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MARINA MODERNIZATION REPORT

Westport Marina

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1. Introduction

The Port of Grays Harbor (Port) owns and operates the Westport Marina. The Westport Marina requires modernization (replacement and upgrades) to fulfill its missions and continue to provide critical infrastructure for the economy of Grays Harbor County. Moffatt & Nichol (M&N) was contracted by the Port to develop a phased marina modernization strategy and redevelopment plan for the Westport Marina docks. The work builds upon previous work to provide a "roadmap" for the near-term through long-term phased marina modernization, allowing the Port to allocate resources towards reinvestment and apply for funding assistance from State and Federal sources.

A critical component of the Westport Marina Modernization Study is the market analysis for the proposed uses of the marina. Using the Demand Analysis found in Appendix B, combined with user data trends over the past ten years, the Port conducted a market analysis of the economic development opportunities presented by modernization of the Marina moorage infrastructure. With the cost estimates provided by M&N (Section 7), measurable targets for evaluating successful redevelopment of the marina were established.

Economically, the Westport Marina Modernization is a retention and redevelopment project that is required to continue to generate the economic impacts the Marina is directly responsible for today. The Grays Harbor region plays a major role in the commercial fishing industry of Washington State and the Nation. Westport is the largest fishing port in Washington ranking number one in commercial seafood landings in the State and tenth in the nation for seafood volume, 19th for value of catch. This activity directly supports nearly 2,300 jobs and generates over $227 million in business revenue each year. Commercial fishing, recreational fishing, seafood processing, yacht building and tourism are the major economic drivers of the community. All of these key industries are directly impacted by the condition of the marina moorage infrastructure.

The Port team worked with M&N to define goals and targets for the marina modernization, develop and evaluate conceptual approaches and layouts for a phased marina, define the final phased modernization strategy and associated planning level costs. The following report summarizes development of the Port approved phased marina modernization plan. The plan considers three general marina areas - South Marina, Mid Marina, and North Marina - that function both independently and conjointly to modernize the marina in strategic 1-5 year, 5-12 year, and 12+ year projects.

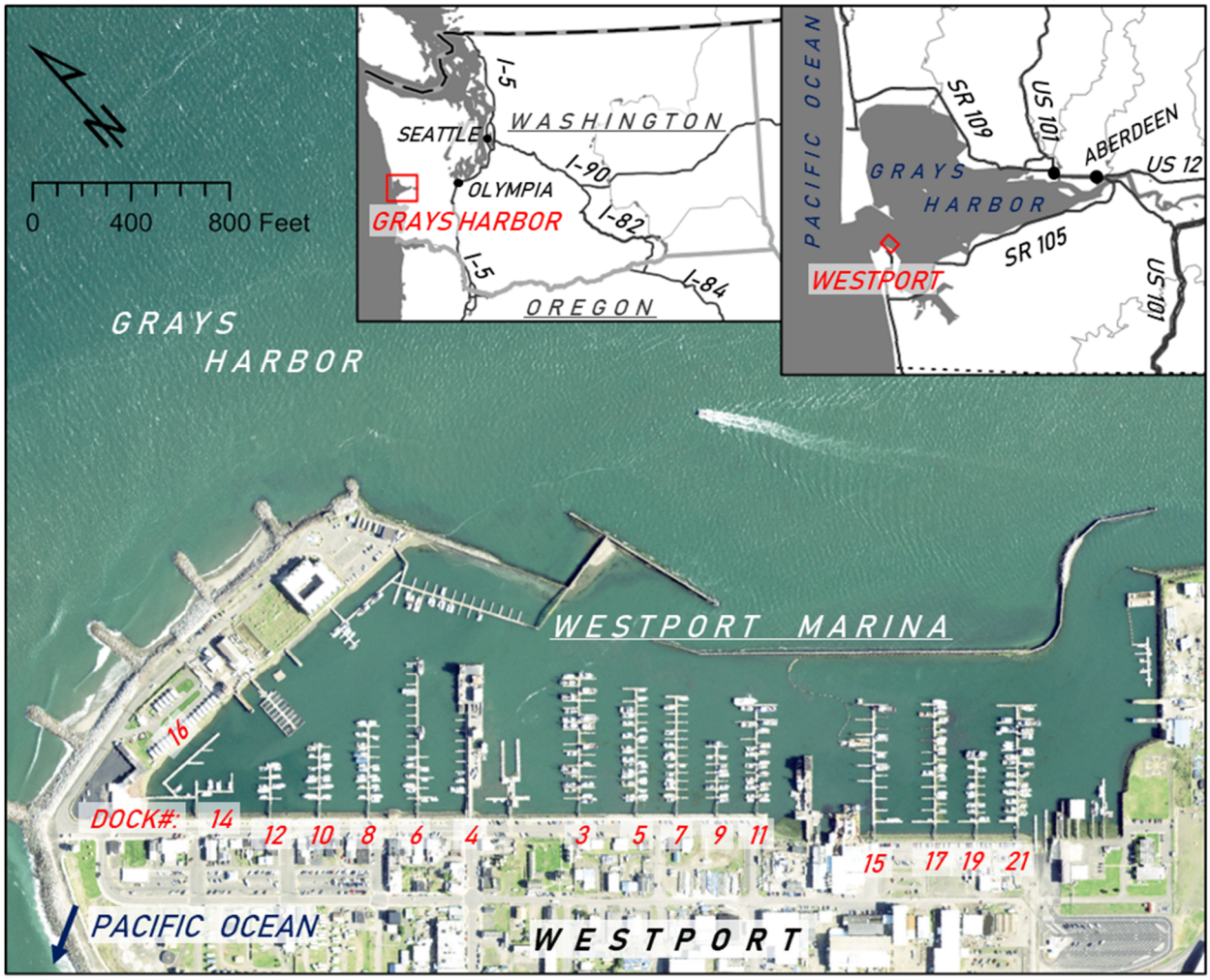


FIGURE 1: MARINA LOCATION AND SITE MAP

2. Background

2.1. Site Overview

The Port of Grays Harbor owns and operates the Westport Marina, located at 400 E Dock St, Westport, WA 98595. The marina maintains moorage for over 520 vessels ranging from less than 30 ft to 100+ ft in length and holds 368 Annual Moorage Agreements. The marina is protected from environmental conditions by a series of breakwaters to the east and a peninsula to the north.

To assist in evaluation of the existing docks and determination of phased redevelopment alternatives, this modernization strategy groups the existing marina into three general areas of docks (basins), only inclusive of the areas subject to this modernization strategy and redevelopment plan. As shown in Figure 2, this modernization strategy will focus on the three areas herein referred to as South Marina (Floats 15, 17, 19, 21), Mid Marina (Floats 3, 5, 7, 9, 11) and North Marina (Floats 4, 6, 8, 10, 12, 14, 16). Float 20, the fish pens, the fuel pier, the boat launch, and fixed piers are excluded from this modernization strategy – these elements are further described in Section 2.2 below.

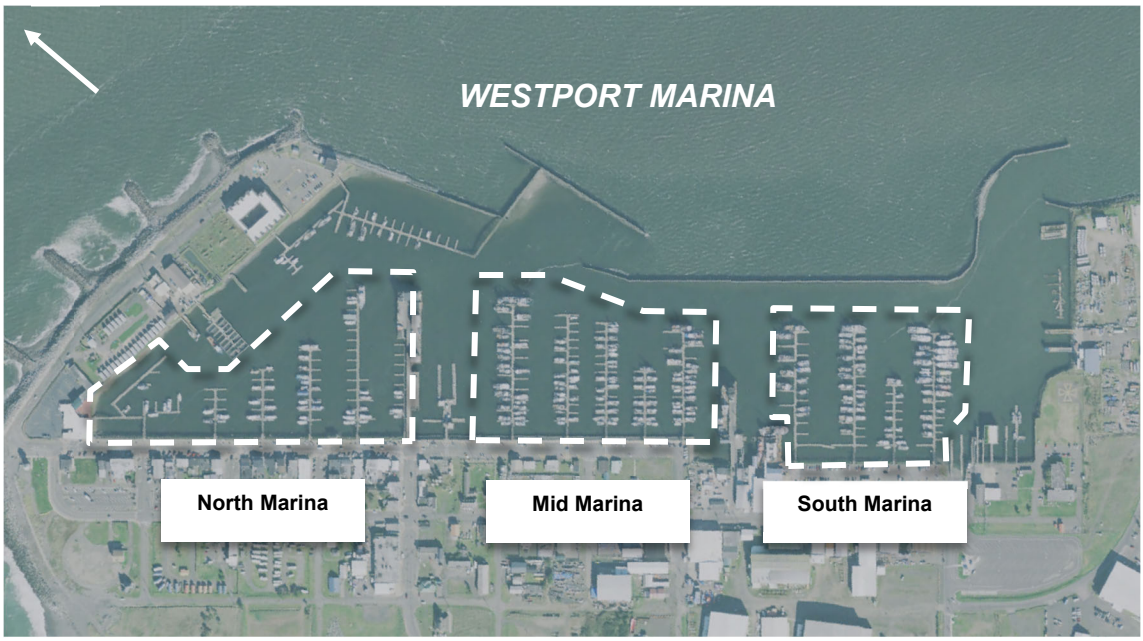


FIGURE 2: MARINA REDEVELOPMENT SITE MAP

2.2. Existing Conditions

Westport Marina serves a variety of user groups including commercial fishing (both resident and transient), tribal fishing, recreational boaters (both resident and transient), and private charter. Westport Marina floating docks and fixed piers are zoned by the City of Westport as Marine Industrial (MI), as are several of the industrial upland uses at the south-eastern portion of the marina. The US Coast Guard launch facility located east of the marina and described in Section 2.2.1. is zoned as Government (GOV) use. The upland amenities at the marina are zoned as Mixed-Use Tourist Commercial 1 (MUTC1) and north of Float 20 zoned as Mixed-Use Tourist Commercial 2 (MUTC2). Existing upland amenities include several restaurants, retail stores and gift shops, private charter offices, private businesses and warehouses for seafood landing facilities, cold storage facilities, marine stores, a marina office, public restroom facilities with showers, an aquarium, a maritime museum, parking areas, and unloading areas. Lodging exists on

the north side of the marina. Existing marina amenities include power, potable water, fire protection, unloading piers, a fuel pier, and a boat launch ramp.

The existing marina docks are concrete floating docks with timber structural whalers. Docks are held in place primarily with timber piles with some steel piles in locations of past dock repair work. Each dock is accessed from the shoreside parking and access areas by a timber abutment supported on timber pile and a steel gangway.

Many of the floats in the marina were constructed 50± years ago and are nearing the end of their useful life. In general, many floats are in poor condition due to aged floats and dock components, vessel impacts and improper mooring techniques, oversize vessels in undersize slips, deteriorated/rotten timber members failing due to reduced strength, and deferred maintenance.

The existing dock configuration provides an insufficient slip mix for the existing marina market, including an insufficient number of slips with appropriate length and width to meet the demands of the commercial and tribal fishing fleet, oversized slip mix for the recreational fleet, and undersized slips in the appropriate location for the larger recreational and charter fleet. Replacement/reconfiguration of aging dock systems will allow for strategic slip mix modifications.

2.2.1. Three Marina Areas

The South Marina area shown in Figure 3 is comprised of Floats 15, 17, 19, and 21. To the south of the South Marina area is an active boat launch and USCG launch facility and to the north are fixed piers used by a commercial seafood company. The existing docks are concrete floating docks with timber whalers and piles. The slip mix is primarily 30 ft to 50 ft slips with some slips 60 ft and larger. Slip lengths and widths are not adequate for the larger commercial vessels demand, and a portion of larger commercial vessels are forced to moor in undersized slips in Mid Marina. Fairways between Floats 17, 19, and 21 are restrictive and undersized for the commercial vessels. The four floats are accessed from the upland parking area by four abutments to four gangways.

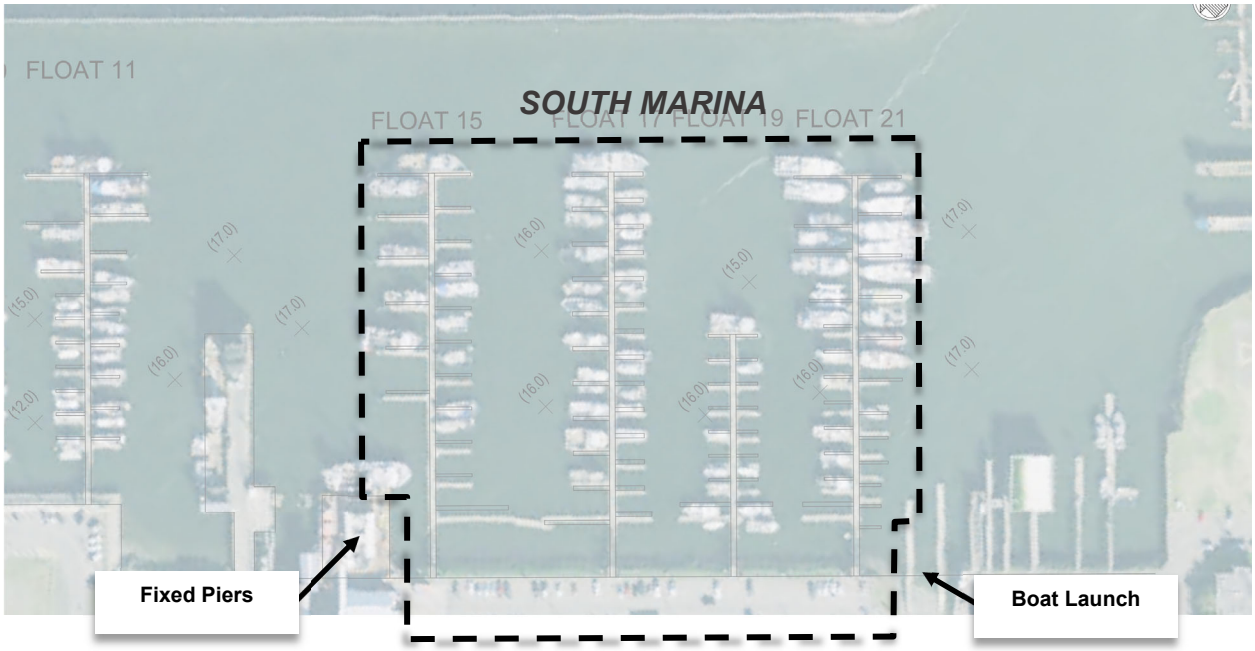


FIGURE 3: SOUTH MARINA SITE MAP

The Mid Marina area shown in Figure 4 is comprised of Floats 3, 5, 7, 9, and 11. To the south of the Mid Marina area are several fixed piers operated by the commercial seafood company to the north is the fuel pier and fuel pier approach/turning area and fairway. The existing docks are concrete floating docks with timber whalers. The five floats are accessed from the uplands by five abutments to five gangways.

FIGURE 4: MID MARINA SITE MAP

The North Marina area shown in Figure 5 is comprised of Floats 4, 6, 8, 10, 12, 14, and 16. To the south of the North Marina area is fixed Pier 4 used for vessel loading and unloading operations, to the north is a shallow draft area, and to the north-east are the commercial fish pens requiring adequate fairway width for access, and Float 20 which is not included in this redevelopment plan. Float 4 and Float 6 are the most recent major rehabilitation projects in the marina. The existing docks are concrete floating docks with timber whalers. The seven floats are accessed from the upland parking area by six abutments to six gangways.

