 linear feet of electrical conduit house the electrical lines that provide electricity to 50 boat stations (Port GIS 2023).

Stormwater Pipe: The stormwater conveyance system for the Boatyard is located throughout the paved areas of the Boatyard.

The stormwater conveyance system consists of approximately 2,800 linear feet of gravity fed pipe ranging from 12 to 30 inches in diameter, 1,500 linear feet of pressurized 16-inch HDPE pipe, multiple catch basins and manholes, and a lift station (Port GIS 2023).

The stormwater conveyance system transports stormwater runoff from paved areas of the Boatyard to a stormwater treatment facility (The Stormwater Facility, see the Stormwater Facility section of this report).

The pressurized stormwater pipe and approximately 800 linear feet of gravity stormwater pipe were added to the site in 2016 as part of a Tier 2 stormwater improvement project. The 2016 updates allow the stormwater conveyance system to safely handle a 2-year, 24-hour storm event.

Haulout Facility

The Pier 3 haulout facility is located on the southeast section of the site (see Figure 2).

The haulout facility includes an 88 metric-ton (MT) lift, haulout piers consisting of concrete-filled steel piles topped with continuous concrete pile caps to hold the 88 MT lift, and a designated boat wash facility with supporting infrastructure located adjacent to the haulout piers (Port 2022a).

The haulout facility is designed to transfer vessels with maximum beams of 26 feet from Slip 2 to the designated boat wash facility before the vessel is transported to a workspace for storage/repair. The haulout facility was constructed in 2004 and 2005.

Pier 3 East Dock

The Pier 3 east dock is located just north of the haulout facility and runs in-water along the east side of Pier 3 (see Figure 2).

The Pier 3 east dock was once 90-feet wide and 1,400 feet long, but only a 25-foot wide by 300-foot section of the dock remains in operation (Port GIS 2023). The wood piles from the removed sections of the east dock remain in place, though most of the dock is in poor condition. The east dock can be

accessed from the Boatyard by either a small walkway located along the south side of the dock, or a larger gangway located on the north side of the dock.

A small portion on the north end of the east dock currently services vessels in need of minor in-water repairs, maintenance, or cabling.

Bulkhead and Dredge Spoils

Bulkhead: The Pier 3 bulkhead is located along the entire eastern side, as well as a shorter section on the northern side, of Pier 3 – the latter being the remains of what was once a barge slip (see Figure 2).

The bulkhead is made of timber planks that are believed to be held together with steel rods and is designed to prevent erosion of Pier 3 from wave action. Large sections of the bulkhead located north of the east dock have collapsed, whereas the bulkhead section located south of the east dock remains intact. No visual inspection was made of the bulkhead located on the northern side of Pier 3.

Dredge Spoils: Dredge spoil piles are located on the northern and southwestern sections of Pier 3. The pile in the northern section is approximately 1.7 acres in area and 9 feet in height and the southwestern pile is 1.25 acres in area and averages approximately 10 feet in height (see Figure 2).

The dredge spoils are from sediment removal operations around Port property. As of 2023, no sampling data can be found for the dredge spoil pile. Approximately 1,600 cubic yards of dredge spoils are in the organized piles.

Storage Areas

The Boatyard has storage space located throughout the paved and gravel surface areas of the site (see Figure 2).

Storage space is located on approximately 13 acres of paved surface and approximately 1 acre of gravel surface. 50 marked boat stations are located on the paved surface along with an unknown number of additional unmarked boat stations. The gravel surface includes a limited number of workshop spaces in the form of containers. There is a lack of fencing around the entire property.

The paved portion of Pier 3 began servicing vessels between 2004 and 2005. About half of the paved portion of Pier 3 was leased to a logging company for lumber storage between 2011 and 2019. After 2019, the paved portion of Pier 3 that was once used for lumber storage has mainly remained empty, with a small portion being used for long term vessel storage.

Stormwater Facility

The Stormwater Facility is located on the southwest section of the Boatyard (see Figure 2).

The Stormwater Facility was constructed in 2016 and consists of a 0.4-acre forebay, a 0.7-acre settling pond, four parallel vegetated swales that are 14 feet in width and 340 feet in length, and supporting manholes and pipes that convey treated stormwater to a site outfall located on the west side of Pier 3.

Stormwater enters the forebay inlet from a pressurized pipe, where sediment is separated from the stormwater. The sediment settles at the bottom of the forebay, while the stormwater discharges from the forebay into the treatment pond, where additional settling occurs. Upon additional settling, the stormwater discharges through oyster mat shell filters before entering a series of biofiltration swales.

After percolating through the biofiltration swales, the treated stormwater enters a conveyance system that transports the stormwater to an outfall located on the west side of Pier 3, where it discharges into the Columbia River. This process cleans the stormwater and removes surface-based contamination.

DSL Leased Property & Riverwalk

A public park is located on a parcel that runs along the west side of the Boatyard (see Figure 2).

The parcel is 10.41 acres in size and includes a 7,000 square foot paved parking lot with 10 parking stalls, along with 1,300 feet of paved pedestrian trails extending along the western shoreline of Pier 3. The Stormwater Facility is also located within the parcel.

The parcel was leased by the Port from the Department of State Lands (DSL) in 2006 and is currently in the 17th year of a 20-year lease agreement with DSL.

Market Analysis

BST Associates and PBS Engineering and Environmental authored the Port of Astoria Boatyard and East Basin Plan (feasibility study) to inform future development decisions at the Boatyard (Port 2022a). The plan includes a preliminary buildout plan for recommended site improvements for cost estimating purposes, and preliminary development cost estimates based on stakeholder outreach, a market analysis, and an analysis of both commercial and recreational boating activities. The plan alternatives consider construction and improvement of Boatyard elements including an environmental building (to protect vessels from the elements), additional dock space, covered workshop/storage space, a restroom building, and boat lifts with capacities ranging from the existing 88 MTs to 500 MTs.

Boatyard Trends and Potential Market

The Boatyard increased in activity between 2017 and 2021 and reached its all-time peak in 2021 with 228 haulouts. The revenue generated from the Boatyard increased by an average 8.1 percent per year between 2011 and 2021 and the operating cost only increased by an average of 4 percent annually during the same period. In 2021, recreational power boats brought in the most revenue (39 percent) among Boatyard users, followed by commercial fishing boats (32 percent), recreational sailboats (19 percent), and other users (10 percent). The Boatyard faces a disadvantage to competition that can serve boats requiring greater lift capacity.

Commercial Fishing Trends

The commercial fishing industry is concentrated in a few ports across the state, one of which is Astoria (Port 2022a). Market analysis of commercial fishing trends reveals that the total number of commercial fishing boats in Oregon, Washington, and Alaska have declined over recent decades. The Astoria Port commercial fishing group (consisting of Astoria/Hammond) generates an economic impact in the region amounting to 1,440 jobs and \$697 million in total output annually.

Recreational Boating Trends

The recreational boating fleet has also experienced a decline in numbers over the past two decades (Port 2022a). This decline in the recreational fleet, however, is made up mostly of smaller boats. The number of large boats has increased at the Port over the past two decades. Clatsop County had more boating activity than any other region in the state in the third quarter of 2017 (Port 2022a). Recreational fishing is a major driver of recreational boating. The local economic impact of the Buoy 10 recreational salmon fishery, a major driver of recreational boat use in Astoria, was \$7.8 million in

2021. Businesses that service recreational boats generated an estimated output of \$297 million and 1,051 jobs in 2020.

Recommendations

The feasibility study recommends maintaining use of the existing 88 MT lift and providing support facilities such as an environmental work building upgraded electrical infrastructure, a restroom, service pier, and a storage/workshop space. The feasibility study found that increasing the size of the lift would currently be financially infeasible due to the cost of support infrastructure and recommends upgrades to or replacement of the existing lift pier and lift with a new lift of with the same capacity. The feasibility study recommends implementing a 300 MT lift if the Port chooses to add a larger lift and has the resources for lift infrastructure improvements in the future.

Plans and Regulations

This section summarizes the relevant plans, zoning code, and policy that may influence the development of the Boatyard Master Plan.

Port of Astoria Waterfront Master Plan

The 2022 Waterfront Master Plan provides a roadmap for investment and development for the Pier 1 study area, a Port owned industrial waterfront site along the Columbia River approximately 0.2 miles east of the Boatyard study area (Port 2022b). The Pier 1 study area currently consists of the west Mooring Basin, Bornstein Seafoods Facility, the Astoria Riverwalk Inn, The Red Building, The Cannery Pier Hotel, and the Chinook Building (Port 2022b). The plan provides strategies for attracting new industrial and commercial development with emphasis on the working waterfront and connection to marine heritage. The plan identifies the aging population of the area, lack of affordable housing for workers, and low-income levels as the main economic considerations for redevelopment. The following goals are provided as criteria for successful implementation of the framework plan (Port 2022b):

- Strengthen Astoria's working waterfront with a mix of uses and ongoing private investment.
- Make a place for Astorians.
- Establish long-term community support.
- Contribute to the financial stability and prosperity of the Port, City, and region.
- Support living wage jobs.
- Establish an enduring framework plan that is flexible to new opportunities and resilient to changing economic conditions.

The Master Plan envisions a mixed-use development at the Pier 1 waterfront site that would include industrial, hotel, market, and public uses as well as transportation improvements to roadways, pedestrian paths, and the waterfront trolley. The impacts of pedestrian and vehicle traffic generated by future Pier 1 developments on future Boatyard use should be considered during the Boatyard Master planning development.

Zoning

The study area is located in the Marine Industrial Shorelands zone, which has been implemented by the City of Astoria to "manage shorelands in urban and urbanizable areas especially suited for water-

dependent uses and to protect these shorelands for water-dependent industrial, commercial and recreational use” (Astoria Development Code Section 2.650).

Marine Industrial Shorelands (S1)

Land uses that are either permitted outright or allowed and conditionally in the S1 Zone are shown in Table 3, below.

Table 3. Marine Industrial Shoreland Permitted Uses

Permitted Outright	Conditionally Permitted
<ul style="list-style-type: none"> • Water-dependent industrial use • Water-dependent commercial use • Water-dependent recreational facilities, including boat ramp, dock, moorage and marina for commercial and recreational marine craft. • Other water-dependent commercial and recreational uses • Shoreline stabilization. • Navigational aide • Temporary dike for emergency flood protection limited to 60 days, subject to State and Federal regulations. • Water-related commercial and industrial use • Transportation facilities. 	<ul style="list-style-type: none"> • Retail trade facility for the sale of products such as ice, bait, tackle, charts, gasoline or other products incidental to, or used in conjunction with a water-dependent use. • Eating and drinking establishment which provides a view of the waterfront, and which is in conjunction with a water-dependent use such as a marina or seafood processing plant. • Water-related recreational use. • Aquaculture facility. • on-water-dependent and non-water-related use which is accessory to and in conjunction with permitted water-dependent and water-related use. • Non-water dependent and non-water related uses may be located in existing, under-utilized buildings provided the use does not preclude future water-dependent or water related uses.

Source: Astoria Development Code Sections 2.655-2.600

The following development standards and procedural requirements are relevant to the development considered under the Boatyard Master Plan (Astoria Development Code Section 2.665):

- Water-dependent recreation and water-dependent commercial uses shall be located so as not to interfere with water-dependent marine industrial uses of areas.
- There shall be no height limitation for structures sited within the Marine Industrial Shorelands Zone.
- Accessory structures in the Marine Industrial Shorelands Zone are limited in size to a maximum of ten percent of the lot or parcel size.
- All uses shall comply with applicable lighting standards in Section 3.128.
- All uses shall comply with the requirements of Section 3.215 for outdoor storage areas.

Urban Renewal District (Astor-West)

The study area is located in the Astor-West Urban Renewable district which allows for the use of Tax Incremental Financing (TIF) for financing improvements.

Comprehensive Plan

The City of Astoria Comprehensive Plan provides a framework to guide specific land use regulations and development patterns throughout the City. This is accomplished by adopting land use policies specific to various natural, built, and social environments, consistent with state-wide planning goals. As this document relates to the study area, The City of Astoria has adopted policies and regulations

specifically for development that may occur in the City of Astoria's estuarian and shoreland environments. These policies and regulations are contained in Comprehensive Plan sections 130-186 (Aquatic and Shoreland). While this document outlines allowed uses and other development considerations, it should be noted that pertinent regulations increase in specificity when codified in the municipal code; therefore, allowed uses and development standards should be taken from the municipal code and the Comprehensive Plan should only be referenced as needed to demonstrate on a policy scale that specific uses or plans for development of the study area are allowed.

According to the City of Astoria Comprehensive Plan section 165, the study area is regulated by policies and standards contained in the Port of Astoria Subarea Plan. This plan includes shorelands and aquatic areas around the Port of Astoria piers, along with the rest of the City's waterfront. Policies contained in this plan that may be relevant to development in the study area include the following:

- Comprehensive Plan 165(G)(2) - The 10-acre aquatic development parcel west of Pier 3 may be developed as part of a specific proposal to fully utilize the filled area inclusive of slip 2, the 2.1-acre fill, Pier 3, and the existing filled area adjacent to Pier 3.
- Comprehensive Plan 165(G)(3) - The 10-acre aquatic development area shall be developed using piling to the maximum extent feasible.
- Comprehensive Plan 165(G)(4) - Filling shall only be allowed for water-dependent uses. Specific proposals for the extent of fill or pile in the area west of Pier 3 must be justified at the time of permit application, specifically addressing physical and biological effects on the area west of Pier 3.

While filling of the aquatic area adjacent to Pier 3 isn't specifically in the master plan, it is worth noting that the City of Astoria has considered an allowance for this type of development action in the event that future redevelopment determines the need for additional land necessary for port operations.

In-Water Development Regulations

The master plan does not currently propose work below the Mean Higher High Water Mark (otherwise considered as in-water work) of the Columbia River; however, this section will briefly discuss the regulatory environment applicable to in-water work in the event that in-water work becomes necessary to support buildout of the development aspects contained in the master plan, or to accommodate future development plans.

In-water work is regulated at all three levels of government – federal (Section 10 and 404 of the Clean Water Act [CWA]), state – Oregon Department of State Lands and Oregon Department of Environmental Quality, and local – City of Astoria. Federal regulations are administered by the United States Army Corps of Engineers (the USACE). The USACE has strict permitting requirements for any structure (Section 10 CWA) or discharge of fill material (Section 404 CWA) that is placed in-water. The permitting process is led by the USACE, who will coordinate with other federal and state agencies (U.S. Fish and Wildlife Service, National Marine Fisheries Service, Oregon State Historic Preservation Office, Local Tribes, etc.) to ensure that in-water development would not impact aquatic resources, historic or cultural artifacts, or disrupt a Tribes usual and accustomed use of the shoreline. The permitting process required by the USACE can be lengthy, and oftentimes exceed well over a year for review.

State agencies will also review the permitting package prepared for the USACE. This package is collectively referred to as a Joint Permit Application. The state agencies will review the package for compliance with state-level regulations for the protection of ecological function and value of shorelines. Often, the primary difference in expectation between the regulations of federal government and state government is the best management practices proposed during construction to protect aquatic environments and life, and mitigation measures proposed to offset any detrimental impact to the environment or aquatic species. The challenge here is that the state agencies typically require intensive best management practices and mitigation measures, so developing construction practices and a mitigation plan that meets both federal and state requirements should be a key goal for expedited permit review when preparing the permit application packages. While the federal permitting pathway typically has the longest prevailing review time, the state follows close behind with permit review times often ranging from 9-12 months.

The City regulations are those discussed in the section above. The Marine Industrial Shorelands zone in which the study area is located allows in-water work either outright or conditionally. The in-water work permitting process at the local level is typically much quicker as the federal and state agencies review the project for potential impacts to aquatic species and habitats, which is the primary issue for in-water work. The city will review for compliance with development standards, which is typically a streamlined process that can be completed (land use review) in 4-6 months.

Floodplain Development

According to FEMA flood insurance rate map, panels 41007C0228E and 41007C0236E, and City of Astoria online GIS mapping, portions of the study area are within Zone AE (100-year floodplain) where there is a base flood elevation of 12 feet North American Vertical Datum of 1988 (NAVD 88). Please see Figure 4 for the areas of 100-year floodplain that intersect with the study area.

Development in the 100-year floodplain is regulated at the local level by the City of Astoria. All proposed structures and development activities at or below elevation 12 feet NAVD 88 would be subject to regulation under City of Astoria Development Code, Article 14: Flood Hazard Overlay Zone (14.520-14.545). These regulations include special requirements for all development activities, such as anchoring all substantial improvements to minimize impacts from floodwaters, use of certain building materials that are waterproof, restrictions on the type of subgrade improvements that are allowed, etc. The City of Astoria will review a development proposal's compliance with these floodplain regulations under a flood zone permit application.

Community Outreach

BST conducted outreach as a part of the Boatyard and East Basin Plan. Feedback was sought from over 30 stakeholders including vessel owners, service providers, Port staff, Port Commissioners, and others to determine the main characteristics and needs of the Boatyard. Based on stakeholder feedback, key characteristics and considerations of the Boatyard include the Boatyard as an important community and commercial asset, the importance of the Boatyard to facilitation of service providers, the need for buildings to shelter vessels from the elements, the size limitations of the existing lift, and the importance of fiscal responsibility in Port decision making and investments.

An online survey was conducted as a part of the Boatyard and East Basin Plan outreach process. The respondents of the survey include owners of commercial fishing boats, owners of recreational power and sail boats, fishing guides, and other boat owners. Responses determine existing Boatyard customers use the Boatyard mainly because of convenience and proximity, not because of the accessibility and quality of services offered. The survey also reflects the existing Boatyard users'

desire for covered boat storage and larger lifts at the Boatyard. Additional survey responses reflect a need for improved security and a concern for cost increase as a result of improvements made at the Boatyard.

Advisory Group Feedback

The Port established an advisory group of key Boatyard stakeholders to participate in the current Boatyard master planning process. The advisory group includes commercial fishermen, service vendors, boat suppliers, and a yacht broker. Six of the advisory group members were interviewed and asked a series of questions related to the existing conditions and future use of the Boatyard. This section summarizes the feedback collected during the advisory group outreach process. The questions posed to advisory group interviewees are included as an Attachment.

Both recreational and commercial boaters have several options for boat storage and servicing along the West Coast. Advisory group members generally consider the Boatyard's location and convenience of access as its main appeal. Some advisory group members also consider the do-it-yourself (DIY) character and access to local small-business vendors as key benefits for existing users. Existing commercial and recreational boaters of the advisory group enjoy the proximity of Englund Marine for readily available boat materials. Local vendors and suppliers have the opportunity and capacity to grow with future Port investments.

Members of the advisory group recognize Boatyard drawbacks including insufficient lift capacity, lack of adequate infrastructure, and inconsistency of Port direction. Several advisory group members believe the Port is losing crucial business to other West Coast Port's such as Port Townsend, Reedsport, Newport, Ilwaco, Toledo, Port Angeles, Blaine, Bellingham, and others with larger lift and storage capacity. Existing vendors and boat owners are limited in their ability to complete repair and maintenance work including sand blasting, washing, and painting due to the lack of shelter from year-round windy conditions. Existing users also state the lack of access to power sources with adequate voltage for tool operation as a drawback of the existing Boatyard. Advisory group members view some shifts in Port leadership, goals, and vision as an impediment to cohesive progress for Boatyard development. Table 2 summarizes advisory group feedback related to opportunities and constraints of the existing Boatyard and recommendations for future boatyard planning and development.

Table 2. Summary of Advisory Group Feedback

Opportunities	Constraints	Recommendations
<ul style="list-style-type: none"> • Convenience and ease of access • Support for local vendors, small and local businesses, and do-it yourself boat maintenance • Good and long-standing relationship with the Port • Existing lift capacity suits needs • Affordability 	<ul style="list-style-type: none"> • Lack of lift capacity • Lack of boat shelter, storage, and workspace • Lack adequate vendors/staff to satisfy service needs • Lack of vendor workspace, offices, and storage • Shortage of access to adequate power supply for both vendors and DIY maintenance • Inconsistency of Port commission direction • Lack of safety measures for vendors (fire suppression hoses and eye wash) 	<ul style="list-style-type: none"> • Increase lift capacity to capture more of the West Coast market. • Build a boat storage and maintenance facility. • Build a facility to host vendor workspaces, storage space, and offices so that more work can be done in the winter. • Create a one-stop-shop: hire a boatyard management company to run all services, supplies, and vending. • Increase marketing for services and new investments.

Summary of Opportunities and Constraints

Opportunities

Site

The site is well positioned for convenient access to commercial and recreational boaters living in the region. DIY boat maintenance and small service vendors are an attraction and keep the cost down for Boatyard customers. Port customers have ready access to supplies from Englund Marine, across the street from the Boatyard.

The Boatyard has a flat, paved and graveled surface with flexibility for various future development options. Existing stormwater and potable water infrastructure are adequate to serve new development at the Boatyard. The lease to the Department of State lands ends in three years, providing an opportunity to expand future development and activities at the Boatyard.

Economics

Recreational and commercial boat users have a significant and growing economic impact on the Port and City of Astoria, The Port is well-positioned to build on marine economic development through its investments at the Boatyard and to capture more of the West Coast regional business. This growth would support local businesses such as existing Boatyard vendors, Englund Marine, and others.

Policy

The Port’s vision for the Boatyard aligns with the allowed uses under zoning law and comprehensive planning in the study area. The feasibility study conducted in the Boatyard and East Basin Plan shows that most investments in infrastructure at the Port are in demand and financially feasible. The Port can utilize TIF to finance future Boatyard projects because it is in the Astor-West Urban Renewal district.

Constraints

Site

The Boatyard requires infrastructure investment to accommodate future Boatyard development. The Boatyard will require improvements to sanitary sewer and electrical utilities. The timber use in the north part of the storage area left pavement in poor condition. The bulkhead requires repair and will continue leading to erosion until repairs are made. The dredge spoils at the Boatyard have not yet been characterized for environmental contamination or geotechnical integrity. The cost of removal of dredge spoils and magnitude of liability to the Port are contingent on the characterization of the dredge material.

Most existing vendors do not have adequate shelter to conduct work during poor weather conditions. Many West Coast boat users opt to use other boatyards because of the Boatyard's lack of lift capacity and storage and maintenance facilities. Some boat users are not even aware of the Boatyard because of its lack of marketing.

Economics

The decrease in fleet size, especially in the number of small vessels, will mean there are fewer boats to utilize the Port's lower-capacity travel lift. The growing number of larger boats in commercial and recreational fleets will require storage and service at boatyards with larger lift capacity. The Port is in favor of developing larger lift capacity, but the Boatyard and East Basin Plan found that increasing the capacity of the lift by any amount is currently financially infeasible.

Policy

Any future in-water work will require extensive and lengthy federal and state permitting processes through Section 10 and Section 404 of the CWA and Joint Permit Applications. Development in the Boatyard will also be subject to floodplain management regulations which will influence building standards and development costs.

Attachments

References

Limitations

Figures

Advisory Group Interview Questions

References

Port. 2022a. *Port of Astoria Boatyard and East Basin Plan*. Port of Astoria. Astoria, Oregon. September 2.

Port. 2022b. *Port of Astoria Waterfront Master Plan*. Port of Astoria & City of Astoria. Astoria, Oregon. March.

Port GIS. 2023. *Port of Astoria 2023*. (n.d.). map. Retrieved October 5, 2023, from <https://gis.cartomation.com/portofastoria/gis/> .

Limitations

The services undertaken in completing this technical memorandum were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This technical memorandum is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this technical memorandum apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this technical memorandum.



Figures



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Legend

-  Site Boundary
-  Tax Lot

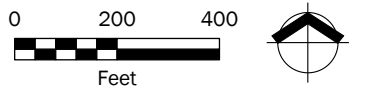
Data Sources
 Aerial photograph obtained from the State of Oregon (2022); tax lot data obtained from Clatsop County (2023).