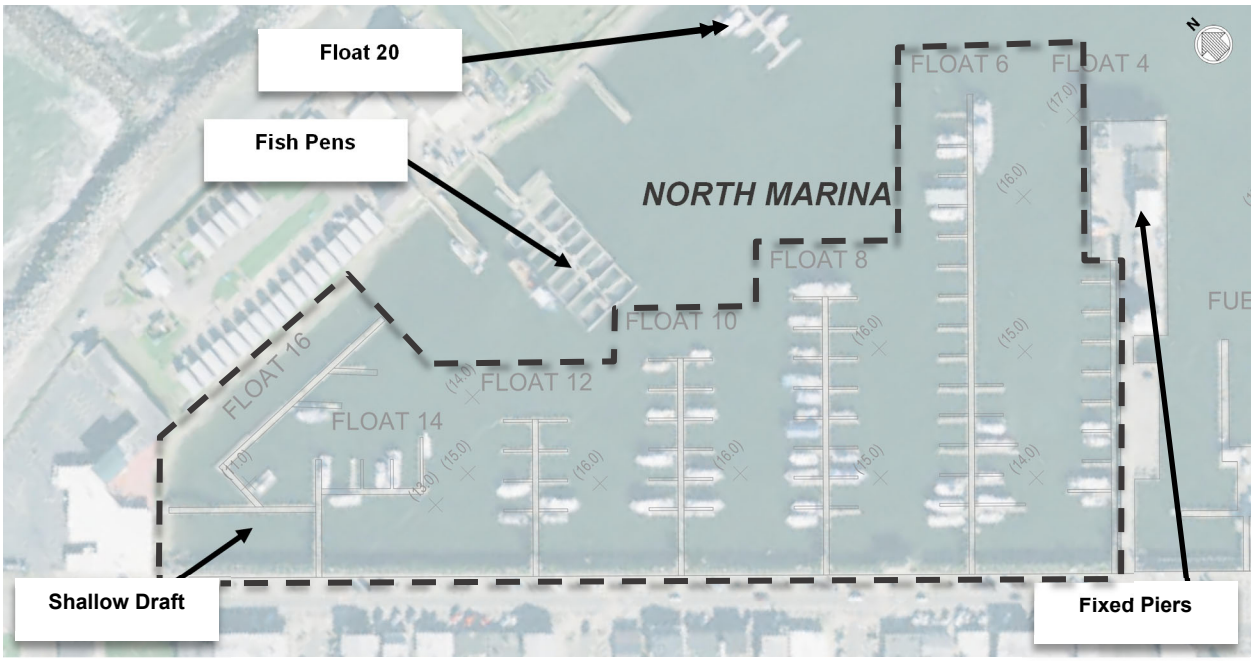


FIGURE 5: NORTH MARINA SITE MAP

2.2.2. Mechanical

Potable water is provided on all docks with 1-inch hose connections at each slip. Potable water is connected to the upland potable water system via 2-inch water line, using reduced pressure backflow prevention with flexible hose on the gangways.

South Marina, Mid Marina, and North Marina do not have sewer pump-out. There is an existing sewer pump-out station at Float 20 which is reaching the end of its service life. Currently, the Port is applying for a maintenance grant to repair/replace the pump-out.

Per discussion with Port maintenance, the existing fire protection manual dry standpipes are not in use and the Port has a waiver from the South Beach Regional Fire Authority. A manual dry standpipe hose connection was observed on Float 6 that does not appear to be functional. Per the waiver, the responding fire department does not plan to use it and they do not know the current condition of the system. On the other docks, standpipes were not visible.

2.2.3. Electrical

The incoming service for the marina is an underground, 12,470-volt service provided by the local utility. Each float is serviced by a utility transformer and panelboard, located at the top of each gangway. Feeders are routed from each panelboard, down the gangway and onto the docks where electrical service at each shore power pedestal is fed from below. Most of the electrical service is 240-volt, single phase. However, Floats 3, 11 and 15 are 208-volt, 3 phase service, with largest electrical service capacity being Floats 3 and 15 with a 600-amp, 208-volt, 3 phase service.

Each slip has a shore power box with a local disconnect, plug and revenue meter. Most of the existing shore power boxes on the smaller slips are 20- or 30-amp, single phase, 120-volt type. On the larger slips, they are installed with larger receptacles, such as 30- or 50-amp, single phase, 240-volt type. However, in the South and Mid Marinas, there are a number of 50 and 60 amp, 3 phase service for the larger demand commercial vessels. A number of the shore power pedestals are old and damaged.

Currently, there is no bonding of metallic parts, such as ladders, cleats, etc. per the 2020 National Electrical Code (the Code). Any modifications to the floats in the future would require this upgrade.

There are low voltage lights on most pedestals, and overhead lights throughout the marina. There are no low voltage communications on the floats.

2.3. Previous Studies

M&N reviewed and considered previous information and studies provided by the Port to evaluate current conditions and moorage demand as well as provide context for development of the phased redevelopment plan. Studies and information included but was not limited to:

- Port of Grays Harbor Westport Marina Demand Analysis Revised Final Report, January 8, 2020, prepared by BST Associates. Included as Appendix B of this report.
- Westport Marina Boat Basin Master Plan, November 2009, prepared by Reid Middleton and BST Associates.
- Westport Marina current moorage data base including vessel type, dimensions for vessels and slips
- Plans and bid results from prior repair projects.
- Correspondence with Port staff.

3. Marina Market/Moorage Overview

To develop reasonable and feasible assumptions for the modernization of the 50±-year-old moorage infrastructure, the Port of Grays Harbor commissioned an updated demand analysis and market study in 2020, Appendix B of this report. This in-depth analysis defined the existing market conditions, researched fisheries trends, identified the infrastructure and services available at competing West Coast marina facilities and considered the aging condition of the Westport Marina's in-water infrastructure that serves as the major revenue generating source of the marina facility.

The Westport Marina Demand Analysis found that the commercial fishing industry in Washington State continues to present a viable market opportunity for the Port of Grays Harbor. Market conditions identified:

- The commercial fleet is larger in vessel length and beam, with vessels that require robust moorage and utility service.
- Most fisheries species that Westport users participate in are stable and healthy, or in recovery.
- Catch is predicted to decline up to 10% by the end of the century.

Consolidation within the industry of both licenses and upland processors (locations) creates an opportunity for Westport as upland processors have made recent investments in infrastructure and additional growth and investment is planned.

The Westport Marina serves three primary markets: commercial and tribal fishing, recreational boating, and charter fishing. Existing moorage/market data was provided to M&N by way of the Westport Marina current moorage database which includes vessel type, dimensions of vessels and slips they are moored in; the Westport Marina Demand Analysis Revised Final Report; and through correspondence with Port staff. The existing marina markets moorage are summarized below.

3.1. Commercial/Tribal Fishing

Fishing is a key driver of the Westport economy. Based on the Westport Marina Demand Analysis Revised Final Report, Westport is the largest fishing port in Washington, accounting for approximately 28% of landed value and approximately 72% of landed weight. Westport has the highest value of fish landing in the Pacific Northwest.

There are approximately 161 annual commercial fishing vessels and 26 annual tribal fishing vessels in the marina (approximately 36% of total slips). Additionally, approximately 36 ft to 80+ ft commercial transient vessels arrive for the summer season (May-October) and approximately 40 ft to 50+ ft commercial transient vessels arrive for the winter season (December-May). Of the annual fleet, approximately 77 vessels (40%) are in undersized slips, where either the vessel is longer than the slip and/or a single vessel is moored in a double slip due to spatial constraints with vessel beams. There is a need for additional larger moorage slips to adequately accommodate the commercial and tribal fishing fleets. Currently commercial fishing vessels are moored predominantly in the South and Mid Marina.

There has been significant fluctuation in the regional commercial fishing market in the past. Based on conversations with Port staff the demand for commercial fishing vessel moorage going forward is anticipated to be stable to marginally increasing.

3.2. Recreational

Recreational boats (excluding charter vessels) are the second-largest user group/market for the Westport Marina. There are approximately 123 annual recreational vessels in the marina (24% of total slips), The number of transient recreational vessels in the marina fluctuates widely throughout the year, with the highest use during the summer season, and has been as high as approximately 150 vessels. Currently

recreational vessels are located predominantly in the North Marina and Mid Marina areas. The majority of the recreational vessels are less than 30 ft in length resulting in a large number of vessels in slips that are oversized, with a 10+ ft dock overhang.

3.3. Charter Fishing

There are approximately 40 annual charter vessels in the marina, varying in size from 29 ft to 50+ ft. Based on conversations with Port staff, charter fishing is an evolving industry and the charter vessel fleet at the marina has been evolving towards operators drawing business completely on-line. Currently the charter vessels are located predominantly in North Marina area where the largest slips are 40 ft in length, resulting in some charter vessels being moored in undersize slips.

4. Goals and Priorities

The Port of Grays Harbor (Port) Commissioners accepted the findings of the Demand Analysis and set the modernization of the Westport Marina moorage infrastructure as a priority at their public strategic planning workshop March 2021 focused on the Westport Marina.

Based upon the Demand Analysis, port management experience, and information from trusted engineers, the following considerations were defined for the redevelopment study.

Summary of Considerations:

- Demand exists for moorage facilities that can accommodate larger vessels both in vessel length and tonnage.
- Existing slips are undersized which can raise problems due to the geometry of the moorage, potentially causing damage to facilities.
- Marina properties are available for lease, not for sale.
- Modernization opportunities will need to focus on cost effective repair, replacement or improvement of existing infrastructure based upon user needs.
- Financial reconstruction of the entire Marina can only be accomplished in a phased approach that considers the limited financial resources and staff capacity to carry out oversized projects.

During the Port of Grays Harbor Westport Marina District Strategic Planning workshops in March 2021 and March 2022, the Port of Grays Harbor Commissioners directed staff to focus on the moorage infrastructure of the Marina as the top priority to retain and expand the revenue base of the Marina. The phased approach of this study reflects the Port's need to break the modernization projects into financially feasible phases that reflect the capacity for the Port to invest in upgrades that are of highest need based on safety and business opportunity.

The existing marina has an inadequate slip mix and moorage distribution for current/future demand. This includes insufficient slip lengths and widths to meet the commercial fishing vessel fleets greater lengths and wider beams. oversized slips for much of the recreational vessel market demand, and some undersized slips in the desired charter moorage location to meet charter vessel demand. Adjustments to the existing slip mix, dock layouts/slip sizing, and fairway widths will allow the marina to serve existing customers and better support future customers.

4.1. User Redistribution

Existing users are moored at slips throughout the marina based on slip availability, dock condition, and slip length and width rather than proximity to similar user groups, function, needs, and amenities. A primary (early project) goal is to consolidate the larger commercial fishing fleet vessels in a defined area, optimize slip sizes and fairway width for navigability, and design performance of dockage and utilities to meet appropriate user needs. This will allow the marina to separate the large commercial vessel space and recreational space to optimize design and better coordinate resources (space, working area, storage, and operational use).

4.2. Dock Upgrades

Many of the docks are reaching the end of their useful service life leading to increasing maintenance and repair cost, and loss of leasable linear foot of dock. Dock upgrades will be based on optimizing float types and amenities for the intended design vessel. Based on inspection, and where feasible, existing concrete float modules could be reused as an interim float rehabilitation measure when replacement with a new float system is not considered necessary. This rehabilitation would include new whalers, thru-bolts, and pile.

4.3. Feasible Affordable Phased Redevelopment

The Port's business model is to provide publicly owned infrastructure to attract private investment that generates business activity, employment opportunities and expands the tax base in the county. This model has resulted in more than $200 million in private investment and hundreds of regional jobs paying wages and benefits well above the local median wage.

At the Westport Marina, this strategy has successfully resulted in upland investments by seafood processors, cold storage, fuelling service, marine supply companies, restaurants, lodging and other service providers. The activities of the Westport Marina serve as an economic hub for the region.

The redevelopment plan for marina modernization must be divided into smaller, manageable phases with individual projects (particularly early priority work) which fall into fundable categories. Smaller, readily implemented projects allow for more rapid approvals, and ease of funding allocation – if it cannot be paid for, it will not be built.

5. Redevelopment Strategy

The Port Market Analysis Team was led by General Manager of Westport Marina Molly Bold, with input and assistance by Marina Operations Manager Jeremy Plummer, Marina Office Manager Stephanie Edens, assisted by Executive Director Gary Nelson, and Deputy Director Leonard Barnes whose combined experience of more than 50 years attracting business to the Port of Grays Harbor demonstrates their expertise in the types of customers that best fit with the Port's infrastructure and business model.

The Market Analysis Team was supported by the Port's Director of Engineering and Environmental Service Randy Lewis, Port Engineer Kris Koski, Director of Public Affairs Kayla Dunlap and Port strategic planning consultant Shelli Hopsecger, CCAI. The team analyzed data from current users, utilized the demand and trend analysis completed by BST Associates for the Westport Marina Demand Analysis Revised Report, assessed infrastructure requirements for each type of user and developed a matrix of market retention and expansion opportunities as it related to moorage.

Working closely with the Market Analysis Team, M&N developed a Basis of Design (BOD). The BOD was developed in an iterative process in conjunction with the Redevelopment Plan, phased approach and consisted of several phased alternatives for marina redevelopment including alternative phases, layouts, slip mixes, float types, and access locations. Regular meetings, discussions and correspondence were held with the Market Analysis Team and alternatives were developed based on identified considerations and constraints of the short-term, near-term, and long-term project goals. Alternative phases, layouts, slip mixes, float types, access locations, and cost and constructability issues were reviewed with the Port regularly and refined during the development process. Preferred alternatives were selected by the Market Analysis Team first for the short-term, then near-term and long-term goals – when all goals were addressed, the system as a whole was revisited and reviewed by the team to ensure the redevelopment strategy successfully optimized the redevelopment approach. Financial feasibility, funding strategies and economic outcomes were developed. Meetings were held to discuss the modernization phases and the impacts on existing and potential markets. Each meeting incorporated the latest information from M&N in order to assess the financial feasibility of each potential target outcome.

The redevelopment strategy was developed to address existing issues with the large commercial fleet, the underserved recreational and charter fleet, and to consolidate these users in focused areas of the marina laid out for their specific needs. Priorities were to increase fairway width for access, increase slip width, and analyse slip mix for optimization based on conversations and prior studies.

5.1. Three Marina Areas

The marina consists of three general areas of docks which are the subject of this modernization strategy and redevelopment plan: South Marina, Mid Marina, and North Marina.

5.1.1. South Marina

Considerations:

The highest priority area, South Marina docks are failing and have reached the end of their useful service life. Slip widths are inadequate for the target commercial fleet and many double slips at Float 15 and Float 21 are only able to berth a single vessel.

Slips will be widened and upsized for the commercial fleet, and South Marina will be able to relieve the existing shortcomings of existing South Marina and Mid Marina.

Constraints:

South Marina is constrained to the south by an existing boat launch, which must remain open to access. To the north, existing fixed piers separate South Marina from Mid Marina. Based on water depth, the docks

should not be shifted shoreward and lose the existing depth that is adequate for existing and future design vessels.

5.1.2. Mid Marina

Considerations:

The second priority area, Mid Marina slips are inadequate for serving the existing commercial boaters and many double slips at Float 3 are only able to berth a single vessel. As South Marina projects are completed, vessels from Mid Marina may be shifted to the new docks to allow for evaluation and development of this basin.

Constraints:

Mid Marina is constrained to the south by several fixed piers and to the north by the fuel pier and fairway. Based on water depth, the docks should not be shifted shoreward and lose the existing depth that is adequate for existing and future design vessels. Based on the entrance fairway to the Westport Marina, the docks should not shift significantly channelward.

5.1.3. North Marina

Considerations:

Though North Marina has its challenges in serving the existing market, the needs have been evaluated as less pressing than South and Mid Marinas. North Marina is identified as the area of least priority and will not be considered in early projects.

Constraints:

North Marina holds the majority of the smaller slips at Westport Marina and primarily serves the recreational and charter fleet. To the south of the marina is a fixed pier and to the north is a shallow draft area. To the north-east are the commercial fish pens requiring adequate fairway width for access.

5.2. Project Types

Projects have been classified into three categories:

- Remove and Replacement
- Rehabilitation
- No Change

Remove and Replacement projects will involve the full demolition of the identified floating docks along with associated guide piles, and replacement with new floating dock in optimized configurations, new guide piles, and upgraded electrical and mechanical systems. Prior to demolition, dock condition will be structurally assessed and select docks determined to be adequate for reuse shall be removed intact and placed in an upland location for cleaning, additional structural assessment, and rehabilitation for reuse.

Rehabilitation projects will involve structural assessment of the identified docks and a reconfiguration of the docks using the existing docks. Docks not passing the structural assessment will be removed and replaced with the stored upland docks rehabilitated under the Remove and Replacement projects. The rehabilitated docks may require replacement of whalers, through rods and float modules. Rehabilitation projects will also involve replacement of all existing piling and replacement of the existing utilities including electric and mechanical upgrades.

No Change projects will not be upgraded from existing conditions under this modernization strategy. No docks, piles, or utility upgrades will be made and no adjustment to the exiting configuration will be made,

though floats will continue to be maintained through normal maintenance and repair projects including minor upgrades and modifications as required

5.3. Phasing

Projects will be phased as follows based on project scope, scale, location, and funding opportunities:

- Near-term
- Mid-Term
- Long-Term

Near-term projects are defined as the first projects to occur, to be implemented in 1-5 years. These projects consist of the first large scale 'Remove and Replacement' projects with funding opportunities such as Port Capital Improvement Plan, Grays Harbor County .09 Fund, Washington State Recreation and Conservation Office (RCO), Rural Business Development Grant (USDA), and Economic Development Assistance (EDA). As described in Section 6, these projects are called Phase 1.

Mid-Term projects are defined as the projects to be implemented following the Phase 1 project installation, projected to be designed and constructed in 5-12 years. These projects are anticipated to have lower construction costs than Phase 1 projects and may have similar eligible funding as Phase 1 and may also be funded by the Port maintenance and operation budget. As described in Section 6, these projects are called Phases 2 and 3.

Long-term projects are defined as projects that may be investigated after the implementation of Phase 2 and 3 projects, likely 12+ years. As described in Section 6, these projects are called Phase 4, 5, and 6. Prior to Phase 4, it is recommended that slip demand be reinvestigated.

Table 1 below summarizes the strategic phase feasibility and required development action. These phased developments are discussed in Section 6.

TABLE 1: STRATEGIC PHASE FEASIBILITY AND DEVELOPMENT ACTION REQUIRED

Location & Phase ID	Description	Feasibility Rating S=Strong, A=Average N=Not feasible	Infrastructure redevelopment required: RR = Remove & Replace Rehab = Rehabilitation of existing M = Maintain	Implementation Timeline NT= Near-term MT= Mid-term LT=Long-term
South Marina 1A	Float 19 Removal & Float 21 Replacement and Reconfiguration	S	RR	NT
Mid Marina 1B	Float 11 Replacement and Reconfiguration with Work Platform	S	RR	NT
South Marina 1C	Floats 15 & 17 Replacement and Reconfiguration, Removal of Float 19	S	RR	NT
Mid Marina 1D	Float 11 Rehabilitation	S	Rehab	NT
Mid Marina 2A	Floats 3 & 5 Gangway Replacement and Reconfiguration	S	RR	MT
Mid Marina 2B	Floats 3 & 5 Rehabilitation	S	Rehab	MT
Mid Marina 3	Float 7 & 9 Replacement and Reconfiguration	A	RR	MT
North Marina 4A	Floats 8, 10, 12 Gangway Replacement and Reconfiguration	A	RR	LT
North Marina 4B	Floats 8, 10 & 12 Rehabilitation	A	Rehab	LT
North Marina 5	Floats 14, & 16 Rehabilitation and Reconfiguration	A	RR	LT
North Marina 6A	Float 20 – Maintain, Re-evaluate	A	M	LT
North Marina 6B	Float 4 – Maintain, re-evaluate	A	M	LT
North Marina 6c	Float 6 – Maintain, re-evaluate	A	M	LT
North Marina 6D	Floats 4 & 6 Remove and Reconfigure Gangway	A	RR	LT

Feasibility Ratings:

S = Strong likelihood of meeting the market goals to attract and accommodate larger vessels to the Westport Marina and retain the existing user base. Safety and accessibility are enhanced. Project phase is financially feasible and will contribute to the economic health of the facility upon construction.

A = Average likelihood of meeting one of the market goals of attracting and accommodating larger or additional vessels, or retaining existing user base. Safety and accessibility are enhanced. Project phase is financially feasible and will contribute to the economic health of the facility upon construction.

N = Not feasible means the improvements will have no impact on market goals of attracting and retaining users. None of the phases fell within the N rating.

Implementation Timeline:

NT= Near-term occurring within the next 1-5 years

MT= Mid-term occurring within the next 5-12 years, or after near term projects

LT= Long-term occurring after 12+ years

Consideration of Alternative Sites:
This study focused on the modernization of the existing Westport Marina moorage basin. No comparable site has the extensive moorage services adjacent to the seafood processors and upland services available at Westport. However, the Demand Analysis compares the Westport Marina to competing commercial seafood ports along the West Coast. This information was used to identify Westport Marina's unique niche for economic development opportunities. For more detail refer to Appendix B.

6. Redevelopment Plan, Basis of Design

The redevelopment plan is divided into fourteen (14) phases. Though numbered consecutively, these phases may be implemented in a non-consecutive manner, dictated by funding opportunities and future marina needs. These phases are presented by marina area, starting from the near-term projects in South Marina, to Mid Marina, to the long-term projects in North Marina.

6.1. South Marina

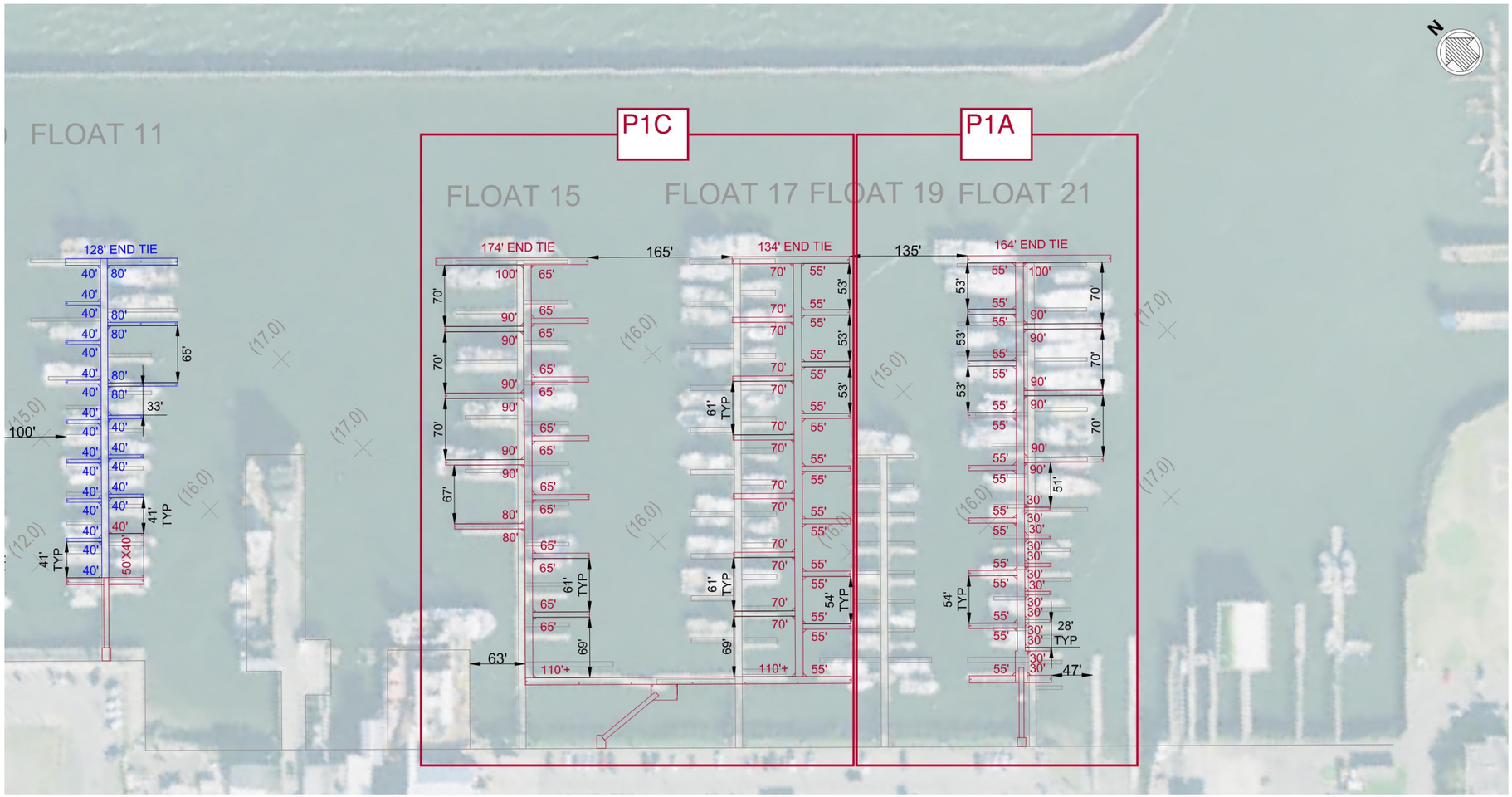
South Marina is developed to address existing issues with the large commercial fleet and consolidate these users in one area of the marina laid out for their specific needs. South Marina is the priority and represents the first phase(s) of work to be executed. South Marina captures the larger permanent commercial fleet (55 ft and up), additional slips, large slips for the commercial boat builder, and some 30 ft slips for the boat launch.

Widened commercial slip widths were developed based on unique large commercial vessel requirements, conversations with the Port and review of the Port's marina slip moorage database to identify existing slips with inadequate capacity. On review of existing boats that reside in the marina, it is apparent that there are some unusually wide vessels. The approach to developing a reconfiguration of the marina was to select a conservative overall applied vessel beam for determination of double slip width, understanding that the widest beam vessels would be matched in a double slip with a vessel of appropriate beam for necessary clearance. The Approved South Marina Redevelopment Plan in Figure 6 has widths shown to be appropriate for double commercial slips with wide fairways. Some slips will be lost in South Marina compared with existing conditions, but this is not an overall problem – any necessary larger permanent commercial fleet slips lost are picked up in Mid Marina during existing and future improvements.

South Marina redevelopment consists of two (2) phased Remove and Replacement projects for near-term design and construction. These will be the first redevelopment projects in the marina and will increase slip length and width, optimize slip mix, and optimize access to the marina with the intent of relieving the shortcomings of existing South Marina and Mid Marina by supporting the commercial fleet. These phases are shown in Figure 6.

- **Phase 1A:** This Remove and Replacement project will consist of fully demolishing and removing Float 19 and Float 21 inclusive of guide piles, utilities, gangways and abutments, and replacing with one dock tree, approximately located in the Float 21 footprint. Access will be from a new abutment structure and ADA gangway. Slips to the north will be upsized and the slip mix to the south will be optimized to include smaller slips in the South Marina. Prior to demolition, dock condition will be structurally assessed and select docks determined to be adequate for reuse shall be removed intact and placed in an upland location for cleaning, additional structural assessment, and rehabilitation for reuse. The demolition portion of this phase must be conducted prior to Phase 1C as to allow adequate fairway width for piledriving and dock installation.

- **Phase 1C:** This Remove and Replace project will consist of fully demolishing and removing Float 15 and Float 17 inclusive of guide piles, utilities, gangways and abutments and replacing with two dock trees accessed by a central abutment and ADA gangway. The two dock trees will be connected by a headwalk, slips and fairways will be upsized for the commercial market. Two 100+ slips will provide dockage for the existing boat manufacturer. Prior to demolition, dock condition will be structurally assessed and select docks determined to be adequate for reuse shall be removed intact and placed in an upland location for cleaning, additional structural assessment, and rehabilitation for reuse.



WESTPORT MARINA – SOUTH MARINA
SCALE: 1"=60'

NOTE: FINAL LOCATION AND NUMBER OF PILE MAY VARY BASED ON MANUFACTURER DESIGN.

LEGEND:

- REMOVE AND REPLACE
- REHABILITATE
- NO CHANGE

60' 0' 60' 120'
SCALE: 1"=60'

FIGURE 6: APPROVED SOUTH MARINA PHASED REDEVELOPMENT PLAN

6.2. Mid Marina

Mid Marina provides both the recreational/transient and commercial moorage necessary to balance out the remaining marina demands/slip mix not captured in South Marina redevelopment.

Mid Marina redevelopment consists of five (5) phased Remove and Replacement/Rehabilitation projects for near-term design and construction. The purpose is to provide additional recreational slip capacity, while rehabilitating slips that will accommodate commercial overflow from South Marina. Access to the floats will be condensed and a new working floating platform will be installed for commercial use. These phases are shown in Figure 7.

- **Phase 1B:** This Remove and Replacement project will consist of fully demolishing and removing a portion of the mainwalk and headwalk, shoreward slips, gangway, and abutment from Float 11 and replacing with a new mainwalk, headwalk, abutment and ADA gangway, utilities, and a working floating platform for commercial use. Prior to demolition, dock condition will be structurally assessed and select docks determined to be adequate for reuse shall be removed intact and placed in an upland location for cleaning, additional structural assessment, and rehabilitation for reuse. The intent of this project is to be phased with Phase 1A.

- **Phase 1D:** This Rehabilitation project will rehabilitate the remaining Float 11 docks not removed and replaced under Phase 1B. Docks will be structurally inspected. Docks that do not pass structural inspection will be removed and replaced with the stored upland docks rehabilitated under previous phases. All piles will be removed and replaced, and the docks will be reconfigured to accommodate vessels with wider beams, and provide slips to 40’ vessels not accommodated by the South Marina slip layout. Though not all docks will be replaced, this phase will include utility upgrades.

- **Phase 2A:** This Remove and Replacement project will consist of fully demolishing and removing the headwalks, gangways, and abutments at Float 3 and Float 5, and replacing with a headwalk that spans between the two dock trees, connecting them for access. A new abutment and ADA gangway will be constructed at the approximate location of the existing abutment. This project is intended to be phased with Phase 2B.

- **Phase 2B:** This Rehabilitation project will rehabilitate Float 3 and Float 5. Docks will be structurally inspected. Docks that do not pass structural inspection will be removed and replaced with the stored upland docks rehabilitated under previous phases. All piles will be removed and replaced, and the docks will be reconfigured to accommodate vessels with wider beams. Though not all docks will be replaced, this phase will include utility upgrades.

- **Phase 3:** This Remove and Replacement project will consist of fully demolishing and removing Float 7 and Float 9 including abutments and gangways, and replacing with two dock trees accessed by a central abutment and ADA gangway. The two dock trees will be connected by a headwalk, slips and fairways are targeted towards the underserved recreational and charter market. The next abutment will be located at the approximate location of the existing Float 7 abutment.

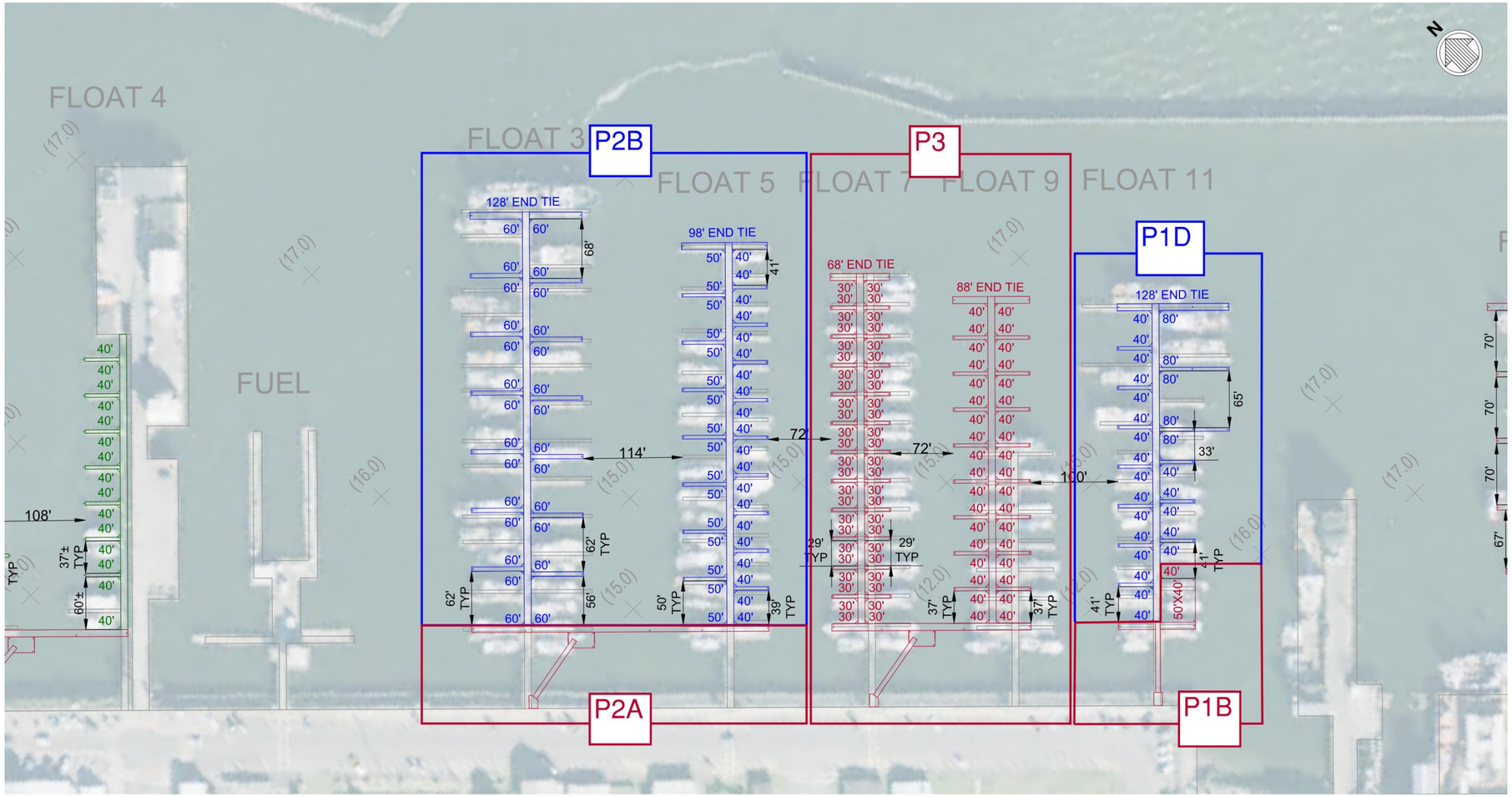


FIGURE 7: APPROVED MID MARINA PHASED REDEVELOPMENT PLAN

6.3. North Marina

North Marina is developed to provide appropriate slip mix in desired location to consolidate and better serve the charter fleet, recreational, and transient users. Smaller charter and recreational vessels from 30 ft to 45 ft and a few longer end ties are accommodated by conservative slip widths. There is phasing flexibility/adaptability in North Marina to meet Port needs.