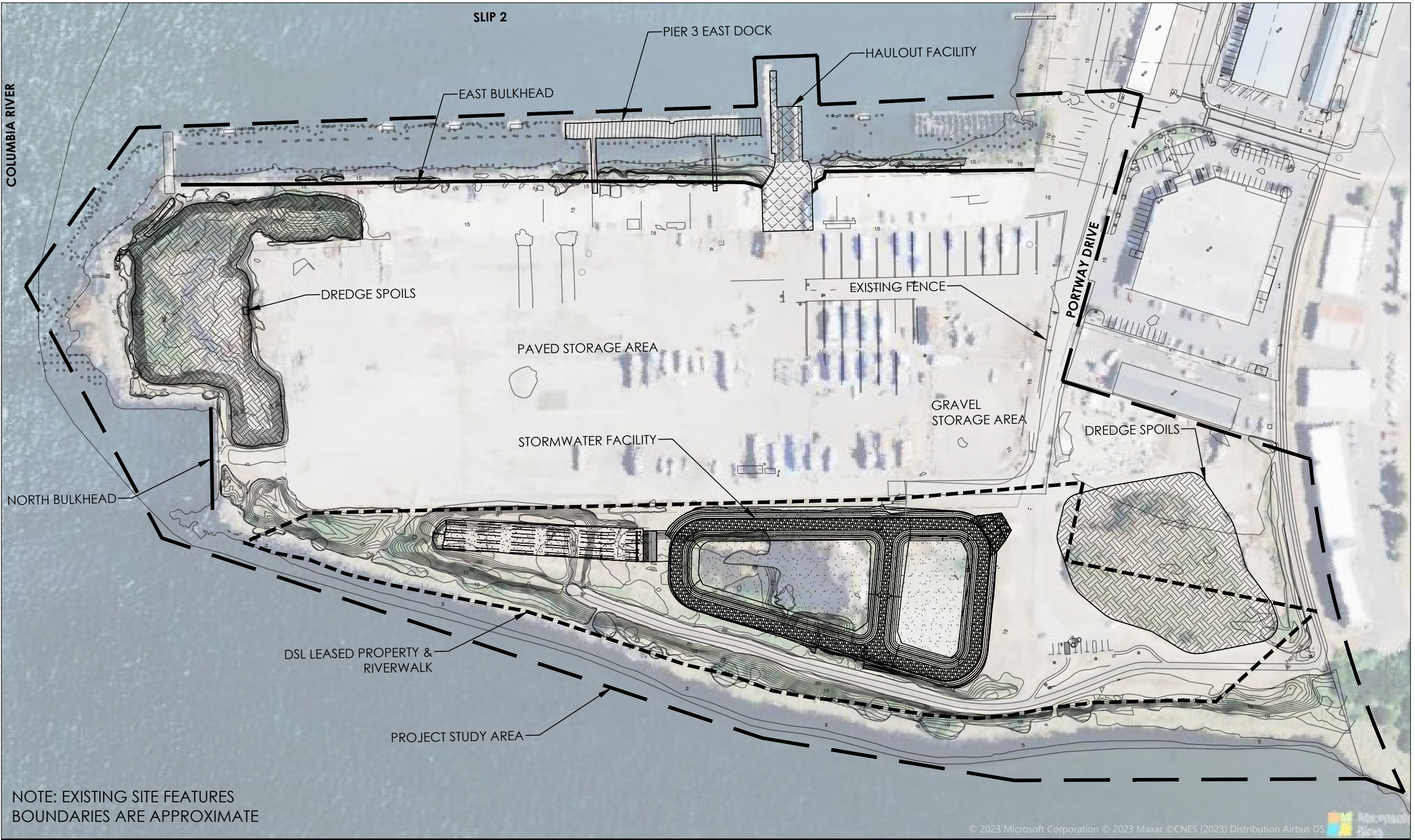


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Figure 1
Context Map

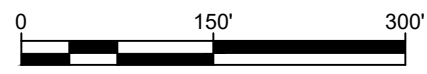
Port of Astoria
 Pier 3 Master Plan
 Astoria, OR





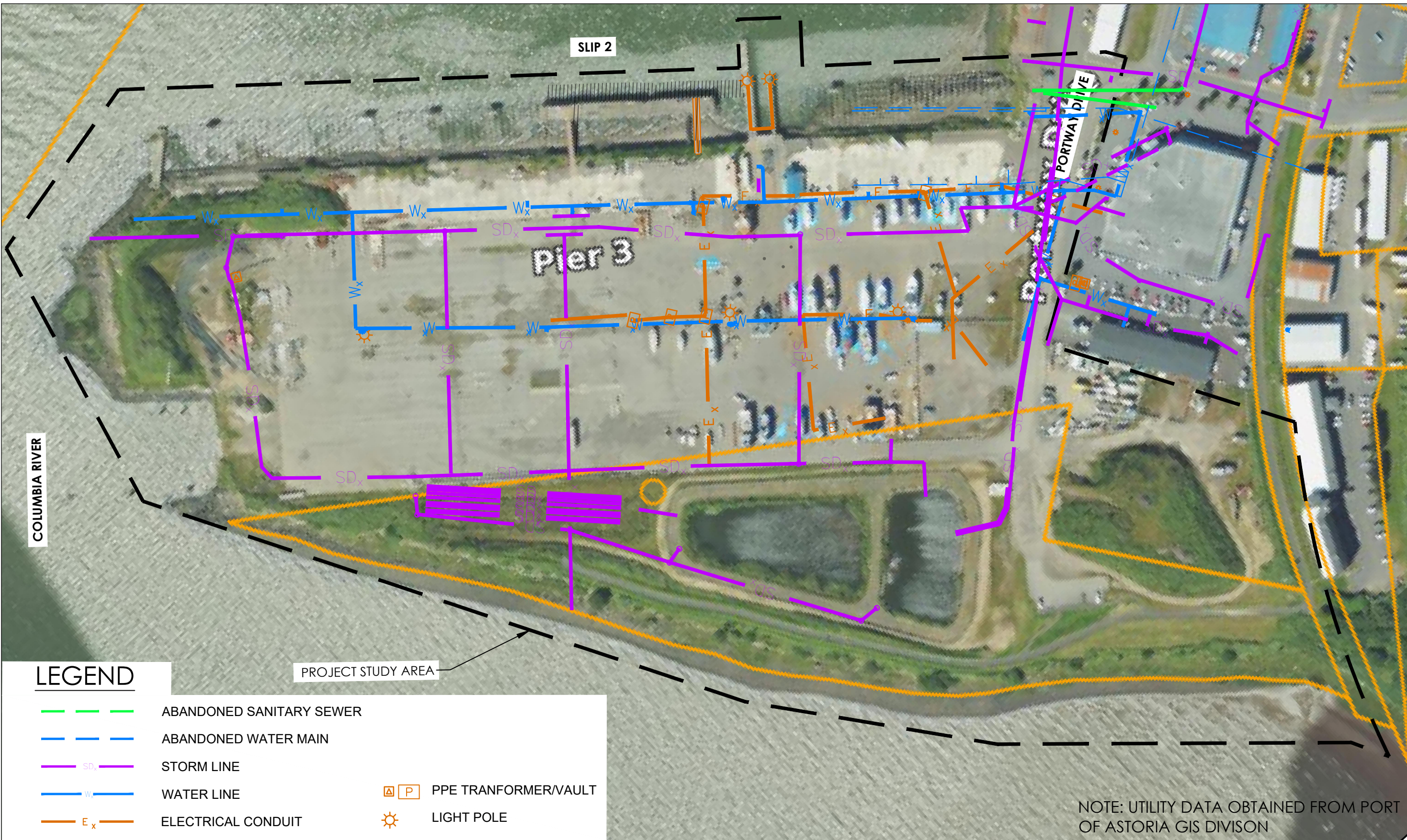
NOTE: EXISTING SITE FEATURES BOUNDARIES ARE APPROXIMATE

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Figure 2
Existing Site Features
 Port of Astoria Pier 3 Master Plan Project
 Astoria, Oregon



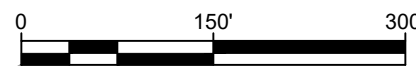
LEGEND

- ABANDONED SANITARY SEWER
- ABANDONED WATER MAIN
- STORM LINE
- WATER LINE
- ELECTRICAL CONDUIT
- PPE TRANSFORMER/VAULT
- LIGHT POLE

NOTE: UTILITY DATA OBTAINED FROM PORT OF ASTORIA GIS DIVISION



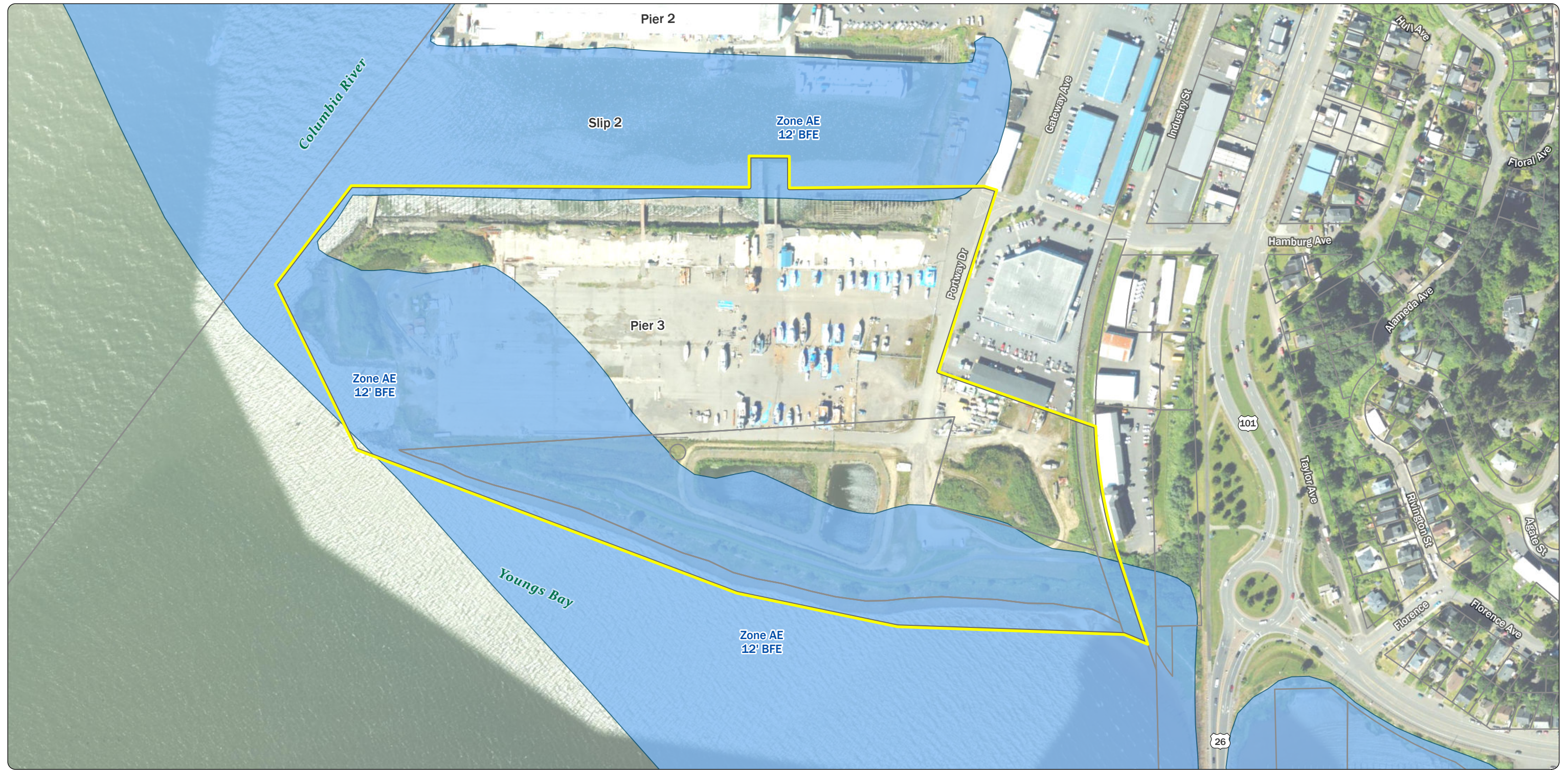
This figure prepared as supplemental visual information only and should not be used for construction purposes. Only plan sheets approved, stamped and signed by a registered professional engineer in the state of governing jurisdiction shall be used for construction. Additionally, only plans approved by the applicable governing jurisdiction(s) shall be used for final construction unless otherwise expressly noted in writing by the engineer of record.



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Figure 3
Existing Utilities Map
 Port of Astoria Pier 3 Master Plan Project
 Astoria, Oregon

Path: X:\0475\02 Port of Astoria\Projects\Pro\M0475_02_017_004.aprx\Fig 4 FEMA Flood Zones
Print Date: 10/25/2023
Reviewed By: jgaugustin
Produced By: jroberts
Project: M0475_02_017



Notes
Flood elevations are relative to the North American Vertical Datum of 1988.
BFE = base flood elevation.
FEMA = Federal Emergency Management Agency.

Data Sources
Flood zones obtained from the FEMA (effective 3/17/2010); aerial photograph obtained from the State of Oregon (2022); tax lot data obtained from Clatsop County (2023).

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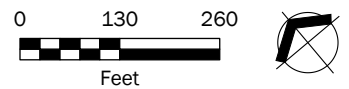
- Legend**
-  Site Boundary
 -  Tax Lot
 -  FEMA 100-Year Flood Zone

Figure 4
FEMA Flood Zones
Port of Astoria
Pier 3 Master Plan
Astoria, OR



Attachment

Advisory Group Interview Questions



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Advisory Group Interview Questions

1. What type of Boatyard user are you? (commercial, recreational, service etc.?)
2. What are the primary reasons that you use this Port/Marina?
3. For commercial vessel owners: how many trips/off-loads do you conduct per season?
4. What existing services do you like at the Boatyard? What missing services would you like to see at the Boatyard?
5. What additional buildings or infrastructure would benefit Boatyard users?
6. Would the lack of electrical hook-ups at a Boatyard force you to use an alternate boatyard?
7. If you own a vessel that the existing lift cannot handle, where do you have your vessel hauled out?
8. Would you use Pier 3 to haul out your [larger] vessel if the Port had a larger lift? If not, why?
9. What are the greatest opportunities at the boatyard? What are the greatest constraints?

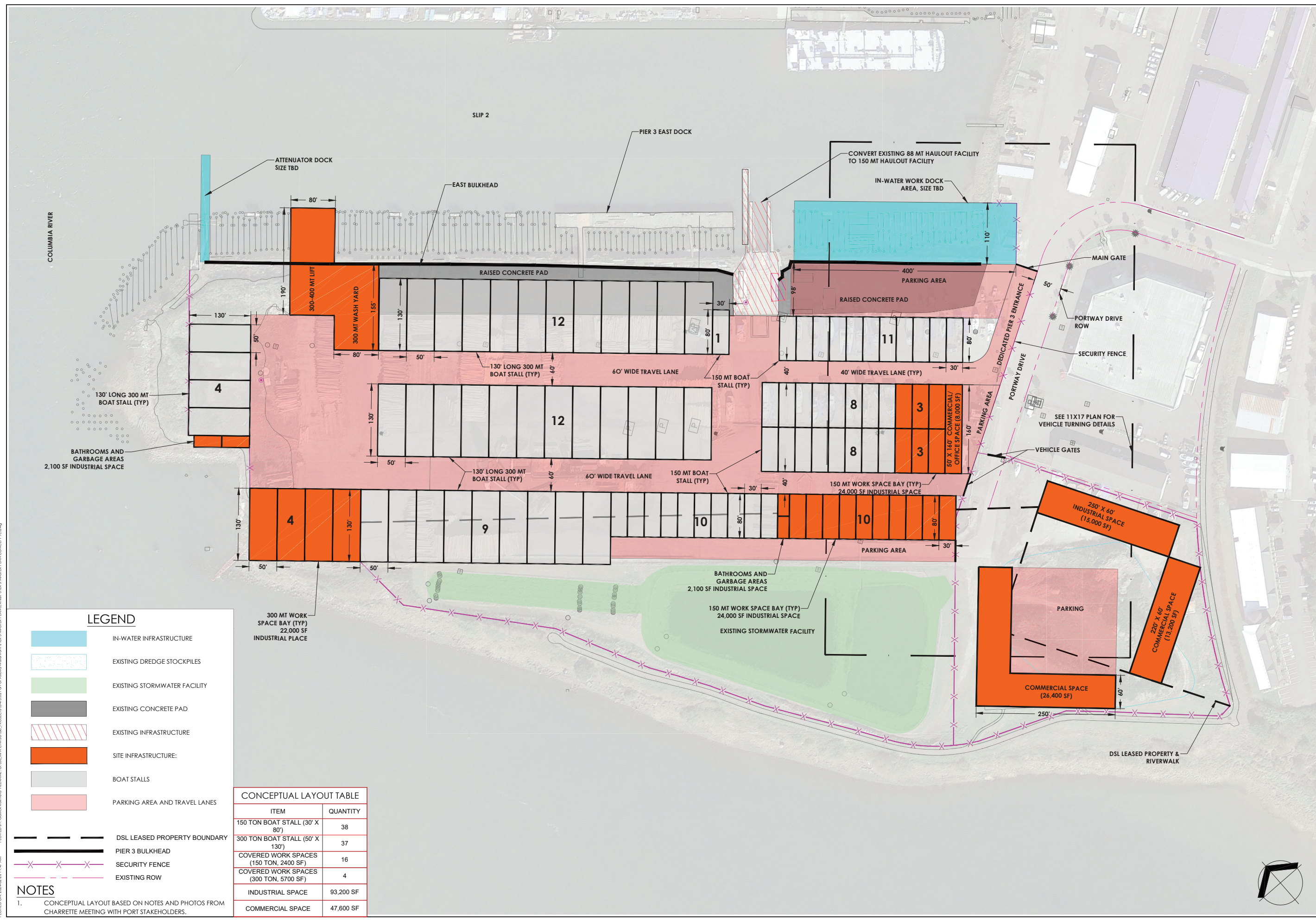
Appendix B

Alternative Concept Designs



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PORT OF ASTORIA PIER 3 MASTER PLAN
 PORT OF ASTORIA
 ASTORIA, OREGON



LEGEND

- IN-WATER INFRASTRUCTURE
- EXISTING DREDGE STOCKPILES
- EXISTING STORMWATER FACILITY
- EXISTING CONCRETE PAD
- EXISTING INFRASTRUCTURE
- SITE INFRASTRUCTURE
- BOAT STALLS
- PARKING AREA AND TRAVEL LANES

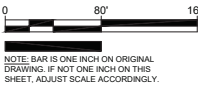
CONCEPTUAL LAYOUT TABLE	
ITEM	QUANTITY
150 TON BOAT STALL (30' X 80')	38
300 TON BOAT STALL (60' X 130')	37
COVERED WORK SPACES (150 TON, 2400 SF)	16
COVERED WORK SPACES (300 TON, 5700 SF)	4
INDUSTRIAL SPACE	93,200 SF
COMMERCIAL SPACE	47,600 SF

- DSL LEASED PROPERTY BOUNDARY
- PIER 3 BULKHEAD
- SECURITY FENCE
- EXISTING ROW

NOTES
 1. CONCEPTUAL LAYOUT BASED ON NOTES AND PHOTOS FROM CHARRETTE MEETING WITH PORT STAKEHOLDERS.

ISSUE	DATE	DESCRIPTION

PROJECT: 0475.02.19
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 CHECKED: MFA
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SHEET TITLE
 PORT OF ASTORIA PIER 3 MASTER PLAN CONCEPT 1

SHEET
 FIGURE 1

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ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST

Maul Foster Alongi, Inc.

Concept 1

Schedule A - Site Prep					
Description		Quantity	Unit	Unit Cost	Total Cost
A.1	Mobilization	5%			\$ 1,234,000
A.2	Erosion Control	1	LS	\$ 50,000	\$ 50,000
A.3	Sediment Disposal	21,366	TON	\$ 50	\$ 1,068,300
A.4	Demo of Inadeqaute Surfaces	60,000	SY	\$ 20	\$ 1,200,000
Subtotal Schedule A:					\$ 3,553,000

Schedule B - Below Ground Utilities					
Schedule B description		Quantity	Unit	Unit Cost	Total Cost
B.1	Water	600	LF	\$ 125	\$ 75,000
B.2	Storm	500	LF	\$ 100	\$ 50,000
B.3	Sanitary Sewer Grinder Pump Station	4	EA	\$ 25,000.0	\$ 100,000
B.4	Electrical	3,000	LF	\$ 30	\$ 90,000
Subtotal Schedule B:					\$ 315,000

Schedule C - Non Structural Infrastructure					
Schedule C description		Quantity	Unit	Unit Cost	Total Cost
C.1	150 MT Boat Stalls (Stripes or Paint)	8,360	LF	\$ 2	\$ 16,720
C.5	130' 300 MT Boat Stalls (Stripes or Paint)	13,320	LF	\$ 2	\$ 26,640
C.6	Security Fencing	3,900	LF	\$ 35	\$ 136,500
C.7	Access Gates	4	EA	\$ 4,000	\$ 16,000
C.8	Concrete Pads	-	SF		\$ -
C.9	New Pavement (8" thick HMA)	13,333	TON	\$ 150	\$ 2,000,000
Subtotal Schedule C:					\$ 2,196,000

Schedule D - Structural Infrastructure					
Schedule D description		Quantity	Unit	Unit Cost	Total Cost
D.1	Bulkhead Repair	1,000	LF	\$ 550	\$ 550,000
D.2	150 Ton Lift and Wash Area	1	EA	\$ 1,500,000	\$ 1,500,000
D.3	300 Ton Lift and Wash Area	1	EA	\$ 6,500,000	\$ 6,500,000
D.4	East Dock	44,000	SF	\$ 50	\$ 2,200,000
D.5	150 Ton Covered Work Area	38,400	SF	\$ 25	\$ 960,000
D.6	300 Ton Covered Work Area	26,000	SF	\$ 25	\$ 650,000
D.7	Port Office	8,000	SF	\$ 115	\$ 920,000
D.8	Industrial Buildings	19,200	SF	\$ 105	\$ 2,016,000
D.9	Commercial Buildings	39,600	SF	\$ 115	\$ 4,554,000
Subtotal Schedule D:					\$ 19,850,000
Construction Subtotal:					\$ 25,914,000

Schedule E - Design and Permitting					
Schedule E description		Quantity	Unit	Unit Cost	Total Cost
E.5	Design and Permitting	10%			\$ 2,591,400
Subtotal Schedule E:					\$ 2,592,000

Schedule F - Contingency					
Schedule F description		Quantity	Unit	Unit Cost	Total Cost
F.1	Contingency (30%)	30%		-	\$ 8,552,000
Subtotal Schedule 'F':					\$ 8,552,000

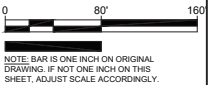
PROJECT TOTAL: \$ 37,058,000

Schedule G - Additional Items from The Port					
Schedule E description		Quantity	Unit	Unit Cost	Total Cost
E.1					\$ -
E.2					\$ -
E.3					\$ -
E.4					\$ -
E.5					\$ -
E.6					\$ -
E.7					\$ -
E.8					\$ -
E.9					\$ -
E.10					\$ -
E.11					\$ -
Subtotal Schedule E:					\$ -

PORT OF ASTORIA PIER 3 MASTER PLAN
 PORT OF ASTORIA
 ASTORIA, OREGON

ISSUE	DATE	DESCRIPTION

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 SHEET TITLE
 PORT OF ASTORIA PIER 3 MASTER PLAN CONCEPT 2
 SHEET
 FIGURE 2



LEGEND

- WORK PIER
- EXISTING DREDGE STOCKPILES
- EXISTING STORMWATER FACILITY
- EXISTING CONCRETE PAD
- EXISTING INFRASTRUCTURE
- SITE INFRASTRUCTURE:
- BOAT STALLS
- PARKING AREA AND TRAVEL LANES
- DSL LEASED PROPERTY BOUNDARY
- PIER 3 BULKHEAD
- SECURITY FENCE
- EXISTING ROW

CONCEPTUAL LAYOUT TABLE	
ITEM	QUANTITY
150 TON BOAT STALL (30' X 80')	56
300 TON BOAT STALL (50' X 130')	27
COVERED WORK SPACES (150 TON, 2400 SF)	10
COVERED WORK SPACES (300 TON, 6500 SF)	5
INDUSTRIAL SPACE	96,100 SF
COMMERCIAL SPACE	35,000 SF

NOTES
 1. CONCEPTUAL LAYOUT BASED ON NOTES AND PHOTOS FROM CHARRETTE MEETING WITH PORT STAKEHOLDERS.

PLOTTED BY: Corina Komaris FILENAME: G:\00_MFA\CIV\3D\00_PROJECT\0475.02\Port of Astoria\water\PIER 3 MASTER PLAN\PIER 3 MASTER PLAN CONCEPT 2.dwg

ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST
Maul Foster Alongi, Inc.

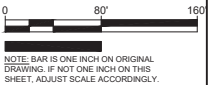
Concept 2

Schedule A - Site Prep				
Description	Quantity	Unit	Unit Cost	Total Cost
A.1 Mobilization	5%			\$ 1,316,000
A.2 Erosion Control	1	LS	\$ 50,000	\$ 50,000
A.3 Sediment Disposal	21,366	TON	\$ 50	\$ 1,068,300
A.4 Demo of Inadeqaute Surfaces	60,000	SY	\$ 20	\$ 1,200,000
Subtotal Schedule A:				\$ 3,635,000
Schedule B - Below Ground Utilities				
Schedule B description	Quantity	Unit	Unit Cost	Total Cost
B.1 Water	600	LF	\$ 125	\$ 75,000
B.2 Storm	500	LF	\$ 100	\$ 50,000
B.3 Sanitary Sewer Grinder Pump Station	4	EA	\$ 25,000	\$ 100,000
B.4 Electrical	3,000	LF	\$ 30	\$ 90,000
Subtotal Schedule B:				\$ 315,000
Schedule C - Non Structural Infrastructure				
Schedule C description	Quantity	Unit	Unit Cost	Total Cost
C.1 150 MT Boat Stalls (Stripes or Paint)	12,320	LF	\$ 2	\$ 24,640
C.2 130' 300 MT Boat Stalls (Stripes or Paint)	9,720	LF	\$ 2	\$ 19,440
C.3 Security Fencing	3,700	LF	\$ 35	\$ 129,500
C.4 Access Gates	4	EA	\$ 4,000	\$ 16,000
C.5 Concrete Pads	20,000	SF	\$ 5	\$ 100,000
C.6 New Pavement (8" thick HMA)	15,000	TON	\$ 150	\$ 2,250,000
Subtotal Schedule C:				\$ 2,540,000
Schedule D - Structural Infrastructure				
Schedule D description	Quantity	Unit	Unit Cost	Total Cost
D.1 Bulkhead Repair	1,000	LF	\$ 550	\$ 550,000
D.2 150 Ton Lift and Wash Area	1	EA	\$ 1,500,000	\$ 1,500,000
D.3 300 Ton Lift and Wash Area	1	EA	\$ 6,500,000	\$ 6,500,000
D.4 East Dock	60,000	SF	\$ 50	\$ 3,000,000
D.5 150 Ton Covered Stalls	24,000	SF	\$ 25	\$ 600,000
D.6 300 Ton Covered Stalls	32,500	SF	\$ 25	\$ 812,500
D.7 Port Office		EA		\$ -
D.8 Industrial Buildings	39,600	SF	\$ 105	\$ 4,158,000
D.9 Commercial Buildings	35,000	SF	\$ 115	\$ 4,025,000
Subtotal Schedule D:				\$ 21,146,000
Construction Subtotal:				\$ 27,636,000
Schedule E - Design and Permitting				
Schedule E description	Quantity	Unit	Unit Cost	Total Cost
E.1 Design and Permitting	10%			\$ 2,763,600
Subtotal Schedule E:				\$ 2,764,000
Schedule 'F' - Contingency				
Schedule F description	Quantity	Unit	Unit Cost	Total Cost
F.1 Contingency (30%)	30%		-	\$ 9,120,000
Subtotal Schedule 'F':				\$ 9,120,000
PROJECT TOTAL:				\$ 39,520,000
Schedule E - Additional Items from The Port				
Schedule E description	Quantity	Unit	Unit Cost	Total Cost
E.1				\$ -
E.2				\$ -
E.3				\$ -
E.4				\$ -
E.5				\$ -
E.6				\$ -
E.7				\$ -
E.8				\$ -
E.9				\$ -
E.10				\$ -
E.11				\$ -
Subtotal Schedule E:				\$ -