North Marina redevelopment consists of seven (7) phased Remove and Replacement/Rehabilitation/No Change projects for long-term conceptual evaluation. The purpose is to refine the slip mix to accommodate the recreational and charter market. Prior to Phase 4, it is recommended that slip demand be reinvestigated. These phases are shown in Figure 8.

- **Phase 4A:** This Remove and Replacement project will consist of fully demolishing and removing the headwalks, gangways, and abutments at Float 8, Float 10 and Float 12, and replacing with a headwalk that spans between the three dock trees, connecting them for access. A new abutment and ADA gangway will be constructed at a new access point, allowing for a centrally located landing float. This project is intended to be phased with Phase 4B.

- **Phase 4B:** This Rehabilitation project will rehabilitate Float 8, Float 10, and Float 12. Docks will be structurally inspected. Docks that do not pass structural inspection will be removed and replaced with the stored upland docks rehabilitated under previous phases. All piles will be removed and replaced, and the docks will be replaced in their existing configuration. Though not all docks will be replaced, this phase will include utility upgrades.

- **Phase 5:** This Remove and Replacement project will consist of fully demolishing and removing Float 14 and Float 16 inclusive of guide piles, utilities, gangways and abutments, and replacing with a reconfigured dock layout. This new layout is reconfigured to move the docks south, away from the shallow northern corner of the marina, where during low tide the existing docks become grounded. Access will be centralized from a new abutment and ADA gangway. The layout is optimized to maximize slips for the recreational market.

- **Phase 6A** (Float 20 not shown in Figure 8)**:** This project will be a No Change project at Float 20 - prior to Phase 4 and improvements at North Marina, it is recommended that slip demand is reinvestigated to determine if Float 20 is optimally serving the marina.

- **Phase 6B:** This project will be a No Change project at Float 4 - prior to Phase 4 and improvements at North marina, it is recommended that slip demand is reinvestigated to determine if Float 4 is optimally serving the marina.

- **Phase 6C:** This project will be a No Change project at Float 6 - prior to Phase 4 and improvements at North marina, it is recommended that slip demand is reinvestigated to determine if Float 6 is optimally serving the marina.

- **Phase 6D:** This Remove and Replacement project will consist of fully demolishing and removing the headwalks, gangways, and abutments at Float 4 and Float 6, and replacing with a headwalk that spans between the two dock trees, connecting them for access. A new abutment and ADA gangway will be constructed at the approximate location of the existing Float 6 abutment. This project is intended to be phased with Phase 6B and Phase 6C, though under this concept, these are areas of No Change.

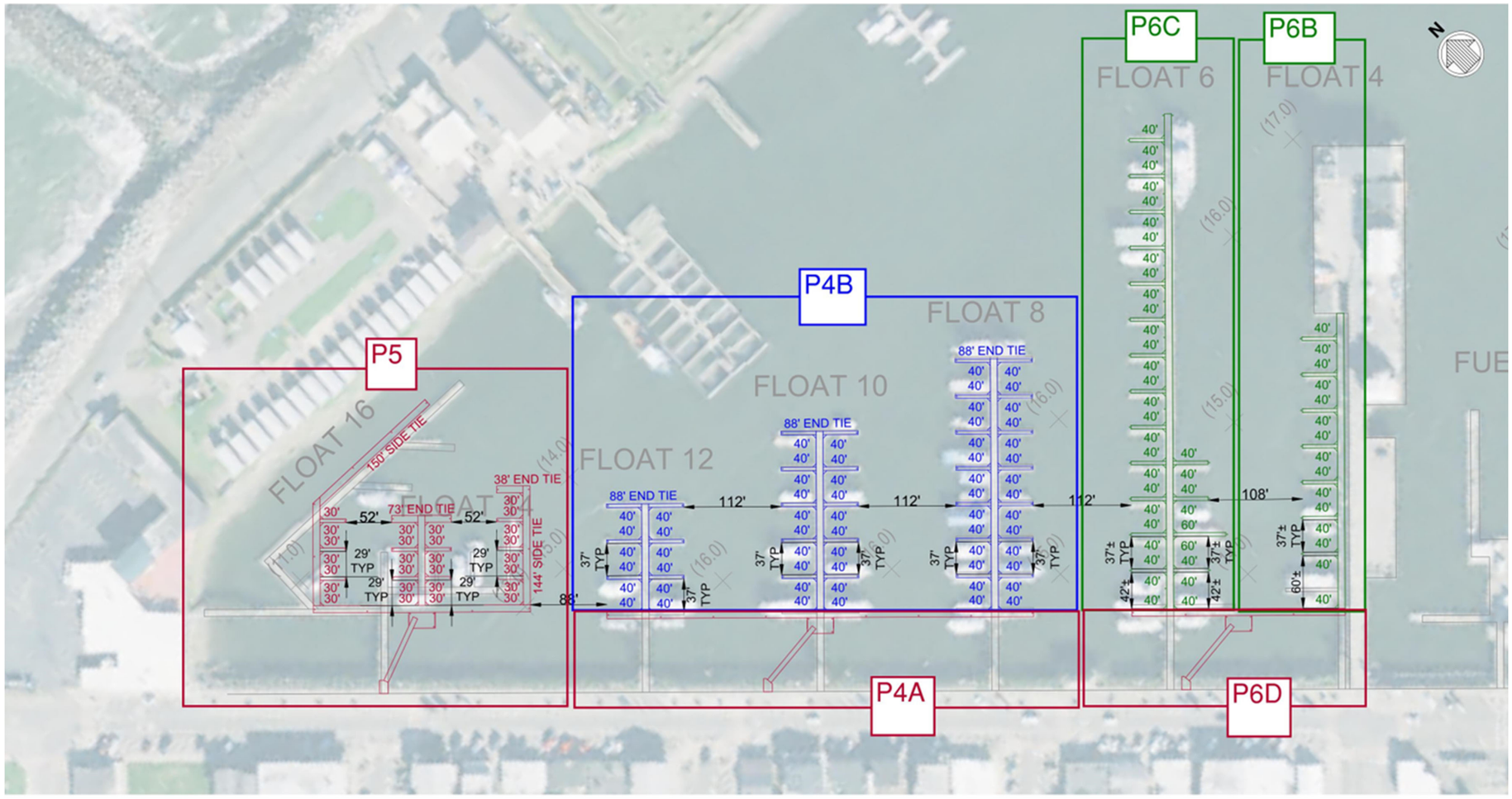


FIGURE 8: APPROVED NORTH MARINA PHASED REDEVELOPMENT PLAN

6.4. Slip Mix

Slip mix is presented in individual tables per marina area, Tables 2, 3, and 4, North, Mid, and South, and by the overall Redevelopment Plan slip mix. The overall slip mix presented below in Table 5 reflects a balance between market demand and the development of fundable projects. As previously noted, the goals of accommodating the commercial fishing fleet, particularly the longer, wider vessels and accommodating the recreational market are both addressed. Rehabilitation projects such as P1B, P2B and P4B offer the ability to easily further refine the slip mix going forward based on demand and function at the time of project execution.

TABLE 2: SOUTH MARINA SLIP MIX

Slip Length (ft)	*Proposed South Marina Floats*				*Existing South Marina Floats*				
	FLOAT 15	FLOAT 17	FLOAT 21	Totals	*FLOAT 15*	*FLOAT 17*	*FLOAT 19*	*FLOAT 21*	*Totals*
30			13	13			*26*	*5*	*31*
40				0		*25*		*18*	*43*
50				0	*19*	*21*	*2*		*42*
55		16	16	32					*0*
60				0	*6*			*13*	*19*
65	13			13					*0*
70		13		13	*5*		*2*	*2*	*9*
80	2			2				*4*	*4*
90	6		6	12		*2*			*2*
100	1		1	2					
110	1	1		2	*2*				*2*
Slip Totals	23	30	36	89	*32*	*48*	*30*	*42*	*152*
End Tie (ft)	174	149	164	487	*129*	*99*	*69*	*159*	*456*
Total Linear Feet				6052					*7696*

TABLE 3: MID MARINA SLIP MIX

Slip Length (ft)	Proposed Mid Marina Floats						*Existing Mid Marina Float*					
	FLOAT 3	FLOAT 5	FLOAT 7	FLOAT 9	FLOAT 11	Totals	*FLOAT 3*	*FLOAT 5*	*FLOAT 7*	*FLOAT 9*	*FLOAT 11*	*Totals*
30			48			48						*0*
35						0						*0*
40		20		36	22	78		*27*	*50*	*26*	*23*	*126*
50		16				16		*19*			*4*	*23*
60	28					28					*6*	*6*
70						0	*39*					*39*
80					5	5					*6*	*6*
Slip Totals	28	36	48	36	27	175	*39*	*46*	*50*	*26*	*39*	*200*
End Tie	128	98	78	78	128	510	*148*	*98*	*88*	*88*	*168*	*590*
Total Linear Feet						7950						*10350*

TABLE 4: NORTH MARINA SLIP MIX

Slip Length (ft)	*Proposed North Marina Float*									*Existing North Marina Float*								
	FLOAT 4	FLOAT 6	FLOAT 8	FLOAT 10	FLOAT 12	FLOAT 14	FLOAT 16	FLOAT 20	Totals	*FLOAT 4*	*FLOAT 6*	*FLOAT 8*	*FLOAT 10*	*FLOAT 12*	*FLOAT 14*	*FLOAT 16*	*FLOAT 20*	*Totals*
30						20	7	*25*	52								*25*	*25*
40	15	34	28	20	12			*12*	121	14	31	*30*	*22*	*14*	*5*	*4*	*12*	*132*
50									0									*0*
60		2							2	2	2							*4*
70									0		2				2			*4*
80								*5*	5								*5*	*5*
Slip Totals	15	36	28	20	12	20	7	*42*	180	16	35	*30*	*22*	*14*	*7*	*4*	*42*	*170*
End/Side Tie		380	108	88	88	231	150	*150*	1195		380	*88*	*88*	*88*	*140*	*160*	*150*	*1094*
Total Linear Feet									8115									8044

TABLE 5: RECOMMENDED OVERALL SLIP MIX

Slip Length (ft)	Proposed South Marina Floats				Proposed Mid Marina Floats						Proposed North Marina Floats									Totals	*Ex Totals*	Delta
	FLOAT 15	FLOAT 17	FLOAT 21	Totals	FLOAT 3	FLOAT 5	FLOAT 7	FLOAT 9	FLOAT 11	Totals	FLOAT 4	FLOAT 6	FLOAT 8	FLOAT 10	FLOAT 12	FLOAT 14	FLOAT 16	*FLOAT 20*	Totals			
30			13	**13**			48			**48**						20	7	*25*	**52**	**113**	*56*	**57**
40				**0**		20		36	22	**78**	15	34	28	20	12			*12*	**121**	**199**	*301*	**-102**
50				**0**		16				**16**									**0**	**16**	*65*	**-49**
55		16	16	**32**						**0**									**0**	**32**	*0*	**32**
60				**0**	28					**28**		2							**2**	**30**	*29*	**1**
65	13			**13**						**0**									**0**	**13**	*0*	**13**
70		13		**13**						**0**									**0**	**13**	*52*	**-39**
80	2			**2**					5	**5**								*5*	**5**	**12**	*15*	**-3**
90	6		6	**12**						**0**									**0**	**12**	*2*	**10**
100	1		1	**2**						**0**									**0**	**2**	*0*	**2**
110	1	1		**2**						**0**									**0**	**2**	*2*	**0**
Slip Totals	23	30	36	**89**	28	36	48	36	27	**175**	15	36	28	20	12	20	7	*42*	**180**	**444**	*522*	**-78**
End Tie (ft)	174	149	164	**487**	128	98	78	78	128	**510**		380	108	88	88	231	150	*150*	**1195**	**2192**	*2140*	**52**
Total LF				**6052**						**7950**									**8115**	**22117**	*26090*	**-3973**

6.5. Slip/Dock/Fairway Dimensions

Slip width dimensions vary between target markets:

- Recreational vessels: Recommended minimum slip width is determined using guidance from American Society of Civil Engineers (ASCE) Planning and Design Guidelines for Small Craft Harbors (ASCE No. 50). Finger pier width is minimized to reduce overwater coverage but to maintain maximum operability and access. Recommended minimum slip width is found in Table 6.
- Commercial vessels: Though minimum slip width dimensions are determined for recreational vessels in Table 6, commercial vessels typically have wider beams and include rigging for fishing operations. These slips will be significantly wider than the same boat length for a recreational vessel.

TABLE 6: RECOMMENDED MINIMUM SLIP WIDTH AND DOCK DIMENSIONS

Slip Length (ft)	Applied Vessel Beam (ft)	Double Slip Width (ft)	Finger Width (ft)	Main Walkway Width (ft)
30	12	28	4	6
40	15	36	4	6
50	18	44	4	7
55	19	48	5	7
60	21	54	5	7
65	23	56	5	7
70	24	60	6	8
80	25	62	6	8
90	27	68	6	8

6.6. Site Dimensions/Access Constraints

Certain site features are present on site that limit the layout. For the three marinas this includes existing water depth, fairway offset from the breakwaters to the existing location of the T-heads, and offset from the shoreline to the existing docks. Additionally, South Marina is constrained to the south by the existing boat ramp which must remain open, and to the north by the fixed piers and the vessel yard operations. Mid Marina is constrained by the fixed pier to the south and vessel turning radius at the fuel pier to the north. North Marina is constrained by Float 4 and the fixed pier to the south, net pen access to the north, and the northern shallow basin where Float 16 is grounded at low tide.

6.6.1. Abutments and Gangways

Abutments and gangways will need to be replaced with abutments that meet current local building code and gangways that meet Americans with Disabilities Act (ADA) guidelines. As a minimum, gangways must be designed to provide for a maximum 1:12 (8.33%) slope but are not required to be longer than 80 feet in length. It is anticipated that all gangways will be 80 ft length. Abutment configuration/footprint will be

determined in the design phase based on required gangway and float clearances and interpretation of local building code requirements.

6.7. Dock and Infrastructure Considerations

6.7.1. Float Structure Types and Materials

There are several basic float structure types considered for Westport Marina as part of the replacement strategy. These float types are listed in Table 7 and described based on the float structure construction – timber, steel, aluminium and concrete. Evaluation of these float structure types includes consideration of the initial capital costs, structural suitability (such as supporting integration of grated decking surfaces), stability of floats underfoot, maintenance requirements, expected service life of the float system in saltwater environment, and the marinas experience and history with concrete float types.

Timber docks can be constructed using material that is usually readily available. Structural capacity of wood can be increased using glu-lam members that have desirable structural properties. Wood is durable when treated for saltwater exposure, however the types of treatment that are acceptable to use are influenced by the local environmental regulations. Repairs can be accomplished relatively easily. Longer fingers can be engineered/designed so that guide piles are only needed at ends of finger (similar to the other dock systems).

Steel docks are constructed using readily available material and offer flexibility in design and structural competency. Steel is subject to corrosion so protective coatings such as galvanizing is required in saltwater exposure.

Aluminum docks are used in marina installations for its resistance to marine corrosion. Aluminum has a high strength to weight ratio. However, aluminium can be subject to fatigue and stress cracking.

Concrete dock float systems have a mass providing stability and the concrete deck surface providing a suitable walking surface. Durability of concrete docks relies on the concrete mix design and placement. Concrete patching of damaged areas can be accomplished, but repairs may not be long-lasting. Connection of concrete float units must be properly designed to avoid stress concentrations and concrete failures.

TABLE 7: FLOAT STRUCTURE TYPE COMPARISON

Float Structure Type	Pros	Cons	Capital Costs	Estimated Service Life
Timber	• Flexible and lightweight • Range of floatation can be used (HDPE, Steel, or polyethylene tubs) • Repair to damaged members can be relatively easy • Grating can be incorporated into system easily	• Connection points can work loose over time; requiring dock maintenance.	$ 160 / SF	30+ years
Steel	• Durable and strong • Range of floatation can be used • Grating can be incorporated into system	• May require more maintenance due to corrosion • Field adjustments may be difficult • Repair of damaged sections can be difficult	$ 170 / SF	30+ years
Aluminum	• Lightweight compared to steel and concrete. • Better resistance to corrosion than steel • Grating can be incorporated into system	• Field adjustments may be difficult • Repair of damaged sections can be difficult	$ 175 / SF	30+ years
Concrete	• Solid feeling underfoot • Long service life • Difficult to incorporate grating into system	• Difficult to meet grating requirements • Repairs can be difficult	$ 180 / SF	40+ years

6.7.2. Utilities

At minimum, the marina should offer basic utilities which include sufficient shore power, potable water, and fire protection.

6.7.2.1. Mechanical

Where new floats are provided for the Remove and Replacement and Rehabilitation projects, 1-inch potable water connections will be provided for each slip. A connection to upland utility, utilizing flexible cable carrier assembly at the gangways will be provided.

For fire protection, a manual dry pipe standpipe system with 2-1/2 inch hose connections will be provided and spaced to cover all areas on the floats up to 150 feet from the hose connection. The fire department connection will be located on the float, near the gangway. Anticipated spacing of 2-1/2 inch hose connections will be 250-300 feet. The manual dry pipe standpipe system is normally dry and is only charged during fire department operations utilizing fire department pumping trucks.

No fire sprinkler protection is required as covered moorage is not provided at the marina. No sanitary sewer pump-out will be provided, except at the existing Float 20.

6.7.2.2. Electrical

For all floats, the existing electrical distribution will remain and be reused for the new configurations. The existing service transformer will remain and the float panelboards will either remain or be relocated to the gangway location for each float. Either a 208V or 240V feeder will be provided depending on the existing service, which will provide power for the shore power boxes. The size of the shore power box will depend on the size of slips at the float as well as the overall load on the panelboard servicing each float. Table 8 provides recommended power configurations for boats based on slip size.

TABLE 8: RECOMMENDED POWER CONFIGURATION

Slip Size	Recommended Power Configuration
<50 ft	(2) 30 amp 120/240V single phase
50 – 100 ft	(2) 50 amp 120/240V single phase

If additional power is required or desired, there may be some limitations unless the panelboard and associated utility transformer are upgraded with new, larger equipment. To provide electric service to larger slips, the Port may want to consider implementing improvements in a selective approach that provides larger services at the larger commercial slips. These improvements can be evaluated per phase.

Based on preliminary investigation, the following floats will not conform to the recommended power requirements in Table 8 based on the existing provided shore power. To meet the goals of the slip upsizing and increased power requirements, the panelboard and associated utility transformer may need to be upgraded with new, larger equipment. All circuit breakers will need to be replaced with new ground fault type to accommodate the modernization. These slips may be provided using existing shore power, with reduced power requirements as follows:

- South Marina:
    - Float 17: 110 ft slip can be 50-amp, remaining slips may be a mix of 20 amp and 30 amp, 120V.
    - Float 21: The largest 7 slips may be (2) 50-amp, remaining slips may be a mix of (1) 20 amp and 30 amp, 120V.
- Mid Marina:
    - Float 7: All slips may be 20 amp or a combination of 20 and 30 amp, 120/240V. This may be acceptable for recreational vessels.
    - Float 9: At least half of slips may be (2) 30 amp, 240V. This may be acceptable for recreational vessels or smaller commercial vessels.

- North Marina:
    - Float 4: At least half of slips may be 30 amp, 120V. Half of slips may be 30 amp, 240V.
    - Float 6: Slips >50 ft may be (2) 50 amp, 240V. All other slips will be a combination of (1) 30 amp, 120V and (2) 30 amp, 240V.
    - Float 8: At least 10 slips may be (1) 30 amp, 240V. The remaining slips may be (2) 30 amp, 240V.
    - Float 12: At least 2 slips may be 20 amp, 120V. This may be acceptable for recreational/charter vessels.
    - Float 14 & 16: Up to 9 slips may be (2) 30 amp, 240V. The remaining slips may be (1) 30 amp, 240V or a combination of 20 amp and 30 amp.

Power pedestals are produced from a variety of manufacturers. Pedestals should be fabricated with Type 316 Stainless Steel enclosures to provide durability for the marine environment. The units should also have LED lights at the top to provide general illumination around the pedestal on the floats, including hangers on the sides for cord support. Each unit will be provided with one or two shore power receptacles protected by a ground fault, circuit breaker and meter. Some power pedestals have a ground fault notification option alerting the marina to any ground fault event. When a ground-fault circuit breaker trips, the originating pedestal will flash red until the fault has been cleared.

FIGURE 9: TYPICAL STAINLESS STEEL POWER PEDESTAL

City of Westport Electrical is inspected by Washington State Department of Labour and Industries (L&I), Tumwater Office. Therefore, the City of Westport would follow the State Adoption of the 2020 National Electrical Code (the Code). The 2020 National Electric Code requirements include ground fault protection where on the water. To be fully Code compliant, all the breakers will need to be replaced in the distribution panel feeding each float with a shunt-trip type and a ground fault monitoring system set to trip at 100mA. This includes new shunt-trip breakers, a set of current transformers, ground fault control station and associated wiring and conduit. Also, the circuit breakers in the shore power box with a unit with 30mA, ground-fault type for each receptacle will need to be replaced.

Per discussions with the L&I regarding their interpretation, ground fault breakers are required for all new and relocated power pedestals. For existing installations where no feeders are modified, the upstream breaker can remain without ground fault protection. However, if a feeder is lengthened or shortened, then the upstream breaker will be required to have ground fault protection. This will require replacement of the existing circuit breaker with a shunt-trip type, circuit breaker with a ground fault protection system.

The Code also requires the bonding of all non-current carrying metal parts with a minimum of #8-gauge grounding/bonding conductor. Any future modifications to the float electrical service will include this grounding/bonding conductor from the panel down to the floats.

7. Estimated Project Cost

The marina is anticipated to be modernized in strategic near-term (1-5 year), mid-term (5-12 year), and long-term (12+ year) projects.

- Near-term projects: defined as projects occurring in the next 1-5 years, will be the Phase 1 projects in South and Mid Marina.
- Mid-term projects: defined as projects occurring after Phase 1 and projected at 5-12 year, will be the Phase 2 and Phase 3 projects in South and Mid Marina. The Mid-term projects will complete the modernization of South and Mid Marina.
- Long-term projects: defined as projects occurring after 12+ years, will be the Phase 4, Phase 5, and Phase 6 projects in North Marina. Prior to Phase 4, the redevelopment plan should be revisited to validate design direction, the market decisions, and North Marina slip mix. These phases are conceptual for this analysis.

Several assumptions were made in developing probable concept cost for the marina modernization phases. Assumptions made for quantity, pricing, or demolition can be found in Appendix A. Assumptions made on future conditions and project scope include the following:

- All estimates are in 2022 USD.
- No Change projects are not estimated.
- In addition to construction, estimates include assumptions for Engineering/Design/Permitting, Sales Tax, Construction Administration, and Contingency.
- No dredging is required for the marina modernization beyond typical maintenance dredging. Dredging is excluded from the estimated cost.
- Gangway abutment structures will require replacement and will need to be designed for seismic criteria per local building codes.
- No cost allowance is provided for relocation of vessels during construction.
- No mitigation is included in the estimated cost.
- Assume there are adequate floats available to meet the required needs of the Rehabilitation projects.
- Assume there is adequate upland electrical service provided to the existing marina for marina modernization.
- Assume there is adequate upland storage for floats undergoing rehabilitation.
- Assumes rehabilitated floats will not require floatation repairs or replacement.
- Assumes no replacement of fire protection system is required prior to the start of phased construction.

Several assumptions were made in developing probable concept cost for the electrical design for the marina modernization phases, including the following:

- Assume existing service equipment (panels, meters, utility transformers) will be reused unless required to be updated by L&I.
- Assume all shore power boxes will be replaced.

- Assume all metal equipment will be bonded as required by L&I.
- Assume all wiring will be replaced on floats.
- Assume conduit will be routed within utility trenches in the floats.
- Assume all conductors and conduit will be replaced.

The estimated project cost is organized by project type as shown in Tables 9 and 10 below. The cost breakdowns and assumptions are included as Appendix A.

TABLE 9: REMOVE AND REPLACEMENT ESTIMATED PROJECT

Remove and Replacement Estimated Project Cost					
Marina Area	**Phase**	**Approximate Proposed Square Footage**	**Approximate Proposed Pile Count**	**Abutment and Gangway Quantity**	**Approximate Cost**
South Marina	Phase 1A (Float 19 & 21)	11,475	31	1	$6,300,700
	Phase 1C (Float 15 & 17)	24,160	56	1	$11,453,300
Mid Marina	Phase 1B (Float 11)	2,320	3	1	$1,384,800
	Phase 2A (Float 3 & 5)	3,260	8	1	$1,114,300
	Phase 3 (Float 7 & 9)	15,508	62	1	$7,735,300
North Marina	Phase 4A (Float 8, 10, & 12)	4,460	11	1	$2,049,500
	Phase 5 (Float 14 & 16)	9,060	321	1	$4,835,500
	Phase 6D (Float 4 & 6)	2,500	7	1	$1,435,800

TABLE 10: REHABILITATION ESTIMATED PROJECT COST

Rehabilitation Estimated Project Cost*					
Marina Area	**Phase**	**Approximate Proposed Square Footage**	**Approximate Proposed Pile Count**	**Abutment and Gangway Quantity**	**Approximate Cost**
Mid Marina	Phase 1D (Float 11)	6,720	25	0	$3,045,500
	Phase 2B (Float 3 & 5)	18,490	53	0	$6,850,500
North Marina	Phase 4B (Float 8, 10, & 12)	5,012	30	0	$3,786,700

**Assumes there are adequate floats available to meet the required needs of the projects.*

8. Permitting Strategy

The current understanding of Westport Marina Redevelopment is that the project is intended to replace the existing docks with more functional and environmentally friendly materials while resulting in no net loss to ecological function. This includes removing creosote-treated piles from the environment and installing grated decking where feasible. These types of projects typically qualify for a more streamlined environmental review process, including programmatic permits and exemptions for repair and replacement of existing structures. The following section describes the environmental compliance approach, covering the topics of permitting and Endangered Species Act (ESA) mitigation considerations for replacement of the docks within the South and Mid Marinas. It is assumed a similar approach will be taken when permitting the future phases of the Westport Marina Redevelopment program at North Marina. A multi-phase programmatic permitting approach was considered, but due to the uncertainty of timing and funding for future phases, it is not recommended.

The permitting approach anticipated for the South Marina/Mid Marina phases is to apply for programmatic permits and exemptions as applicable to streamline the environmental review process. Early agency outreach is encouraged to confirm the permitting approach and documentation requirements. Table 11 includes a summary of anticipated environmental permits and approvals.

TABLE 11: ENVIRONMENTAL PERMITS AND APPROVALS

Approvals	Agency	Trigger	Notes
Federal			
Nationwide Permit (NWP) 3	U.S. Army Corps of Engineers (USACE)	Maintenance activities	A Joint Aquatic Resources Permit Application (JARPA) form will be prepared for an NWP 3. If any new/expanded in-water or overwater structures are proposed an individual permit will be required.
Endangered Species Act (ESA) Concurrence	National Marine Fisheries Service and U.S. Fish and Wildlife Service	Potential impacts to ESA-listed species and/or habitat	A Short-Form Biological Evaluation (BE) will be required to assess potential impacts from in-water activities. This will also include an assessment of potential mitigation requirements.
National Historic Preservation Act (NHPA) Section 106 Compliance	Washington Department of Archaeology and Historic Preservation	Potential impacts to archaeological, cultural, or historic resources	Documentation of limited potential for encountering artifacts will be included in the JARPA and State Environmental Policy Act (SEPA) Checklist.
State			
Hydraulic Project Approval (HPA)	Washington Department of Fish and Wildlife (WDFW)	Work within waters of the state	Application materials will be submitted via the WDFW Aquatic Protection Permitting System (APPS) online project portal upon issuance of the SEPA determination.
Clean Water Act Section 401 Water Quality Certification (WQC)	Ecology	Potential water quality impacts to waters of the state	A pre-filing notice will be submitted to Ecology to support Coastal Zone Management Act (CZMA) and Section 401 review. Section 401 compliance will be covered under the NWP 3; an individual WQC is not required due to limited in-water work and impacts.
CZMA Consistency Determination	Ecology	USACE permit requirement	CZMA compliance will be covered under the NWP 3.
Local			
SEPA Categorical Exemption	Port of Grays Harbor	Projects requiring local review in Washington State that qualify as exempt	A SEPA Categorical Exemption will be requested for repair, remodelling, and maintenance per Washington Administrative Code 197-11-800(3). If the project does not quality as maintenance and repair a SEPA Checklist will be prepared.
Shoreline Substantial Development Permit (SSDP)	City	Repair and maintenance activities located within the shoreline buffer	A SSDP exemption request letter will be submitted to the City for normal maintenance activities occurring within the shoreline buffer that are exempt per the City's Shoreline Master Plan. If a project or phase is not eligible for SSDP exemption – a permit application will be submitted to the City.
Floodplain Code Compliance	City	In-water structures within floodplain	A Floodplain Code Consistency Memorandum will be submitted to the City.

8.1. Federal Permits and Approvals

Nationwide Permit 3

The USACE will be the federal lead agency for the project due to in-water work occurring in waters of the U.S. It is anticipated that the Project will qualify for NWP 3 for repair, rehabilitation, or replacement of previously authorized structures. Per the USACE regional conditions for NWP 3, if the activity meets the conditions of Section 401 of the CWA, Section 401 WQC is incorporated into the NWP and an individual authorization is not required.

A JARPA would be prepared and submitted to USACE requesting an NWP for the Project. The review time frame for NWPs is generally 9 to 12 months from complete application determination. However, recent delays in ESA consultation have been extending this timeframe to 18 months in some cases. The NWP process does not include a public notice process.

If the project does not meet the requirements of the NWP 3 an Individual Permit may be required. The review time frame for an Individual Permit is typically 18 months or more from a complete application determination and includes a public notice process. These time frames are contingent on the consultation process with other agencies and can increase with project complexity.

ESA Section 7 Consultation

A short-form Biological Evaluation will be prepared to initiate informal consultation with the Services (informal consultation is typically applicable to NWPs compared to full consultation which requires preparation of a Biological Assessment) to demonstrate ESA Section 7 compliance for the proposed in-water work. The process for informal consultation is initiated by USACE during permit review and ends with a letter issued from the Services demonstrating compliance with ESA. The time frame for ESA review is incorporated with the USACE permit time frame since USACE permits are not issued until consultation is complete. The ESA consultation process does not include a public notice.

Note that recent budget and staffing issues within the Services have resulted in significant delays in ESA consultation, adding months to the permit review time frame.

NHPA Section 106 Consultation

USACE will lead the NHPA Section 106 process, which requires consideration of effects to historic properties (historic and prehistoric sites, structures, districts, or objects eligible for listing in the National Register of Historic Places [NRHP]) and consultation with affected Tribes. Preliminary archaeological review indicates that a Cultural Resources Assessment memorandum will not be required for the project. Documentation of limited potential for encountering artifacts will be included in the JARPA and SEPA Checklist.

8.2. State Permits and Approvals

Hydraulic Project Approval

WDFW regulates work that uses, diverts, obstructs, or changes the natural flow or bed of any of the marine or fresh waters of the state, including projects landward of the mean higher high water mark (MHHW) that will directly impact fish life and habitat. Because project activities include work in and adjacent to waters of the state, a WDFW HPA will be required. HPA review begins once a SEPA Categorical Exemption or determination is issued and takes up to 45 days to complete. No public notice is required.