PORT OF ASTORIA PIER 3 MASTER PLAN
 PLAN
 PORT OF ASTORIA
 ASTORIA, OREGON

ISSUE	DATE	DESCRIPTION

PROJECT: 0475.02.19
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 SHEET TITLE
 PORT OF ASTORIA PIER 3 MASTER PLAN CONCEPT 3

SHEET
 FIGURE 3



LEGEND

- WORK PIER
- EXISTING DREDGE STOCKPILES
- EXISTING STORMWATER FACILITY
- EXISTING CONCRETE PAD
- EXISTING INFRASTRUCTURE
- SITE INFRASTRUCTURE:
- BOAT STALLS
- PARKING AREA AND TRAVEL LANES
- DSL LEASED PROPERTY BOUNDARY
- PIER 3 BULKHEAD
- SECURITY FENCE
- EXISTING ROW

CONCEPTUAL LAYOUT TABLE	
ITEM	QUANTITY
150 TON BOAT STALL (30' X 80')	43
300 TON BOAT STALL (50' X 180')	18
COVERED WORK SPACES (150 TON, 2400 SF)	7
COVERED WORK SPACES (300 TON, 9000 SF)	4
INDUSTRIAL SPACE	84,100 SF
COMMERCIAL SPACE	37,500 SF

NOTES
 1. CONCEPTUAL LAYOUT BASED ON NOTES AND PHOTOS FROM CHARRETTE MEETING WITH PORT STAKEHOLDERS.

PLOTTED BY: Gmshia Kambhria FILENAME: G:\00_MFA\CIV\3D\00_PROJECT\0465\02 Part of Astoria Waterfront Pier 3 Master Plan\PIER 3 MASTER PLAN CONCEPT 3.dwg
 DATE: 2024-01-14 12:09 PM

ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST
Maul Foster Alongi, Inc.

Concept 3

Schedule A - Site Prep				
Description	Quantity	Unit	Unit Cost	Total Cost
A.1 Mobilization	5%	LS		\$ 1,253,800
A.2 Erosion Control	1	LS	\$ 50,000	\$ 50,000
A.3 Sediment Disposal	21,366	TON	\$ 50	\$ 1,068,300
A.4 Demo of Inadeqaute Surfaces	60,000	SY	\$ 20	\$ 1,200,000
Subtotal Schedule A:				\$ 3,573,000

Schedule B - Below Ground Utilities				
Schedule B description	Quantity	Unit	Unit Cost	Total Cost
B.1 Water	600	LF	\$ 125	\$ 75,000
B.2 Storm	500	LF	\$ 100	\$ 50,000
B.3 Sanitary Sewer Grinder Pump Station	4	EA	\$ 25,000	\$ 100,000
B.4 Electrical	3,000	LF	\$ 30	\$ 90,000
Subtotal Schedule B:				\$ 315,000

Schedule C - Non Structural Infrastructure				
Schedule C description	Quantity	Unit	Unit Cost	Total Cost
C.1 150 MT Boat Stalls (Stripes or Paint)	9,460	LF	\$ 2	\$ 18,920
C.2 180' 300 MT Boat Stalls (Stripes or Paint)	9,660	LF	\$ 2	\$ 19,320
C.3 Security Fencing	3,400	LF	\$ 35	\$ 119,000
C.4 Access Gates	4	EA	\$ 4,000	\$ 16,000
C.5 Concrete Pads	-	SF		\$ -
C.6 New Pavement (8" thick HMA)	13,333	TON	\$ 150	\$ 2,000,000
Subtotal Schedule C:				\$ 2,174,000

Schedule D - Structural Infrastructure				
Schedule D description	Quantity	Unit	Unit Cost	Total Cost
D.1 Bulkhead Repair	1,000	LF	\$ 550	\$ 550,000
D.2 150 Ton Lift and Wash Area	1	EA	\$ 1,500,000	\$ 1,500,000
D.3 300 Ton Lift and Wash Area	1	EA	\$ 6,500,000	\$ 6,500,000
D.4 East Dock	50,000	SF	\$ 50	\$ 2,500,000
D.5 150 Ton Covered Stalls	16,800	SF	\$ 25	\$ 420,000
D.6 300 Ton Covered Stalls	36,000	SF	\$ 25	\$ 900,000
D.7 Port Office	1	EA	\$ 300,000	\$ 300,000
D.8 Industrial Buildings	31,300	SF	\$ 105	\$ 3,286,500
D.9 Commercial Buildings	37,500	SF	\$ 115	\$ 4,312,500
Subtotal Schedule D:				\$ 20,269,000
Construction Subtotal:				\$ 26,331,000

Schedule E - Design and Permitting				
Schedule E description	Quantity	Unit	Unit Cost	Total Cost
E.1 Design and Permitting	10%			\$ 2,633,100
Subtotal Schedule E:				\$ 2,634,000

Schedule 'F' - Contingency				
Schedule F description	Quantity	Unit	Unit Cost	Total Cost
F.1 Contingency (30%)	30%	-		\$ 8,690,000
Subtotal Schedule 'F':				\$ 8,690,000

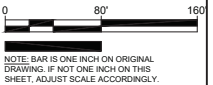
PROJECT TOTAL: \$ 37,655,000

Schedule E - Additional Items from The Port				
Schedule E description	Quantity	Unit	Unit Cost	Total Cost
E.1				\$ -
E.2				\$ -
E.3				\$ -
E.4				\$ -
E.5				\$ -
E.6				\$ -
E.7				\$ -
E.8				\$ -
E.9				\$ -
E.10				\$ -
E.11				\$ -
Subtotal Schedule E:				\$ -

PORT OF ASTORIA PIER 3 MASTER PLAN
 PLAN
 PORT OF ASTORIA
 ASTORIA, OREGON

ISSUE	DATE	DESCRIPTION

PROJECT: 0475.02.19
 DESIGNED: MFA
 DRAWN: MFA
 CHECKED: MFA
 SCALE



NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.
 SHEET TITLE
 PORT OF ASTORIA PIER 3 MASTER PLAN PA CONCEPT

SHEET
 FIGURE 1



LEGEND

- IN-WATER INFRASTRUCTURE
- EXISTING DREDGE STOCKPILES
- EXISTING STORMWATER FACILITY
- EXISTING CONCRETE PAD
- EXISTING INFRASTRUCTURE
- SITE INFRASTRUCTURE:
- BOAT STALLS
- PARKING AREA AND TRAVEL LANES
- DSL LEASED PROPERTY BOUNDARY
- PIER 3 BULKHEAD
- SECURITY FENCE
- EXISTING ROW

CONCEPTUAL LAYOUT TABLE	
ITEM	QUANTITY
70° 150 TON BOAT STALL (30' X 80')	53
70° 300 TON BOAT STALL (50' X 130')	23
300 TON BOAT STALL (60' X 130')	4
COVERED WORK SPACES (150 TON, 2400 SF)	15
COVERED WORK SPACES (300 TON, 5700 SF)	6
INDUSTRIAL SPACE	93,000 SF
COMMERCIAL SPACE	17,700 SF

NOTES
 1. CONCEPTUAL LAYOUT BASED ON NOTES AND PHOTOS FROM CHARRETTE MEETING WITH PORT STAKEHOLDERS.

PLOTTED BY: Corina Komaris FILENAME: G:\00_MFA_Civil\00_PROJECTS\0465\02 Port of Astoria\water\PIER 3 MASTER PLAN\PIER 3 MASTER PLAN CONCEPTUAL DESIGN.dwg

ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST

Maul Foster Alongi, Inc.

Preferred Alternative Concept

Schedule A - Site Prep					
Description		Quantity	Unit	Unit Cost	Total Cost
A.1	Mobilization	5%			\$ 1,076,100
A.2	Erosion Control	1	LS	\$ 50,000	\$ 50,000
A.3	Sediment Disposal	21,366	TON	\$ 50	\$ 1,068,300
A.4	Demo of Inadeqaute Surfaces	60,000	SY	\$ 20	\$ 1,200,000
Subtotal Schedule A:					\$ 3,395,000

Schedule B - Below Ground Utilities					
Schedule B description		Quantity	Unit	Unit Cost	Total Cost
B.1	Water	600	LF	\$ 125	\$ 75,000
B.2	Storm	500	LF	\$ 100	\$ 50,000
B.3	Sanitary Sewer Grinder Pump Station	4	EA	\$ 25,000	\$ 100,000
B.4	Electrical	3,000	LF	\$ 30	\$ 90,000
Subtotal Schedule B:					\$ 315,000

Schedule C - Non Structural Infrastructure					
Schedule C description		Quantity	Unit	Unit Cost	Total Cost
C.1	70° 150 MT Boat Stalls (Stripes or Paint)	11,660	LF	\$ 2	\$ 23,320
C.2	70° 300 MT Boat Stalls (Stripes or Paint)	8,395	LF	\$ 2	\$ 16,790
C.3	130' 300 MT Boat Stalls (Stripes or Paint)	1,440	LF	\$ 2	\$ 2,880
C.4	Security Fencing	4,050	LF	\$ 35	\$ 141,750
C.5	Access Gates	4	EA	\$ 4,000	\$ 16,000
C.6	Concrete Pads	-	SF		\$ -
C.7	New Pavement (8" thick HMA)	13,333	TON	\$ 150	\$ 2,000,000
Subtotal Schedule C:					\$ 2,201,000

Schedule D - Structural Infrastructure					
Schedule D description		Quantity	Unit	Unit Cost	Total Cost
D.1	Bulkhead Repair	1,000	LF	\$ 550	\$ 550,000
D.2	150 Ton Lift and Wash Area	1	EA	\$ 1,500,000	\$ 1,500,000
D.3	400 Ton Lift and Wash Area	1	EA	\$ 6,500,000	\$ 6,500,000
D.4	East Dock	44,000	SF	\$ 50	\$ 2,200,000
D.5	150 Ton Covered Work Area	34,350	SF	\$ 25	\$ 858,750
D.6	300 Ton Covered Work Area	39,000	SF	\$ 25	\$ 975,000
D.7	Port Office	4,500	SF	\$ 115	\$ 517,500
D.8	Industrial Buildings	19,700	SF	\$ 105	\$ 2,068,500
D.9	Commercial Buildings	13,200	SF	\$ 115	\$ 1,518,000
Subtotal Schedule D:					\$ 16,688,000
Construction Subtotal:					\$ 22,599,000

Schedule E - Design and Permitting					
Schedule E description		Quantity	Unit	Unit Cost	Total Cost
E.5	Design and Permitting	10%			\$ 2,259,900
Subtotal Schedule E:					\$ 2,260,000

Schedule F - Contingency					
Schedule F description		Quantity	Unit	Unit Cost	Total Cost
F.1	Contingency (30%)	30%		-	\$ 7,458,000
Subtotal Schedule 'F':					\$ 7,458,000

Project Total	\$ 32,317,000
----------------------	----------------------

Appendix C

Refined Concept Renderings



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PORT OF ASTORIA: PIER 3

CONCEPTUAL BOAT YARD SITE PLAN



BUILDING A

TYPE: INDUSTRIAL
 SIZE: 40,300 SF
 RESTROOMS/GARBAGE: 2,600 SF
 BOAT STALLS: 5 COVERED BOAT STALLS
 (130' LONG 400 MT STALLS)