Clean Water Act Section 401 and CZMA Consistency

Ecology is the local lead agency for Clean Water Act Section 401 compliance and CZMA consistency. Clean Water Act Section 401 compliance is required for projects that propose discharge of dredge or fill material in waters of the U.S. and for projects requiring compliance with Washington State Water Quality Surface Water Standards per Washington Administrative Code (WAC) 173-201A.

Under NWP 3, individual Section 401 review is required if the project involves activities below the OHWM with new work being proposed outside the original footprint. Due to the limited shift in location of the docks within an active marina, it is assumed that individual Section 401 review will not be required. CZMA review is triggered by projects with a federal nexus that are proposed within any of Washington's 15 coastal counties. An individual CZM Consistency Determination is required for projects under NWP if Ecology Section 401 review is required.

Ecology recently updated the protocols for these reviews and is requiring a pre-filing application to be submitted 30 days prior to submittal of the JARPA. The pre-filing process includes a pre-application meeting and review of conceptual materials to determine if Clean Water Act Section 401 or CZMA compliance will be required. Once the 30-day period is over, a letter stating that the project will comply with Washington State water quality standards is submitted to Ecology with the JARPA.

8.3. Local Permits and Approvals

SEPA Categorical Exemption

The Port is the lead agency for threshold determinations for local permits and approvals for Port initiated projects. The project may comply with the regulations for a SEPA categorical exemption criteria for repair, remodelling, and maintenance activities per Washington Administrative Code (WAC) 197-11-800(3). A letter confirming the categorical exemption will be prepared by the Port. There is no public notice process associated with a SEPA Categorical Exemption. SEPA Categorical Exemptions are typically issued within 1 to 2 months.

If it is determined that a SEPA review is required a SEPA Checklist will be prepared and submitted to the Port. An Environmental Impact Statement level of review is not anticipated for the project.

SSDP

The City administers the Shoreline Master Program for projects occurring within the 200-foot shoreline environment. The project will be regulated under the City of Westport Shoreline Master Program (SMP; City of Westport 2017). The Project occurs within the High Intensity shoreline environment (City of Westport 2017). If a select phase or project is eligible an exemption request and form will be prepared and submitted to the City for review. SSDP exemptions are typically issued within 1 to 2 months.

If a select phase or project component is not eligible for a SSDP exemption a permit application will be submitted to the City for review. SSDPs are typically issued within 3 to 6 months.

Floodplain Compliance

The project must comply with City of Westport floodplain requirements due to its location within a floodplain. This will include complying with the FEMA development regulations and demonstrating no net loss of floodplain habitat and no impacts to adjacent properties in a Zero Rise Analysis. A Floodplain Compliance Memorandum will be prepared and submitted to demonstrate compliance with the City's floodplain regulations.

9. Economic Outcomes, Marketing Strategy

9.1. Target Economic Outcomes

- To retain existing in-water user base as reflected in annual moorage and guest moorage revenues.
- To retain or improve national ranking for commercial seafood landings by volume, and by value as a way to retain upland processor investment and employment.
- To support the tourism industry by providing appropriately sized moorage and launch facilities for the charter and recreational boating fleet.
- Retain and expand upland private investment and employment directly tied to moorage infrastructure.

9.2. Westport Marina Uplands and Moorage Basin Profile

TABLE 12: TOP CUSTOMERS BY REVENUE 2021

Customers: Uplands and Moorage
Ocean Companies – upland leases, outfall, moorage
Washington Crab – upland leases
CHARCA Vessels – moorage (transient)
RPMM – upland leases
Kathleen Barker – upland leases
Deep Sea Charters – moorage (annual)
Westport Seafoods/Cornman

TABLE 13: ANNUAL MOORAGE

Type of Vessel/User	**Number**
Non-Treaty Commercial vessels	163
Tribal, Commercial	26
Recreational vessels	126
Charter vessels	42
Other	8
Total Annual Agreements	**368**

Moorage Revenue to Support Operation:

- Annual Moorage = $660,755
- Transient Moorage = $410,800

9.3. Marketing Strategy

The Port will continue to market the marina moorage facilities and uplands as the planned modernization projects are being developed and implemented.

TABLE 14: SPECIFIC ACTIONS & TIMELINES FOR CURRENT AND PHASE 1 DEVELOPMENTS:

Phase	Action	Timeline	Implemented
0	Web based marketing of moorage facilities and reservations. Portofgraysharbor.com, dockwa.com	Continuous	Y
0	Social media marketing of Westport Marina on Facebook & Instagram	Continuous	Y
0	Newsletter to current and past moorage holders	Semi- Annually	Y
0	Regional radio spots highlighting moorage and recreational fishing at the Westport Marina	Annually	Y
1	Promote larger moorage slips: Past Moorage Holders, Seafood Processors Vessel owners	Near term	N

9.4. Economic Profile of Grays Harbor County

Median hourly wages in Grays Harbor County are 26% below the Washington State median hourly wage in 2020. This chronic low wage environment has created an economic burden on social services, education and health care industries in the county. The Port of Grays Harbor has been a positive contributor to both employment numbers and higher than median wage rates. Commercial fishing wage rates are above the county's median. Often independently owned, commercial fishing vessels are operated as small, family businesses.

TABLE 15: PRIVATE SECTOR MEDIAN HOURLY WAGE

Commercial Fishing Direct Jobs Wage Rate	**$26.27**
Grays Harbor County*	$22.82
Washington State*	$29.28

Source: https://esd.wa.gov/labormarketinfo/county-profiles/grays-harbor * 2020 figures.

Grays Harbor County consistently ranks in the top three highest unemployment rates in the State of Washington.

TABLE 16: COMPARISON OF UNEMPLOYMENT RATES, 3 YEARS

	2019	2020	2021
Grays Harbor County	7.1%	19.3%	7.6%
Washington State	4.4%	12.5%	5.3%
United States	3.6%	13.3%	5.8%

Source: https://esd.wa.gov/labormarketinfo/county-profiles/grays-harbor

Grays Harbor County population growth has lagged behind the State growth rate for the past 10 years.

TABLE 17: 10 YEAR COMPARISON OF POPULATION

	2010	2015	2020
Grays Harbor County	72,797	73,110	74,720
Washington State	6,724,540	7,061,410	7,656,200

Source: Washington State Office of Financial Management

9.5. Financial Projections

State and local revenue generated by this project occur in phases based upon the redevelopment of the floats.

The City of Westport sales tax rate is 8.9%, of which 6.5% is the State of Washington share. Construction activities related to the modernization of the marina infrastructure will be assessed sales tax. Sales tax collections are estimated at $560,762 for phase 1A, Remove and Replacement of Floats 19 & 21. It can be assumed that additional phases will be in the millions of dollars, generating additional local and state tax resources.

As a publicly owned property, this site will not generate real property taxes. Instead, the moorage holders exceeding 31 days in the Marina will include a charge of state leasehold tax in lieu of property taxes of 12.84%.

B&O taxes at the State and Local level may apply to activities that occur on the site. It is unknown at this time what those activities might generate so no projection has been developed.

Utility taxes will apply to the usage of electricity on site.

9.6. Measuring Success

The Port conducts quarterly financial reviews at the regularly scheduled Commission meetings to analyze the performance of each line of business. Data is collected monthly by the Port accounting department and compiled in a management report for the executive leadership team. Annual strategic planning workshops focus on the Westport Marina business division to identify trends in market conditions, financial and economic performance and to analyze existing policies and adjust strategies as needed. These regular meetings will allow the Commissioners, staff and stakeholders regular opportunities to access the success of the modernization and adjust accordingly.

In relationship to this Phase 1 of the Modernization Project (Phases 1A, 1B, 1C, and 1D), specific data used to measure success will be:

- Accommodation of additional, larger vessels moored,
- Retention of annual moorage contracts,
- Volume and value of commercial seafood landed in Westport as reported by NOAA,
- Retention of existing and new private upland investments and employment directly related to marina infrastructure.

10. Summary

Westport Marina is anticipated to be modernized in strategic 1-5 year, 5-12 year, and 12+ year projects, defined as Near-term, Mid-term, and Long-term. A redevelopment plan was developed including fourteen (14) projects broken into six (6) phases. This multi-phased approach includes projects classified into three (3) categories; Remove and Replacement, Rehabilitation, and No Change. This redevelopment plan identifies South Marina as the priority area, to be improved in conjunction with Mid Marina improvements. North Marina was identified as a future conceptual phase that will be re-evaluated closer to the start of project date. Though numbered consecutively, these phases may be implemented in a non-consecutive manner, dictated by funding opportunities and future marina needs. Phases 1, 2, and 3 will be permitted through a strategy of application for programmatic permits and exemptions as applicable. Prior to Phase 4, it is recommended that slip demand is reinvestigated.

Disclaimer

Moffatt & Nichol devoted effort consistent with (i) the level of diligence ordinarily exercised by competent professionals practicing in the area under the same or similar circumstances, and (ii) the time and budget available for its work, to ensure that the data contained in this report is accurate as of the date of its preparation. This study is based on estimates, assumptions and other information developed by Moffatt & Nichol from its independent research effort, general knowledge of the industry, and information provided by and consultations with the client and the client's representatives. No responsibility is assumed for inaccuracies in reporting by the Client, the Client's agents and representatives, or any third-party data source used in preparing or presenting this study. Moffatt & Nichol assumes no duty to update the information contained herein unless it is separately retained to do so pursuant to a written agreement signed by Moffatt & Nichol and the Client.

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This document may include "forward-looking statements." These statements relate to Moffatt & Nichol's expectations, beliefs, intentions or strategies regarding the future. These statements may be identified by the use of words like "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "project," "will," "should," "seek," and similar expressions. The forward-looking statements reflect Moffatt & Nichol's views and assumptions with respect to future events as of the date of this study and are subject to future economic conditions, and other risks and uncertainties. Actual and future results and trends could differ materially from those set forth in such statements due to various factors, including, without limitation, those discussed in this study. These factors are beyond Moffatt & Nichol's ability to control or predict. Accordingly, Moffatt & Nichol makes no warranty or representation that any of the projected values or results contained in this study will actually be achieved.

This study is qualified in its entirety by, and should be considered in light of, these limitations, conditions and considerations.

APPENDIX A:

WESTPORT MARINA PHASED CONSTRUCTION COST

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
South Marina - Project P1A
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 535,000
SELECTIVE DEMOLITION				$ 452,550
Docks - Concrete	SF	14,520	$ 15	$ 217,800
Docks - Salvage	SF	3,630	$ 25	$ 90,750
Treated Timber Pile	EA	55	$ 2,000	$ 110,000
Steel Pile	EA	16	$ 500	$ 8,000
Gangway	EA	2	$ 1,000	$ 2,000
Abutment Pier	SF	240	$ 100	$ 24,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 2,209,500
Furnish & Install Float - Main Walkway, commerical slips	SF	11,475	$ 180	$ 2,065,500
Furnish & Install Float - 30' Transient slips	SF	900	$ 160	$ 144,000
GUIDE PILING				$ 244,400
Furnish & Install Steel Guide Pile	EA	31	$ 8,000	$ 244,400
ELECTRICAL				$ 230,000
On-dock Elec Service	LS	1	$ 230,000	$ 230,000
MECHANICAL				$ 136,000
Water	LS	1	$ 91,000	$ 91,000
Fire	LS	1	$ 45,000	$ 45,000
			Construction Subtotal	$ 4,097,450
Engineering/Design/Permitting			10%	$ 410,000
Sales Tax (Allow.)			9%	$ 369,000
Construction Administration / Construction Management (Allow)			4%	$ 164,000
			PROJECT SUBTOTAL	$ 5,040,500
Contingency			25.0%	$ 1,260,200
			PROJECT TOTAL	$ 6,300,700

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is a 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Demolition cost was based on area transient moorage and adjacent main walk.
6 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
7 Utilities for transient slips are assumed to be water only.
8 Calculated float areas are based on nominal dimensions.
9 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
Float costs for the main walkway are based on a more robust system to address the commercial users on the float. Float costs for the
10 fingers are based on a system that will serve recreational boaters, and lesser demands on the float system.
11 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
South Marina - Project P1C
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 972,000
SELECTIVE DEMOLITION				$ 489,900
Docks - Concrete	SF	15,590	$ 15	$ 233,900
Docks - Salvage	SF	3,900	$ 25	$ 97,500
Treated Timber Pile	EA	58	$ 2,000	$ 116,000
Steel Pile	EA	33	$ 500	$ 16,500
Gangway	EA	2	$ 1,000	$ 2,000
Abutment Pier	SF	240	$ 100	$ 24,000
GANGWAY & ABUTMENT				$ 280,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 80,000	$ 80,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 4,348,800
Furnish & Install Float	SF	24,160	$ 180	$ 4,348,800
GUIDE PILING				$ 447,333
Furnish & Install Steel Guide Pile	EA	56	$ 8,000	$ 447,333
ELECTRICAL				$ 425,000
On-dock Elec Service	LS	1	$ 425,000	$ 425,000
MECHANICAL				$ 486,000
Water	LS	1	$ 326,000	$ 326,000
Fire	LS	1	$ 160,000	$ 160,000
			Construction Subtotal	$ 7,449,100
Engineering/Design/Permitting			10%	$ 745,000
Sales Tax (Allow.)			9%	$ 670,500
Construction Administration / Construction Management (Allow)			4.0%	$ 298,000
			PROJECT SUBTOTAL	$ 9,162,600
Contingency			25%	$ 2,290,700
			PROJECT TOTAL	$ 11,453,300

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on robust system for commerical slips
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
MId Marina - ProjectP1B
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 118,000
SELECTIVE DEMOLITION				$ 26,200
Docks - Concrete	SF	480	$ 15	$ 7,200
Docks - Salvage	SF		$ 25	$ -
Treated Timber Pile	EA	3	$ 2,000	$ 6,000
Steel Pile	EA	-	$ 500	$ -
Gangway	EA	1	$ 1,000	$ 1,000
Abutment Pier	SF	120	$ 100	$ 12,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 417,600
Furnish & Install Float	SF	2,320	$ 180	$ 417,600
GUIDE PILING				$ 24,000
Furnish & Install Steel Guide Pile	EA	3	$ 8,000	$ 24,000
ELECTRICAL				$ 11,700
On-dock Elec Service	LS	1	$ 11,700	$ 11,700
MECHANICAL				$ 13,000
Water	LS	1	$ 8,700	$ 8,700
Fire	LS	1	$ 4,300	$ 4,300
			Construction Subtotal	$ 900,500
Engineering/Design/Permitting			10%	$ 90,100
Sales Tax (Allow.)			9%	$ 81,100
Construction Administration / Construction Management (Allow)			4%	$ 36,100
			PROJECT SUBTOTAL	$ 1,107,800
Contingency			25%	$ 277,000
			PROJECT TOTAL	$ 1,384,800

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on robust system for commerical slips
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
MId Marina - ProjectP1D
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 259,000
SELECTIVE DEMOLITION				$ 188,000
Docks - Concrete	SF	5,900	$ 15	$ 88,500
Docks - Salvage	SF	1,500	$ 25	$ 37,500
Treated Timber Pile	EA	22	$ 2,000	$ 44,000
Steel Pile	EA	10	$ 500	$ 5,000
Gangway	EA	1	$ 1,000	$ 1,000
Abutment Pier	SF	120	$ 100	$ 12,000
GANGWAY & ABUTMENT				$ 280,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 80,000	$ 80,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 672,000
Rehabilitate & Install Float	SF	6,720	$ 100	$ 672,000
GUIDE PILING				$ 224,400
Furnish & Install Steel Guide Pile	EA	25	$ 9,000	$ 224,400
ELECTRICAL				$ 163,300
On-dock Elec Service	LS	1	$ 163,300	$ 163,300
MECHANICAL				$ 194,000
Water	LS	1	$ 130,000	$ 130,000
Fire	LS	1	$ 64,000	$ 64,000
			Construction Subtotal	$ 1,980,700
Engineering/Design/Permitting			10%	$ 198,100
Sales Tax (Allow.)			9%	$ 178,300
Construction Administration / Construction Management (Allow)			4%	$ 79,300
			PROJECT SUBTOTAL	$ 2,436,400
Contingency			25%	$ 609,100
			PROJECT TOTAL	$ 3,045,500

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on reuse of salvaged floats that are rehabilitated with new thru rods, walers and tri-frames.
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P2A
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 95,000
SELECTIVE DEMOLITION				$ 49,600
Docks - Concrete	SF	736	$ 15	$ 11,000
Docks - Salvage	SF	184	$ 25	$ 4,600
Treated Timber Pile	EA	4	$ 2,000	$ 8,000
Steel Pile	EA		$ 500	$ -
Gangway	EA	2	$ 1,000	$ 2,000
Abutment Pier	SF	240	$ 100	$ 24,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 199,800
Furnish & Install Float	SF	1,110	$ 180	$ 199,800
GUIDE PILING				$ 32,000
Furnish & Install Steel Guide Pile	EA	4	$ 8,000	$ 32,000
ELECTRICAL				$ 28,500
On-dock Elec Service	LS	1	$ 28,500	$ 28,500
MECHANICAL				$ 29,700
Water	LS	1	$ 19,900	$ 19,900
Fire	LS	1	$ 9,800	$ 9,800
			Construction Subtotal	$ 724,600
Engineering/Design/Permitting			10%	$ 72,500
Sales Tax (Allow.)			9%	$ 65,300
Construction Administration / Construction Management (Allow)			4%	$ 29,000
			PROJECT SUBTOTAL	$ 891,400
Contingency			25%	$ 222,900
			PROJECT TOTAL	$ 1,114,300

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on robust system for commerical slips
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P2B
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 582,000
SELECTIVE DEMOLITION				$ 442,300
Docks - Concrete	SF	14,730	$ 15	$ 221,000
Docks - Salvage	SF	3,690	$ 25	$ 92,300
Treated Timber Pile	EA	44	$ 2,000	$ 88,000
Steel Pile	EA	30	$ 500	$ 15,000
Gangway	EA	2	$ 1,000	$ 2,000
Abutment Pier	SF	240	$ 100	$ 24,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 1,849,000
Rehabilitate & Install Float	SF	18,490	$ 100	$ 1,849,000
GUIDE PILING				$ 422,400
Furnish & Install Steel Guide Pile	EA	53	$ 8,000	$ 422,400
ELECTRICAL				$ 426,500
On-dock Elec Service	LS	1	$ 426,500	$ 426,500
MECHANICAL				$ 443,300
Water	LS	1	$ 297,100	$ 297,100
Fire	LS	1	$ 146,200	$ 146,200
			Construction Subtotal	$ 4,455,500
Engineering/Design/Permitting			10%	$ 445,600
Sales Tax (Allow.)			9%	$ 401,000
Construction Administration / Construction Management (Allow)			4%	$ 178,300
			PROJECT SUBTOTAL	$ 5,480,400
Contingency			25%	$ 1,370,100
			PROJECT TOTAL	$ 6,850,500

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on reuse of salvaged floats that are rehabilitated with new thru rods, walers and tri-frames.
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P3
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 657,000
SELECTIVE DEMOLITION				$ 320,900
Docks - Concrete	SF	9,760	$ 15	$ 146,400
Docks - Salvage	SF	2,440	$ 25	$ 61,000
Treated Timber Pile	EA	41	$ 2,000	$ 82,000
Steel Pile	EA	11	$ 500	$ 5,500
Gangway	EA	2	$ 1,000	$ 2,000
Abutment Pier	SF	240	$ 100	$ 24,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 2,481,280
Furnish & Install Float	SF	15,508	$ 160	$ 2,481,280
GUIDE PILING				$ 498,800
Furnish & Install Steel Guide Pile	EA	62	$ 8,000	$ 498,800
ELECTRICAL				$ 470,000
On-dock Elec Service	LS	1	$ 470,000	$ 470,000
MECHANICAL				$ 313,000
Water	LS	1	$ 210,000	$ 210,000
Fire	LS	1	$ 103,000	$ 103,000
			Construction Subtotal	$ 5,030,980
Engineering/Design/Permitting			10%	$ 503,100
Sales Tax (Allow.)			9%	$ 452,800
Construction Administration / Construction Management (Allow)			4%	$ 201,300
			PROJECT SUBTOTAL	$ 6,188,180
Contingency			25%	$ 1,547,100
			PROJECT TOTAL	$ 7,735,300

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on a system that will serve recreational boaters, and lesser demands on the float system.
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P4A
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 174,000
SELECTIVE DEMOLITION				$ 67,300
Docks - Concrete	SF	768	$ 15	$ 11,500
Docks - Salvage	SF	192	$ 25	$ 4,800
Treated Timber Pile	EA	6	$ 2,000	$ 12,000
Steel Pile	EA		$ 500	$ -
Gangway	EA	3	$ 1,000	$ 3,000
Abutment Pier	SF	360	$ 100	$ 36,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 713,600
Furnish & Install Float	SF	4,460	$ 160	$ 713,600
GUIDE PILING				$ 88,000
Furnish & Install Steel Guide Pile	EA	11	$ 8,000	$ 88,000
ELECTRICAL				$ -
On-dock Elec Service	LS	-	$ -	$ -
MECHANICAL				$ -
Water	LS	-	$ -	$ -
Fire	LS	-	$ -	$ -
			Construction Subtotal	$ 1,332,900
Engineering/Design/Permitting			10%	$ 133,300
Sales Tax (Allow.)			9%	$ 120,000
Construction Administration / Construction Management (Allow)			4%	$ 53,400
			PROJECT SUBTOTAL	$ 1,639,600
Contingency			25%	$ 409,900
			PROJECT TOTAL	$ 2,049,500

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on a system that will serve recreational boaters, and lesser demands on the float system.
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P4B
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 322,000
SELECTIVE DEMOLITION				$ 361,500
Docks - Concrete	SF	9,600	$ 15	$ 144,000
Docks - Salvage	SF	2,400	$ 25	$ 60,000
Treated Timber Pile	EA	57	$ 2,000	$ 114,000
Steel Pile	EA	9	$ 500	$ 4,500
Gangway	EA	3	$ 1,000	$ 3,000
Abutment Pier	SF	360	$ 100	$ 36,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 501,200
Rehabilitate & Install Float	SF	5,012	$ 100	$ 501,200
GUIDE PILING				$ 241,333
Furnish & Install Steel Guide Pile	EA	30	$ 8,000	$ 241,333
ELECTRICAL				$ 392,200
On-dock Elec Service	LS	1	$ 392,200	$ 392,200
MECHANICAL				$ 354,400
Water	LS	1	$ 237,600	$ 237,600
Fire	LS	1	$ 116,800	$ 116,800
			Construction Subtotal	$ 2,462,633
Engineering/Design/Permitting			10%	$ 246,300
Sales Tax (Allow.)			9%	$ 221,700
Construction Administration / Construction Management (Allow)			4%	$ 98,600
			PROJECT SUBTOTAL	$ 3,029,233
Contingency			25%	$ 757,400
			PROJECT TOTAL	$ 3,786,700

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on reuse of salvaged floats that are rehabilitated with new thru rods, walers and tri-frames.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P5
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 411,000
SELECTIVE DEMOLITION				$ 206,300
Docks - Concrete	SF	6,531	$ 15	$ 98,000
Docks - Salvage	SF	1,633	$ 25	$ 40,800
Treated Timber Pile	EA	27	$ 2,000	$ 54,000
Steel Pile	EA	1	$ 500	$ 500
Gangway	EA	1	$ 1,000	$ 1,000
Abutment Pier	SF	120	$ 100	$ 12,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 1,449,600
Furnish & Install Float	SF	9,060	$ 160	$ 1,449,600
GUIDE PILING				$ 253,600
Furnish & Install Steel Guide Pile	EA	32	$ 8,000	$ 253,600
ELECTRICAL				$ 197,200
On-dock Elec Service	LS	1	$ 197,200	$ 197,200
MECHANICAL				$ 337,300
Water	LS	1	$ 226,200	$ 226,200
Fire	LS	1	$ 111,100	$ 111,100
			Construction Subtotal	$ 3,145,000
Engineering/Design/Permitting			10%	$ 314,500
Sales Tax (Allow.)			9%	$ 283,100
Construction Administration / Construction Management (Allow)			4%	$ 125,800
			PROJECT SUBTOTAL	$ 3,868,400
Contingency			25%	$ 967,100
			PROJECT TOTAL	$ 4,835,500

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on a system that will serve recreational boaters, and lesser demands on the float system.

Port of Grays Harbor - WESTPORT MARINA MODERNIZATION
Mid Marina - Project P6D
29-Sep-22

Description	Unit	Quantity	Unit Cost 2022 $	Total Cost 2022 $
MOBILIZATION	ALLOW	1		$ 122,000
SELECTIVE DEMOLITION				$ 65,700
Docks - Concrete	SF	830	$ 15	$ 12,500
Docks - Salvage	SF	208	$ 25	$ 5,200
Treated Timber Pile	EA	11	$ 2,000	$ 22,000
Steel Pile	EA		$ 500	$ -
Gangway	EA	2	$ 1,000	$ 2,000
Abutment Pier	SF	240	$ 100	$ 24,000
GANGWAY & ABUTMENT				$ 290,000
Furnish & Install 80' Aluminum Gangway	EA	1	$ 90,000	$ 90,000
Abutment Pier	LS	1	$ 200,000	$ 200,000
MARINA FLOAT SYSTEM				$ 400,000
Furnish & Install Float	SF	2,500	$ 160	$ 400,000
GUIDE PILING				$ 56,000
Furnish & Install Steel Guide Pile	EA	7	$ 8,000	$ 56,000
ELECTRICAL				$ -
On-dock Elec Service	LS	-	$ -	$ -
MECHANICAL				$ -
Water	LS	-	$ -	$ -
Fire	LS	-	$ -	$ -
			Construction Subtotal	$ 933,700
Engineering/Design/Permitting			10%	$ 93,400
Sales Tax (Allow.)			9%	$ 84,100
Construction Administration / Construction Management (Allow)			4%	$ 37,400
			PROJECT SUBTOTAL	$ 1,148,600
Contingency			25%	$ 287,200
			PROJECT TOTAL	$ 1,435,800

ASSUMPTIONS/NOTES:

1 All Estimates are in 2022 USD.
2 Mobilization is an 15% allowance of the construction subtotal cost.
3 Demolition of existing floats include an allowance to salvage a portion of the docks
4 No costs for localized rehabilitation of the existing seawall are included.
5 Existing abutment pier is supported by treated timber piling; demolition cost includes disposal at an approved landfill.
6 Calculated float areas are based on nominal dimensions.
7 Guide Pile Costs based on 60' long 12" diameter, galvanized steel piling.
8 Float costs are based on a system that will serve recreational boaters, and lesser demands on the float system.
9 New abutment pier structure will be designed to meet seismic criteria per local building code requirements.

APPENDIX B:

PORT OF GRAYS HARBOR
WESTPORT MARINA DEMAND ANALYSIS
(REVISED FINAL REPORT)

Port of Grays Harbor
Westport Marina Demand Analysis
Revised FINAL REPORT

PREPARED FOR

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January 8, 2020

BST Associates
Market Research & Strategic Planning

Port of Grays Harbor Westport Marina Demand Analysis Final Report

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Port of Grays Harbor Westport Marina Demand Analysis FINAL Report

1 EXECUTIVE SUMMARY

1.1 PURPOSE OF THE STUDY

The existing Westport Marina Boat Basin Master Plan was completed for the Port of Grays Harbor in December 2009, Reid Middleton and BST Associates. Some components of the plan have been accomplished while others remain uncompleted. The Port is currently re-evaluating what projects should move forward.

BST Associates was retained by the Port of Grays Harbor to update the demand assessment for in-water and shoreside facilities; the findings of this analysis are presented in this report. This document will help guide the future of the Westport Marina but other steps will need to be undertaken, including:

- A survey of tenant needs and facility usage patterns,
- A design assessment of proposed projects, including layouts and cost estimates, and
- A financial plan that documents funding sources and timing of project development.

This chapter summarizes findings of the Market Demand Update and provides a context for moving forward.

1.2 FINDINGS

The demand for in-water and upland uses are summarized below. First, it is instructive to review the improvements that have been undertaken in the recent past.

1.2.1 Recent Improvements

Approximately $8.6 million in capital improvements were undertaken at Westport Marina between 2008 and 2019. Approximately half of these improvements were funded by the Port of Grays Harbor and half from outside sources (local, state and federal grants). One of these improvements, dredging of the marina basin, will be completed in 2020.

Projects during this time period included:

- 2008 Equipment acquisition, marina pump-out replacement, Master Plan
- 2009 Boat launch float rehab
- 2010 Equipment acquisition, marina float 17 restroom roof rehab
- 2011 Viewing tower replacement, marina office roof replacement
- 2012 Video surveillance
- 2014 Firecracker point outfall, float 17 electrical upgrade
- 2014 Video surveillance, Yearout Drive lot clearing/grading

- 2015 Equipment shed expansion, parking lot improvements
- 2016 Floats 9, 19 & 21 electrical upgrades
- 2017 Bankline reconstruction, computer server, float Signs, new Marina Management Software
- 2019 Boat launch parking lot improvements (in process), Float 20 gangway rehab, float lighting improvements, garbage platform, marina dredging (in process), restroom construction-across from Float 9 (in process) and Yearout Drive paving. (See Figure 1-1)

Figure 1-1: Port Investments in Westport Marina (2008-2020)

1.2.2 Socio-economic Trends

This section briefly reviews socio-economic trends impacting growth in Westport.

Grays Harbor County and Westport experienced modest population growth over the past decade, and growth is expected to continue at a slow pace.

Covered employment in Grays Harbor County increased rapidly between 2002 and 2008, but this growth was interrupted by the recession that started in 2008[1]. By 2018 employment had rebounded, with most of the growth in occurring the services and health care sectors. Employment in Grays Harbor is projected to increase by approximately 2,825 covered jobs between 2017 and 2027 (annual growth of 1.2% per year).

In Westport the number of jobs grew from 844 in 2002 to 1,246 in 2008, with most of the growth occurring in manufacturing (boat building/repair and food processing), business services, transportation/warehousing and accommodations/food services. The 2008 recession also had a profound negative effect on Westport that lingered through 2016[2], and most of the job growth between 2002 and 2008 was eliminated, particularly in the manufacturing sector. From 2008 to 2016, job growth centered in wholesale and retail trade, transportation/warehousing and business services.

Westport is home to three of the County's largest private employers: Westport Shipyard, Ocean Gold and Washington Crab Producers.

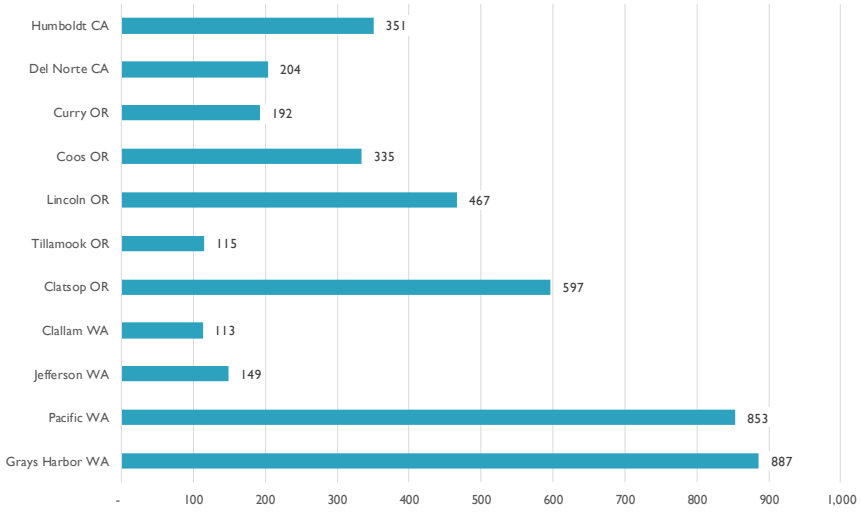
[1] Covered employment consists of jobs subject to unemployment insurance coverage.

[2] 2016 was the last year for which data at the City level is available for this report.

NOAA's Office of Coastal Management has developed a tool (ENOW)[3] to identify the trends associated with the ocean economy at the county level. The competitive region in which Westport is located consists of coastal counties from Northern California to Clallam County. In this region, Grays Harbor County and Pacific County had the largest average employment in "living resources" from 2005 to 2016. (Living resources includes fishing, seafood processing, and fish and seafood markets).

Most of the living resources jobs in Grays Harbor County are either located in Westport or are dependent on products that originate in Westport. (See Figure 1-2).

Figure 1-2: Employment in Living Resources (Average 2005-2016)



The ENOW data also suggests that Grays Harbor has underperformed, however, relative to competing regions to the north and south:

- Ocean economy[4] employment in Grays Harbor county declined from 1,608 in 2005 to 1,384 in 2016, or at -1.4% per year, while employment increased in most other areas.
- Ocean economy GDP in Grays Harbor county declined from $108.2 million in 2005 to $105.6 million in 2016, or at -0.2% per year, while GDP increased in most other areas.