BUILDING B

TYPE: INDUSTRIAL
 SIZE: 19,300 SF
 RESTROOMS/GARBAGE: 2,100 SF
 BOAT STALLS: 5 COVERED BOAT STALLS
 (80' LONG 150 MT STALLS)

BUILDING C

TYPE: MIXED-USE
 SIZE: 15,600 SF
 INDUSTRIAL: 10,600 SF
 OFFICE: 4,000 SF
 RESTROOMS/GARBAGE: 1,000 SF
 BOAT STALLS: 2 COVERED BOAT STALLS
 PARKING: 13 PARKING SPACES

BUILDING D

TYPE: MIXED-USE
 SIZE: 33,100 SF (1-STORY)
 INDUSTRIAL: 28,300 SF
 OFFICE: 4,800 SF
 PARKING: 23 PARKING SPACES

BUILDING E

TYPE: MIXED-USE
 SIZE: 44,600 SF (2-STORY)
 1ST FLOOR - INDUSTRIAL: 18,300 SF
 1ST FLOOR - OFFICE : 4,000 SF
 2ND FLOOR - OFFICE : 22,300 SF
 PARKING: 52 PARKING SPACES

BOAT STALLS & PARKING


BOAT STALL SIZE: 80' LONG 150 MT STALLS
 QUANTITY: 76 (69 OPEN, 7 COVERED)
 BOAT STALL SIZE: 130' LONG 400 MT STALLS
 QUANTITY: 23 (18 OPEN, 5 COVERED)
 PARKING: 55 PARKING SPACES (SOUTH LOT)
 51 PARKING SPACES (NORTH LOT)

Appendix D

Refined Concept Cost Estimates



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Title: Refined Concept - Anticipated Cost		 MAUL FOSTER ALONG I 2140 NE Broadway Portland, OR 97232 360.694.2691 (p) www.maulfooster.com	
Project:	Port of Astoria Pier 3 Master Plan		
Client:	Port of Astoria		
Project #/Task:	M0475.02.19		Initial
Prepared By:	G. Kalmeta		GK
Checked By:	S. Frost		SF
Date:	5/15/2024		
Revision #.:	4		

Cost Estimate Summary - Feasibility Level

Schedule 'A' - Site Preparation	\$	5,483,367
Schedule 'B' - Below Ground Utilities	\$	315,000
Schedule 'C' - Non Structural Infrastructure	\$	3,030,543
Schedule 'D' - Structural Infrastructure	\$	47,137,500
Schedule 'E' - Design and Project Management	\$	5,596,641
Schedule 'F' - Contingency	\$	18,468,915
Total:	\$	80,031,967

Assumptions:

1. This opinion of probable costs is based on a conceptual facility design and is intended for planning purposes only.
2. This cost estimate assumes that the existing gravel surfacing will be adequate for reuse as a base for new asphalt pavement.
3. The cost estimate assumes that the stockpiled dredge spoils has no market value.
4. This cost estimate assumes all new pavement surfacing for the entire site.
5. This cost estimate uses new pavement in place of concrete foundations for proposed structures.
6. The costs represented in the estimate are for fully installed improvements.
7. Costs are based on prevailing wages.
8. Contingency costs include permitting fees, system development charges, inflation, regionality, and construction materials variance.
9. Miscellaneous Bulkhead costs include construction and removal of temporary retaining wall, furnishing and installation of steel anchor piles, furnishing and installation of pile system, and installation of bull rail and cap beam.
10. The costs associated with the bulkhead repair obtained from the Rehab Bulk Repair Project for Pier 2. That project did not include quantity estimates, so total costs were broken down to a per liner foot cost and multiplied by the projected length of the pier 3 bulkhead repair.

ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST

Maul Foster Alongi, Inc.

Schedule A - Site Prep				
Description	Quantity	Unit	Unit Cost	Total Cost
A.1 Mobilization	5%			\$ 2,665,067
A.2 Erosion Control	1	LS	\$ 50,000	\$ 50,000
A.3 Sediment Disposal	21,366	TON	\$ 50	\$ 1,068,300
A.4 Demo of Inadequate Surfaces	85,000	SY	\$ 20	\$ 1,700,000
Subtotal Schedule A:				\$ 5,483,367

Schedule B - Below Ground Utilities				
Schedule B description	Quantity	Unit	Unit Cost	Total Cost
B.1 Potable Water Main	600	LF	\$ 125	\$ 75,000
B.2 Storm Drainage Collection and Conveyance	500	LF	\$ 100	\$ 50,000
B.3 Sanitary Sewer Grinder Pump Station	4	EA	\$ 25,000	\$ 100,000
B.4 Electrical	3,000	LF	\$ 30	\$ 90,000
Subtotal Schedule B:				\$ 315,000

Schedule C - Non Structural Infrastructure				
Schedule C description	Quantity	Unit	Unit Cost	Total Cost
C.1 80' Length Angled Boat Stalls (Stripes or Paint)	15,180	LF	\$ 2	\$ 30,360
C.2 130' Length Angled Boat Stalls (Stripes or Paint)	5,110	LF	\$ 2	\$ 10,220
C.3 130' Length Boat Stalls (Stripes or Paint)	1,440	LF	\$ 2	\$ 2,880
C.4 Security Fencing	4,050	LF	\$ 35	\$ 141,750
C.5 Access Gates	3	EA	\$ 4,000	\$ 12,000
C.6 New Pavement (8" thick HMA)	18,889	TON	\$ 150	\$ 2,833,333
Subtotal Schedule C:				\$ 3,030,543

Schedule D - Structural Infrastructure				
Schedule D description	Quantity	Unit	Unit Cost	Total Cost
D.1 Furnish and Install Bulkhead Wall	1,000	LF	\$ 5,200	\$ 5,200,000
D.2 Structural Backfill for Bulkhead Wall	1,000	LF	\$ 2,900	\$ 2,900,000
D.3 Miscellaneous Bulkhead Costs	1,000	LF	\$ 3,000	\$ 3,000,000
D.4 150 MT Lift and Wash Area Pile System	1	EA	\$ 1,300,000	\$ 1,300,000
D.5 150 MT Lift Dredging	1	EA	\$ 70,000	\$ 70,000
D.6 150 MT Lift and Wash Area Bracing and Slab	1	EA	\$ 450,000	\$ 450,000
D.7 150 MT Lift and Wash Area Accessories	1	EA	\$ 100,000	\$ 100,000
D.8 150 MT Lift	1	EA	\$ 1,500,000	\$ 1,500,000
D.9 400 MT Lift and Wash Area Pile System	1	EA	\$ 1,700,000	\$ 1,700,000
D.10 400 MT Lift Dredging and Timber Pile Removal	1	EA	\$ 100,000	\$ 100,000
D.11 400 MT Lift and Wash Area Bracing and Slab	1	EA	\$ 900,000	\$ 900,000
D.12 400 MT Lift and Wash Area Accessories	1	EA	\$ 150,000	\$ 150,000
D.13 400 MT Lift	1	EA	\$ 5,500,000	\$ 5,500,000
D.14 East Dock	44,000	SF	\$ 162	\$ 7,128,000
D.15 Attenuator	3,000	SF	\$ 150	\$ 450,000
D.16 150 MT Enclosed Work Structure (BLDG B)	19,300	SF	\$ 100	\$ 1,930,000
D.17 400 MT Enclosed Work Structure (BLDG A)	40,300	SF	\$ 100	\$ 4,030,000
D.18 Port Office (BLDG C)	15,600	SF	\$ 115	\$ 1,794,000
D.19 Mixed Use Building (BLDG D)	33,100	SF	\$ 115	\$ 3,806,500
D.20 Mixed Use Building (BLDG E)	44,600	SF	\$ 115	\$ 5,129,000
Subtotal Schedule D:				\$ 47,137,500
Construction Subtotal:				\$ 55,966,411

Schedule E - Design and Permitting				
Schedule E description	Quantity	Unit	Unit Cost	Total Cost
E.5 Design and Permitting	10%			\$ 5,596,641
Subtotal Schedule E:				\$ 5,596,641

Schedule F - Contingency				
Schedule F description	Quantity	Unit	Unit Cost	Total Cost
F.1 Contingency (30%)	30%		-	\$ 18,468,915
Subtotal Schedule 'F':				\$ 18,468,915

PROJECT TOTAL: \$ 80,031,967

Appendix E

Funding Matrix



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Category	Federal/State	Funding Agency	Grant	Website	Match Required	Maximum Award	Timing	Contact	Uses
Grants									
Infrastructure	Federal	US Department of Transportation	Port Infrastructure Development Program	https://www.grantsolutions.gov/gs/pr_eaward/previewPublicAnnouncement.do?id=109944	20% required match	No maximum award size	5/10/2024	Wade Morefield PIDPgrants@dot.gov 202-366-6025	Funding for operational improvements and infrastructure that supports seafood and seafood-related businesses.
Infrastructure	Federal	US Department of Transportation Maritime Marine Administration	Small Shipyard Grants	https://www.maritime.dot.gov/grants-finances/small-shipyard-grants	At least 25% of grant project costs	Average is \$1 million, \$8,750,000 is currently in the fund	8/5/2024	David M. Heller smallshipyardgrants@dot.gov	Provides funding for: <ul style="list-style-type: none"> • Qualified shipyard facilities that will be effective in fostering efficient, competitive operations, and quality ship construction, repair, and reconfiguration. • Training of workers in shipbuilding, ship repair, and associated industries • Boatyard elements such as travel lifts, fire suppression systems, floating docks, wash equipment.
Infrastructure	Federal	US Department of Transportation	Rebuilding American Infrastructure with Sustainability and Equity Grant Program	https://www.grants.gov/search-results-detail/351205	20% required match	\$25 million	FY 2025 Deadline: 01/13/2025	Andrea Jacobson RAISE Program Manager andrea.jacobson@dot.gov	Funding to support the planning, engineering, and construction of Port infrastructure.
Planning and Marketing	State	Business Oregon	Port Planning and Marketing Fund	https://www.oregon.gov/biz/programs/PPMF/Documents/2022%20PPMF%20Guide%20Final.pdf	None required	\$50,000	Rolling	Melanie Olson 503-801-7155 melanie.olson@biz.oregon.gov	Funds the planning or marketing project necessary for improving the port's ability to carry out its authorized functions or activities related to trade and commerce. The fund also supports updates to Port Strategic Plans.
Planning and Engineering	Federal	Economic Development Agency	Planning and Local Technical Assistance Program	https://grants.gov/search-results-detail/332127	EDA Investment Rate for Planning Awards The Federal share of a Planning award generally may not exceed 50% of the total cost of the project.	\$300,000	Applications are accepted on a continuing basis and processed as received. This Planning and Local Technical Assistance opportunity will remain in effect until superseded by a future announcement.	J. Wesley Cochran jcochran@eda.gov (206) 561-6646	Funds planning and engineering of infrastructure improvements.
Planning, Engineering, and Construction	Federal	Economic Development Agency	Public Works and Economic Adjustment Assistance Programs	https://grants.gov/search-results-detail/346815	50% required match	\$100,000 up to \$300 million	Applications are accepted on a continuing basis and processed as received. This Adjustment Assistance Program opportunity will remain in effect until superseded by a future announcement.	J. Wesley Cochran jcochran@eda.gov (206) 561-6647	Funds the planning and engineering of infrastructure improvements, site acquisition, site preparation, and construction.
Financing									
Infrastructure	State	Business Oregon	Special Public Works Fund	https://www.oregon.gov/biz/Publications/SPWF.pdf	Low-cost financing	\$10 million	Rolling	503-986-0123 business.oregon@oregon.gov	Provides funds for capital improvement (acquisition, preliminary and final design, & engineering) or planning projects (technical and financial feasibility studies) that assist in developing industrial lands, supporting an immediate job creation/retention/expansion opportunity, or replacement of essential community facilities.

Appendix F

Implementation Worksheets




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Phasing Assumptions
Short-term: 1-2 years Medium-term: 2-5 years Long-term: 5+ years
Cost Assumptions
See Cost Assumptions sheet

Note: Estimated Costs include design and permitting costs.

Name	Description	Estimated Cost	Timing
Utility Upgrades	Upgrades to site utilities are necessary to accommodate proposed improvements in the Boatyard Master Plan. Necessary upgrades include installation of 600 LF of 12" Ductile Iron Pipe for water conveyance, 500 LF of 12" Schedule A Storm Pipe, and 3,000 LF of Electrical Conduit. Utility upgrades will be completed in conjunction with site preparation and development build-out.	\$346,500	Short-term
Site Preparation	Preparation for site development includes mobilization, erosion control, sediment disposal, and demolition of inadequate surfaces. Site preparation will be completed in conjunction with utility upgrades and development build-out.	\$6,031,924	Short-term
Access Improvements	Site access is provided along Gateway Drive. Proposed improvements to access include four new vehicle gates and security fencing.	\$169,125	Short-term
Pavement	Existing pavement at the Boatyard is damaged due to years of use as a timber lay down area. Development of new boat stalls and other Boatyard improvements, including parking areas, will require 18,889 tons of new pavement across the site.	\$3,116,667	Short-term
Boat Stalls	The Boatyard will include a variety of striped or painted open-aired boat stalls including angled 150 MT (80' long) Boat Stalls, angled 400 (130' long) MT Boat Stalls, and no-angle 400 (130' long) MT Boat Stalls.	\$47,806	Short-term
Small Lift	A 150-Metric Ton (MT) Boat Lift (Small Lift) will replace the existing 80-MT Lift. Construction of the new lift will require dredging and installation of a bracing slab, a pile system, and the lift with accessories. The upgraded lift capacity will allow for safer lift of larger vessels and expanded boatyard services.	\$3,762,000	Short-term
Large Lift	The northern portion of the Boatyard will be dedicated to ships hoisted by the 400-MT Boat Lift (Large Lift). Construction of the new lift will require dredging and installation of a bracing slab, a pile system, and the lift with accessories. The upgraded lift capacity will allow for larger vessels and expanded potential boatyard services.	\$9,185,000	Long-term
Bulkhead Repair	The Pier 3 bulkhead extends along the pier's entire eastern side and a section of its northern side. Large sections of the bulkhead located north of the east dock have collapsed, whereas the bulkhead section located south of the east dock remains intact. The bulkhead requires repair and will continue to erode until repairs are made.	\$12,210,000	Short-term
Enclosed Work Structures	Enclosed work structures will expand available services at the Boatyard and attract more users. There are two enclosed work structures proposed for the Boatyard. One structure will include five covered working spaces totaling 19,300 SF dedicated to small boats and the other structure will provide five covered working spaces totaling 40,300 SF dedicated to large boats.	\$6,556,000	Medium-term
East Dock Repair and Attenuator	The Pier 3 east dock is located just north of the existing haulout facility and runs in-water along the east side of the pier. The existing dock is small and in poor condition. A 400' x 110' dock will be constructed in the location of the existing dock for in water work.	\$8,335,800	Medium-term
Commercial and Office Entrance Area	15,600 SF of commercial/office space with a parking area fronting Gateway Drive will provide an office location for the Port and other vendors. The building will be branded with the Port logo and act as an entrance to the site.	\$1,973,400	Short-term
Mixed Use Buildings	Two buildings containing industrial and commercial space will be constructed on the southwest corner of the Boatyard. The mixed use building will expand available services at the Boatyard and attract more users.	\$9,829,050	Medium-term
Marketing	Actively marketing available commercial, office, and industrial space to attract vendors to the Boatyard. The expansion of services and capabilities offered at the Boatyard will attract new users.	\$50,000	Short-term

Title:	Refined Concept - Anticipated Cost		 MAUL FOSTER ALONG I 2140 NE Broadway Portland, OR 97232 360.694.2691 (p) www.maulfoster.com
Project:	Port of Astoria Pier 3 Master Plan		
Client:	Port of Astoria		
Project #/Task:	M0475.02.19	Initial	
Prepared By:	G. Kalmeta	GK	
Checked By:	S. Frost	SF	
Date:	5/15/2024		
Revision #.:	4		

Cost Estimate Summary - Feasibility Level
--

Schedule 'A' - Site Preparation	\$	5,483,367
Schedule 'B' - Below Ground Utilities	\$	315,000
Schedule 'C' - Non Structural Infrastructure	\$	3,030,543
Schedule 'D' - Structural Infrastructure	\$	47,137,500
Schedule 'E' - Design and Project Management	\$	5,596,641
Schedule 'F' - Contingency	\$	18,468,915
Total:	\$	80,031,967

Assumptions:

1. This opinion of probable costs is based on a conceptual facility design and is intended for planning purposes only.
2. This cost estimate assumes that the existing gravel surfacing will be adequate for reuse as a base for new asphalt pavement.
3. The cost estimate assumes that the stockpiled dredge spoils has no market value.
4. This cost estimate assumes all new pavement surfacing for the entire site.
5. This cost estimate uses new pavement in place of concrete foundations for proposed structures.
6. The costs represented in the estimate are for fully installed improvements.
7. Costs are based on prevailing wages.
8. Contingency costs include permitting fees, system development charges, inflation, regionality, and construction materials variance.
9. Miscellaneous Bulkhead costs include construction and removal of temporary retaining wall, furnishing and installation of steel anchor piles, furnishing and installation of pile system, and installation of bull rail and cap beam.
10. The costs associated with the bulkhead repair obtained from the Rehab Bulk Repair Project for Pier 2. That project did not include quantity estimates, so total costs were broken down to a per liner foot cost and multiplied by the projected length of the pier 3 bulkhead repair.

ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST

Maul Foster Alongi, Inc.

Schedule A - Site Prep					
Description		Quantity	Unit	Unit Cost	Total Cost
A.1	Mobilization	5%			\$ 2,665,067
A.2	Erosion Control	1	LS	\$ 50,000	\$ 50,000
A.3	Sediment Disposal	21,366	TON	\$ 50	\$ 1,068,300
A.4	Demo of Inadequate Surfaces	85,000	SY	\$ 20	\$ 1,700,000
Subtotal Schedule A:					\$ 5,483,367

Schedule B - Below Ground Utilities					
Schedule B description		Quantity	Unit	Unit Cost	Total Cost
B.1	Potable Water Main	600	LF	\$ 125	\$ 75,000
B.2	Storm Drainage Collection and Conveyance	500	LF	\$ 100	\$ 50,000
B.3	Sanitary Sewer Grinder Pump Station	4	EA	\$ 25,000	\$ 100,000
B.4	Electrical	3,000	LF	\$ 30	\$ 90,000
Subtotal Schedule B:					\$ 315,000

Schedule C - Non Structural Infrastructure					
Schedule C description		Quantity	Unit	Unit Cost	Total Cost
C.1	80' Length Angled Boat Stalls (Stripes or Paint)	15,180	LF	\$ 2	\$ 30,360
C.2	130' Length Angled Boat Stalls (Stripes or Paint)	5,110	LF	\$ 2	\$ 10,220
C.3	130' Length Boat Stalls (Stripes or Paint)	1,440	LF	\$ 2	\$ 2,880
C.4	Security Fencing	4,050	LF	\$ 35	\$ 141,750
C.5	Access Gates	3	EA	\$ 4,000	\$ 12,000
C.6	New Pavement (8" thick HMA)	18,889	TON	\$ 150	\$ 2,833,333
Subtotal Schedule C:					\$ 3,030,543

Schedule D - Structural Infrastructure					
Schedule D description		Quantity	Unit	Unit Cost	Total Cost
D.1	Furnish and Install Bulkhead Wall	1,000	LF	\$ 5,200	\$ 5,200,000
D.2	Structural Backfill for Bulkhead Wall	1,000	LF	\$ 2,900	\$ 2,900,000
D.3	Miscellaneous Bulkhead Costs	1,000	LF	\$ 3,000	\$ 3,000,000
D.4	150 MT Lift and Wash Area Pile System	1	EA	\$ 1,300,000	\$ 1,300,000
D.5	150 MT Lift Dredging	1	EA	\$ 70,000	\$ 70,000
D.6	150 MT Lift and Wash Area Bracing and Slab	1	EA	\$ 450,000	\$ 450,000
D.7	150 MT Lift and Wash Area Accessories	1	EA	\$ 100,000	\$ 100,000
D.8	150 MT Lift	1	EA	\$ 1,500,000	\$ 1,500,000
D.9	400 MT Lift and Wash Area Pile System	1	EA	\$ 1,700,000	\$ 1,700,000
D.10	400 MT Lift Dredging and Timber Pile Removal	1	EA	\$ 100,000	\$ 100,000
D.11	400 MT Lift and Wash Area Bracing and Slab	1	EA	\$ 900,000	\$ 900,000
D.12	400 MT Lift and Wash Area Accessories	1	EA	\$ 150,000	\$ 150,000
D.13	400 MT Lift	1	EA	\$ 5,500,000	\$ 5,500,000
D.14	East Dock	44,000	SF	\$ 162	\$ 7,128,000
D.15	Attenuator	3,000	SF	\$ 150	\$ 450,000
D.16	150 MT Enclosed Work Structure (BLDG B)	19,300	SF	\$ 100	\$ 1,930,000
D.17	400 MT Enclosed Work Structure (BLDG A)	40,300	SF	\$ 100	\$ 4,030,000
D.18	Port Office (BLDG C)	15,600	SF	\$ 115	\$ 1,794,000
D.19	Mixed Use Building (BLDG D)	33,100	SF	\$ 115	\$ 3,806,500
D.20	Mixed Use Building (BLDG E)	44,600	SF	\$ 115	\$ 5,129,000
Subtotal Schedule D:					\$ 47,137,500
Construction Subtotal:					\$ 55,966,411

Schedule E - Design and Permitting					
Schedule E description		Quantity	Unit	Unit Cost	Total Cost
E.5	Design and Permitting	10%			\$ 5,596,641
Subtotal Schedule E:					\$ 5,596,641

Schedule F - Contingency					
Schedule F description		Quantity	Unit	Unit Cost	Total Cost
F.1	Contingency (30%)	30%		-	\$ 18,468,915
Subtotal Schedule 'F':					\$ 18,468,915

PROJECT TOTAL: \$ 80,031,967

Utility Upgrades

Work Description

Upgrades to site utilities are necessary to accommodate proposed improvements in the Boatyard Master Plan. Necessary upgrades include installation of 600 LF of 12" ductile iron pipe for water conveyance, 500 LF of 12" Schedule A storm pipe, and 3,000 LF of electrical conduit. Utility upgrades will be completed in conjunction with site preparation and development build-out.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses the targeted phase of development.
- Select contractor; if public funding utilized, selection will occur through a competitive bid process.
- Communicate work timeline to existing Boatyard users.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Potable Water Main	Installation of 600 LF of 12" ductile iron pipe	\$75,000
Storm Drainage Collection and Conveyance	Installation of 500 LF of 12" Schedule A storm pipe	\$50,000
Sanitary Sewer Grinder Pump Station	Construction of pump station	\$100,000
Electrical Infrastructure	Installation of 3,000 LF of electrical conduit	\$90,000
Subtotal		\$315,000
Design and Permitting	10% of total work	\$31,500
Total		\$346,500

Funding Opportunities

- USDOT Port Infrastructure Development Program
- Business Oregon Special Public Works Fund
- EDA Planning and Local Technical Assistance Program
- EDA Public Works and Economic Adjustment Assistance Programs

Notes

The existing water line will be extended to serve the proposed mixed use buildings on the southwest corner of the site and the covered working areas on the west side of the site. Similarly, electrical conduit will need to extend from the existing lines in the center of the site to serve the mixed use buildings and covered vessel work buildings. A new stormwater pipe will be installed to serve the mixed use buildings and parking areas on the southwest corner of the site. A new sanitary sewer pump station and piping with connection to the sanitary sewer line on Gateway Avenue will serve new restroom areas across the site.

Phasing

Short-term (1-2 years)

Site Preparation

Work Description

Preparation for site development includes:

- Mobilization of workforce and equipment.
- Characterization and disposal of soil from dredge spoil piles.
- Demolition of inadequate surfaces in the area of previous lumber storage.
- Erosion control for sediment disposal and demolition activities.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses the targeted phase of development.
- Construction, preferably to occur during summer months (May-September).
- Select contractor through a competitive bid process.
- Communicate work timeline to existing Boatyard users.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Mobilization	Assumed 5% of total construction costs	\$2,665,267
Erosion Control	Estimate assumes both upland and in-water erosion controls.	\$50,000
Sediment Disposal	Removal of roughly 21,366 tons of soil from existing dredge spoil piles.	\$1,068,300
Demolition of Inadequate Surfaces	Removal of 85,000 SY of material	\$1,700,000
Subtotal		\$5,483,567
Design and Permitting	10% of total work	\$548,357
Total		\$6,031,924

Funding Opportunities

- Business Oregon Special Public Works Fund
- USDOT Port Infrastructure Development Program
- EDA Public Works and Economic Adjustment Assistance Programs
- EDA Planning and Local Technical Assistance Program

Notes

Dredge spoil pile removal will require characterization for environmental contaminants prior to disposal. Consultation with local DEQ representative is recommended. Site preparation will be completed in conjunction with utility upgrades and development build-out.

Phasing

Short-term (1-2 years)

Access Improvements

Work Description

Site access is provided along Gateway Avenue. Proposed improvements to access include three new vehicle gates and security fencing.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses all transportation planning and engineering considerations.
- Select contractor through a competitive bid process.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Security Fencing	Installation of 4,050 LF of security fencing.	\$141,750
Access Gates	Installation of three 20' double wide gates.	\$12,000
Subtotal		\$153,750
Design and Permitting	10% of total work	\$15,375
Total		\$169,125

Funding Opportunities

- Business Oregon Special Public Works Fund
- USDOT Port Infrastructure Development Program
- EDA Public Works and Economic Adjustment Assistance Programs
- EDA Planning and Local Technical Assistance Program

Notes

Drive access and security fencing should be designed in coordination with DSL and Englund Marine. Consider location of semi truck idling area adjacent to the westernmost Englund Marine Building during first phase of design.

Phasing

Short-term (1-2 years)

Pavement

Work Description

Existing pavement at the Boatyard is damaged due to years of use as a timber lay down area. Development of new boat stalls and other Boatyard improvements including parking areas will require 18,889 tons of new pavement across the site.

Implementation Steps/key developments

- Determine funding source.
- Construction, preferably to occur during summer months (May-September).
- Select contractor through a competitive bid process.
- Communicate work timeline to existing users.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
New Pavement	Placement of 18,889 Tons of 8" thick HMA pavement.	\$ 2,833,333
Subtotal		\$ 2,833,333
Design and Permitting	10% of total work	\$283,333
Total		\$3,116,667

Funding Opportunities

- USDOT Port Infrastructure Development Program
- EDA Public Works and Economic Adjustment Assistance Programs
- EDA Planning and Local Technical Assistance Program

Notes

Additional funding pending ongoing lawsuit with Astoria Forest Products.

Phasing

Short-term (1-2 years)

Boat Stalls

Work Description

The Boatyard will include a variety of striped or painted open-aired boat stalls including angled 150 MT (80' long) Boat Stalls, angled 400 (130' long) MT Boat Stalls, and no-angle 400 (130' long) MT Boat Stalls.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses the targeted phase of development.
- Construction, preferably to occur during summer months (May-September).
- Select a contractor.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Angled 150 MT (80' long) Boat Stalls (Stripes or Paint)	Striping or painting of 15,180 LF of boat stalls.	\$30,360
Angled 400 MT (130' long) Boat Stalls (Stripes or Paint)	Striping or painting of 5,110 LF of boat stalls.	\$10,220
No-angle 400 MT (130' long) Boat Stalls (Stripes or Paint)	Striping or painting of 1,440 LF of boat stalls.	\$2,880
Subtotal		\$43,460
Design and Permitting	10% of total work	\$4,346
Total		\$47,806

Funding Opportunities

- USDOT Port Infrastructure Development Program
- EDA Public Works and Economic Adjustment Assistance Programs
- EDA Planning and Local Technical Assistance Program

Notes

Phasing

Short-term (1-2 years)

150- Metric Ton Lift and Wash Area

Work Description

A 150 Metric Ton (MT) Boat Lift (Small Lift) will replace the existing 80 MT Lift. Construction of the Small Lift will require dredging and installation of a bracing slab, a pile system, and the lift with accessories. The upgraded lift capacity will allow for safer lift of larger vessels and expand potential boatyard services.

Implementation Steps/key developments

- Determine funding source.
- Select Vendor

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
150 MT Lift	Procurement and installation of mobile boat hoist.	\$1,500,000
150 MT Lift and Wash Area Pile System	Installation of sheet piling for bulkhead, wingwalls, walers, and tie back, and structural supports	\$1,300,000
150 MT Lift Dredging	Dredging of the lift area.	\$70,000
150 MT Lift and Wash Area Bracing and Slab	Installation of bracing, girders, fendering system, and concrete slab.	\$450,000
150 MT Lift and Wash Area Accessories	Installation of rails, cleats, life rings, ladders, lights, controls, and other miscellaneous items.	\$100,000
Subtotal		\$3,420,000
Design and Permitting	10% of total work	\$342,000
Total		\$3,762,000

Funding Opportunities

- USDOT Port Infrastructure Development Program
- MARAD Small Shipyard Grants

Notes

Small Lift will be implemented in the location of the existing lift.

Phasing

Short-term (1-2 years)

400- Metric Ton Lift and Wash Area

Work Description

The northern portion of the Boatyard will be dedicated to ships hoisted by the 400 MT Boat Lift (Large Lift). The Large Lift will require excavation of the pier to accommodate the lift way, construction of a wash area, and structural support to operate on the northeast corner of the Boatyard.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses the targeted phase of development.
- Select contractor through a competitive bid process.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
400 MT Lift	Procurement and installation of mobile boat hoist.	\$ 5,500,000
400 MT Lift and Wash Area Pile System	Installation of sheet piling for bulkhead, wingwalls, walers, and tie back, and structural supports	\$ 1,700,000
400 MT Lift Dredging and Timber Pile Removal	Dredging of the lift area.	\$ 100,000
400 MT Lift and Wash Area Bracing and Slab	Installation of bracing, girders, fendering system, and concrete slab.	\$ 900,000
400 MT Lift and Wash Area Accessories	Installation of rails, cleats, life rings, ladders, lights, controls, and other miscellaneous items.	\$ 150,000
Subtotal		\$ 8,350,000
Design and Permitting	10% of total work	\$ 835,000
Total		\$9,185,000

Funding Opportunities

- USDOT Port Infrastructure Development Program
- MARAD Small Shipyard Grants

Notes

Installation of the large lift requires additional structural support on the northeast corner of Pier 3. As vessel sizes trend larger, the new large lift will allow the Boatyard to capture a greater portion of the market.

Phasing

Long- term (5+ years)

Bulkhead Repair

Work Description

The Pier 3 bulkhead extends along the pier's entire eastern side and a section of its northern side. Large sections of the bulkhead located north of the east dock have collapsed, whereas the bulkhead section located south of the east dock remains intact. The bulkhead requires repair and will continue to erode until repairs are made.

Implementation Steps/key developments	<ul style="list-style-type: none"> • Determine funding source. • Produce an engineering plan set that encompasses the targeted phase of development. • Initiate Section 404 and Section 10 permitting process with U.S. Army Corps of Engineers. • Select contractor through a competitive bid process.
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Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Furnish and Install Bulkhead Wall	Furnish and repair of 1,000 LF of bulkhead wall.	\$5,200,000
Structural Backfill for Bulkhead Wall	Backfill for 1,000 LF of bulkhead wall.	\$2,900,000
Miscellaneous Bulkhead Costs		\$3,000,000
Subtotal		\$11,100,000
Design and Permitting	10% of total work	\$1,110,000
Total		\$12,210,000

Funding Opportunities	<ul style="list-style-type: none"> • USDOT Port Infrastructure Development Program (PIDP) • Business Oregon Special Public Works Fund • MARAD Small Shipyard Grants • EDA Public Works and Economic Adjustment Assistance Programs • EDA Planning and Local Technical Assistance Program
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Notes	The Port is working on repairs of the Pier 2 bulkhead concurrently with Boatyard improvements. Repairs of both bulkheads should be coordinated.
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Phasing	Medium-term (2-5 years)
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Enclosed Work Structures

Work Description

Enclosed work structures will expand available services at the Boatyard and attract more users. There are two enclosed work structures proposed for the Boatyard. One structure will include five covered working spaces totaling 19,300 SF dedicated to small boats and the other structure will provide five covered working spaces totaling 40,300 SF dedicated to large boats.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses the targeted phase of development.
- Select contractor and vendors; if public funding utilized, selection will occur through a competitive bid process.
- Begin marketing outreach to potential vendors.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
150 MT Enclosed Work Structure	Construction of 19,300 SF of shop space, including interior components.	\$ 1,930,000
400 MT Enclosed Work Structure	Construction of 40,300 SF of shop space, including interior components.	\$ 4,030,000
Subtotal		\$ 5,960,000
Design and Permitting	10% of total work	\$596,000
Total		\$6,556,000

Funding Opportunities

- USDOT Port Infrastructure Development Program
- MARAD Small Shipyard Grants
- EDA Planning and Local Technical Assistance Program
- EDA Public Works and Economic Adjustment Assistance Programs

Notes

Several covered working spaces on the west side of the site are on DSL-owned land. Commercial activity that takes place on DSL-owned land will need to be negotiated with DSL. Potential outcomes of negotiations are revenue share, renegotiated leasing terms, or outright acquisition of the land.

Phasing

Medium-term (2-5 years)

East Dock Repair and Attenuator

Work Description

The Pier 3 east dock is located just north of the existing haulout facility and runs in-water along the east side of the pier. The existing dock is small and in poor condition. A 400' x 110' dock will be constructed in the location of the existing dock for in-water work. A wave attenuator dock will be installed in Slip 2, north of the 400 MT lift.

Implementation Steps/key developments	<ul style="list-style-type: none"> • Determine funding source. • Produce an engineering plan set that encompasses the targeted phase of development. • Initiate Section 404 and Section 10 permitting process with U.S. Army Corps of Engineers. • Construction, preferably to occur during summer months (May-September). • Select contractor through a competitive bid process.
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Key Developments and Estimated Costs

Description	Work Assumptions	Cost
East Dock	Installation of 44,000 SF dock	\$7,128,000
Attenuator	Installation of 3,000 SF attenuator	\$450,000
Subtotal		\$7,578,000
Design and Permitting	10% of total work	\$757,800
Total		\$8,335,800

Funding Opportunities	<ul style="list-style-type: none"> • Business Oregon Special Public Works Fund • USDOT Port Infrastructure Development Program • MARAD Small Shipyard Grants • EDA Public Works and Economic Adjustment Assistance Programs
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Demolition of existing dock structure is required. Most piles can be left in place under the existing dock. Any additional water coverage will need to be mitigated, which may be somewhat offset by the trench-in concept for the Large Lift. Replacement of the existing dock should be coordinated with demolition of the Riverwalk Inn and Chinook Building on the Central Waterfront to capture over-water credits for the National Marine Fisheries Service.

Notes

Phasing	Medium-term (2-5 years)
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Commercial and Office Entrance Area

Work Description

A 15,500 SF commercial/office space with a parking area fronting Gateway Drive will provide an office location for the Port and other vendors. The building will be branded with the Port logo and act as an entrance to the site.

Implementation Steps/key developments	<ul style="list-style-type: none"> • Determine funding source. • Produce an engineering and architectural plan set that encompasses the targeted phase of development. • Construction, preferably to occur during summer months (May-September). • Select contractor; if public funding is utilized, selection will occur through a competitive bid process. • Begin marketing outreach to potential vendors.
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Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Port Industrial and Office Building (BLDG C)	Construction of Port Industrial and Office Building.	\$ 1,794,000
Subtotal		\$ 1,794,000
Design and Permitting	10% of total work	\$179,400
Total		\$1,973,400

Funding Opportunities	<ul style="list-style-type: none"> • MARAD Small Shipyard Grants • EDA Planning and Local Technical Assistance Program • EDA Public Works and Economic Adjustment Assistance Programs
Notes	Access to the building will be provided by a parking area on Gateway Drive.
Phasing	Short-term (1-2 years)

Mixed Use Buildings

Work Description

Two buildings containing industrial and commercial space will be constructed on the southwest corner of the Boatyard. The mixed use building will expand available services at the Boatyard and attract more users.

Implementation Steps/key developments

- Determine funding source.
- Produce an engineering plan set that encompasses the targeted phase of development.
- Remove dredge spoil pile in southwest corner of Boatyard.
- Select contractor through a competitive bid process.
- Begin marketing outreach to potential vendors.

Key Developments and Estimated Costs

Description	Work Assumptions	Cost
Mixed Use Building (BLDG D)	Construction of 33,100 of open shop space, including interior components.	\$3,806,500
Mixed Use Building (BLDG E)	Construction of 44,600 of open shop space, including interior components.	\$5,129,000
Subtotal		\$8,935,500
Design and Permitting	10% of total work	\$893,550
Total		\$9,829,050

Funding Opportunities

- MARAD Small Shipyard Grants
- EDA Planning and Local Technical Assistance Program
- EDA Public Works and Economic Adjustment Assistance Programs

Notes

Removal of the dredge spoil pile is required prior to building construction. Phasing of buildout should reflect DSL land lease: the mixed use building designed outside of the DSL property boundary should be constructed first. Commercial activity that takes place on DSL-owned land will need to be negotiated with DSL. Potential outcomes of negotiations are revenue share, renegotiated leasing terms, or outright acquisition of the land.

Phasing

Medium-term (2-5 years)

Marketing

Work Description

Actively market available commercial, office, and industrial space to attract vendors to the Boatyard. The expansion of services and capabilities offered at the Boatyard will attract new users.

Implementation Steps/key developments

- Determine funding source.
- Develop marketing plan.

Key Developments and Estimated Costs

Marketing	\$50,000
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Total	\$50,000
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Funding Opportunities

Business Oregon Port Planning and Marketing Fund

Notes

The Boatyard is traditionally a "word-of-mouth" facility. Active marketing and outreach can attract new vendors and users to maximize return on investment.

Phasing

Short-term (1-2 years)