Factors that contributed to the relative decline in Grays Harbor County included improvements in other regions, higher levels productivity from consolidation and automation, and other factors. Despite this relative decline, Grays Harbor County still the some of the highest ocean economy employment in the competitive region.

1.2.3 Fishing Trends and Outlook

According to NOAA Fisheries, Westport was the 11th largest port in the United States in terms of the value of fish landings in 2017, and has been one of the top 20 U.S. ports since 2002[5]. Major species landed include hake, sardines, crab, and shrimp. Hake is by far the largest-volume species fished, but

[3] Economics: National Ocean Watch

[4] Includes living resources, tourism and recreation and other sectors of the ocean economy.

[5] NOAA Fisheries web page. https://foss.nmfs.noaa.gov/apexfoss/f?p=215:200:10521511197547::NO:::

crab has a much higher value. In general, most of the commercially harvested fisheries on the Washington Coast are stable and healthy or are in recovery. However, NOAA Fisheries revised its list of overfishing and overfished species in 2018, with concern focused on salmon, dark blotched rockfish and Pacific Ocean perch.

Westport is by far the largest fishing port in Washington, accounting for 28% of landed value and 72% of landed weight. Westport has the highest value of fish landings in the Pacific Northwest, and is tied with Astoria in landed weight.

1.2.4 Issues of Concern

The Washington Department of Ecology recently lead an effort to develop a marine spatial plan (MSP) for Washington's Pacific coast.[6] The plan was developed in coordination with a number of agencies, and engaged coastal stakeholders, the public, and local, tribal and federal governments. Issues of concern that were identified in this effort included:

- Factors affecting the fishing sector include barriers to entry and success, limitations in use of space, ocean acidification, oil industry conflict, overfished species, potential for concentration of ownership, regulatory uncertainty, salmon production/survivability and laws/regulations limiting catch.
- Factors affecting the fish processing industry include infrastructure issues related to whether water or byproduct use in the processing process will overwhelm existing infrastructure; a decline in wholesale prices for seafood; major expansion of the onshore Pacific whiting fishery; horizontal integration of processors and consolidation of processing plants in fewer locations; vertical integration into distribution and harvesting operations; and return of small processors to offering specialty products in niche markets.

1.2.5 Future prospects

Looking to the future, a recent analysis by the U.S. Global Change Research Program identified several continuing concerns:

- "The health of ocean ecosystems, specifically disruptions by increasing global temperatures through the loss of iconic and highly valued habitats and changes in species composition and food web structure.
- "Marine fisheries and fishing communities are at high risk from climate-driven changes in the distribution, timing, and productivity of fishery-related species (ocean warming, acidification, and deoxygenation are projected to increase these changes in fishery-related species, reduce catches in some areas, and challenge effective management of marine fisheries and protected species).
- "Marine ecosystems and the coastal communities that depend on them are at risk of significant impacts from extreme events with combinations of very high temperatures, very low oxygen levels, or very acidified conditions."[7]

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[6] https://fortress.wa.gov/ecy/publications/documents/1706027.pdf

[7] Pershing, A.J., R.B. Griffis, E.B. Jewett, C.T. Armstrong, J.F. Bruno, D.S. Busch, A.C. Haynie, S.A. Siedlecki, and D. Tommasi, 2018: Oceans and Marine Resources. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC,

This study concluded that potential catch along most of the U.S. West Coast could decline by up to 10 percent. The largest expected decline is a 22 percent reduction in salmon harvest in Washington state by the end of the century. The southern half of the British Columbia coast and the very northern portion of the Washington coast could experience a decline of 10 percent to 20 percent during this period. However, the Gulf of Alaska harvest is projected to increase by approximately 10 percent, and the Bering Sea catch potential may increase by approximately 46 percent.

1.2.6 Demand for Moorage

The Westport Marina currently offers 580 moorage spaces, of which 346 spaces are leased to annual moorage tenants. Transient boating activity can push utilization to as much as 80% to 90%, but this occurs on just a handful of peak days. For most of the year, the marina has more slips than needed.

There are currently more slips than are needed to meet demand. If the Marina is reconfigured in the future, the number of slips is likely to decline but the lineal footage of moorage may remain about the same.

The existing configuration of the marina is out of alignment with the market, with many slips that are too short and narrow to meet the needs of the existing fleet. In addition, the electrical power available at slips is insufficient for the existing tenants. The physical condition of floats is poor, with visible damage to floats, fenders and electrical systems.

Reconfiguration of the Marina should proceed in a financially prudent manner that takes into account the existing condition of the marina, with replacement focusing on those slips/floats that have reached the end of their useful lives.

1.2.7 Demand for Upland Facilities

Potential upland facilities could include: a public hoist, work dock, haul-out facility / boatyard, and storage (gear and boat).

1.2.7.1 Boatyard / Haul-Out Facility

Interviews with fishermen indicated some demand for a boatyard. The Port would face a number of difficulties in providing a repair facility, however, including: competition from existing yards, lack of qualified workers in the area, constraints on do-it-yourself boatyards, and poor financial performance. A boat repair facility at Westport would most likely need to be subsidized by the Port.

There is limited upland space for a boatyard in Westport. The Port might be able to develop a small boatyard served by a trailer. Such a facility would likely require a washdown facility, which would increase the expense.

As an alternative, the Port could work with existing operators in the area to maintain and enhance local and/or regional capabilities, or simply allow market forces to work.

1.2.7.2 Storage (Gear & Boat)

The Port provides open storage at a gravel yard on Fire Cracker Point, which is currently full. Several private operators also provide storage, but these facilities are also essentially full.

USA, pp. 353–390. doi: 10.7930/NCA4.2018.CH9 On the Web: https://nca2018.globalchange.gov/chapter/oceans; page 354

The Port could consider replacing the existing gravel storage lot with facilities located away from Firecracker Point. Based upon the demand for storage, this investment is likely to be financially sound. This would also make the existing yard site available for a higher and better use, i.e. one that generates investment, jobs, and community benefits.

1.2.7.3 Hoists

There are seven hoists available for public-use in Westport, but these are owned and controlled by the private processors. The Port could potentially provide an additional hoist in an alternate location (at Westport or in Hoquiam), but the Port would likely have to subsidize the purchase and the operation / maintenance of the hoist.

Essentially all other competitive ports in the regions provide public-use hoists, most of which are publicly subsidized.

1.2.7.4 Work Dock

A work dock represents a much greater expense than a hoist. It is unlikely that a dock would generate significant revenue, so the capital cost and O&M costs of providing the dock would be borne by the Port and subsidized by other Port operations and/or local taxpayers.

1.3 CONTEXT FOR DEVELOPMENT

The context for development takes into account the importance of Westport Marina and the Port's guiding principles for development.

1.3.1 Importance of Westport Marina

The commercial fishing industry is one of the main economic drivers in Westport. The marina is home to 185 commercial fishing vessels, several seafood processors, and a number of seafood buyers. A significant number of transient fishing vessels also use the marina. The fish processing industry is strong, most fisheries are well-managed, and Westport has the highest commercial fish landings in the Pacific Northwest.

Recreational fishing is also important to the local economy. The marina is homeport for 29 charter fishing boats as well as 112 recreational fishing boats. During peak fishing season the marina and boat ramp handle hundreds of additional recreational vessels. Tourism from recreational fishing is a major contributor to the region's economy.

Westport is also home to a world-class builder of mega-yachts, which are sold to customers throughout the United States and the world.

Facilities at the Westport Marina are nearing the end of their design life, and will have to be replaced in the near future. This will be expensive, and moorage rates are unlikely to cover the cost of replacement. Replacement of these marina facilities should also include reconfiguration of the moorage, since the composition of the commercial fleet no longer matches the existing moorage.

Westport Marina generates a large portion of the economic impacts of the Port District, but generates a relatively small portion of the operating revenues of the Port:

- The Westport Marina (including Industrial Properties in Westport) accounted for approximately 5.3% of the Port's annual operating revenues in 2018.[8]
- The most recent economic impact report for the Port of Grays Harbor estimated that the Westport Marina accounted for a significant portion of the impacts in the Port district:
  - 40% of total jobs,
  - 31% of total personal income,
  - 40% of business revenues, and
  - 31% of state and local taxes.[9]

1.3.2 Port Strategy for Guiding Redevelopment

Looking forward, future improvements to Westport Marina will be guided by the Port's mission statement and business model, as well as by the momentum of improvements to the Marina undertaken in the last decade.

> The Port's mission statement is: "To best utilize our resources to facilitate, enhance and stimulate international trade, economic development and tourism for the betterment of the region."

The diverse infrastructure and public assets of the Port of Grays Harbor have created opportunities for economic growth and stability for the Grays Harbor community by attracting investment that results in job development and economic activity for the region. The Port's priority is to generate economic activity in a sustainable environment that improves the quality of life in Grays Harbor County, measuring success by the amount of investment attracted to the region, the quality and quantity of jobs retained and created and the improvement of quality of life for the citizens through public access, economic opportunity and environmental stewardship.

Key business strategies include:

- Protect and responsibly manage Port assets,
- Retain and grow existing tenants,
- Provide fair and consistent policies for all users,
- Recruit compatible, yet diverse users,
- Foster partnerships, both public and private, that invest in public infrastructure to generate private investment in facilities and operations,
- Maintain existing infrastructure,
- Promote local job creation, and
- Investment, jobs, community.

[8] Port of Grays Harbor Financial Statement for 2018

[9] The 2013 Economic Impact of the Port of Grays Harbor, Martin Associates, 2014

2 WESTPORT PROFILE

This chapter reviews population, employment, and income trends in Grays Harbor County and the City of Westport, as well as factors that impact the use of Westport Marina.

2.1 SOCIO-ECONOMIC TRENDS & FORECASTS

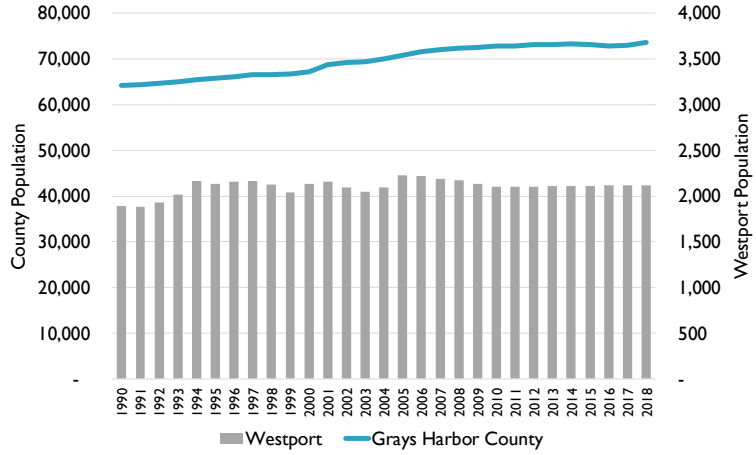
2.1.1 Population Trends & Forecast

The population of Westport was estimated to be 2,120 in 2018, and the population of Grays Harbor County was estimated to be 73,610.

Westport's population grew by nearly 11% between 1990 and 2018, or by 228 residents. The average annual rate of growth over this period was less than 0.5% per year. Most of this growth occurred during the early 1990s, when the population climbed from 1,892 in 1990 to approximately 2,150 from 1994 through 1997. After 1997 Westport's population fluctuated up and down by approximately 100 before peaking at approximately 2,200 from 2005 through 2007. The population dropped to slightly more than 2,100 in 2009, and remained essentially unchanged from 2009 through 2018. (See Figure 2-1).

The population of Grays Harbor County grew by nearly 13% between 2000 and 2018, climbing from approximately 64,200 to 73,600 (i.e. an increase of more than 9,400). The county population grew more slowly than that of Westport during the 1990s, but grew substantially faster during the 2000s. County population growth was also steadier than that of Westport, and did not experience the same fluctuations in the late 1990 and early 2000s. Growth in both Grays Harbor County and in Westport was very slow between 2010 and 2018, averaging less than 0.15% per year.

Figure 2-1: Westport Population Trends

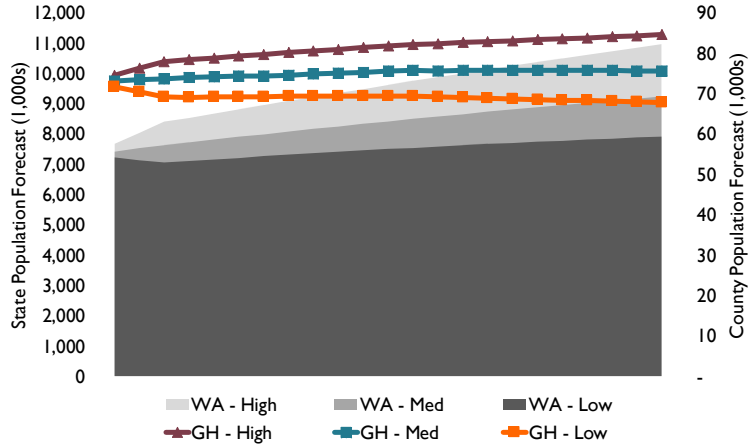


Source: Washington Office of Financial Management

The population of Grays Harbor is projected to continue to grow slowly over the next two decades. According to a recent forecast from the Washington Office of Financial Management, under the medium forecast the population of Grays Harbor is projected to grow at an average rate of 0.1% per year. Under this forecast total population growth is projected to be 3.2% between 2018 and 2040, or approximately 2,300 residents. Under the low forecast the population declines at -0.3% per year, and by 2040 is 3,900 lower than in 2018. Under the high forecast, average annual population growth is 0.6%, and the county population grows by 10,000 by 2040. (See Figure 2-2).

The Washington State population is projected to grow much faster than that of Grays Harbor County. Average annual growth rates range from 0.4% to 1.6%, and total growth ranges from 9.6% to 43.1%. Under the low projection the state adds 692,000 new residents, under the medium projection the population increases by more than 1.8 million, and under the high forecast the population grows by 3.3 million.

Figure 2-2: Population Forecast

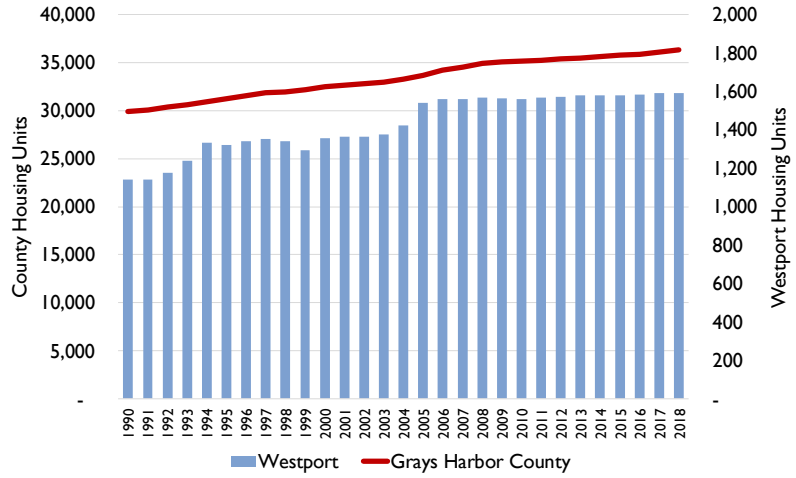


Source: Washington Office of Financial Management

2.1.2 Housing Trends & Forecast

The number of housing units in Westport grew in most years between 1990 and 2005, but has seen little change since 2005. The number of housing units increased from approximately 1,150 in 1990 to nearly 1,550 in 2005, an increase of 35%. By 2018 the housing inventory had grown by just 51 units since 2005, a change of approximately 3%. (See Figure 2-3).

Figure 2-3: Housing Inventory Trends



Source: Washington Office of Financial Management

Westport's housing inventory grew much faster than that of Grays Harbor County between 1990 and 2005, but grew more slowly between 2005 and 2018. Housing in Grays Harbor County grew less than

13% between 1990 and 2005, compared with 35% for Westport. Between 2005 and 2018, Grays Harbor county's housing inventory grew by 8%, compared to 3% for Westport.

The housing inventory in Westport grew by 32 units between 2010 and 2018, or a total of 2%. Single-family units grew by 12, multi-family units grew by 13, and mobile homes and other grew by 7 units. (See Table 2-1).

Single-family units account for approximately two-thirds of the housing inventory in Westport, a share that has not changed substantially since 2010. In comparison, in Grays Harbor County single-family units account for more than 71% of all housing.

Multi-family units account for approximately one-quarter of all housing in Westport, compared to a county average of approximately 13%. Mobile homes and other special housing types account for approximately 10% of housing in Westport and 15% countywide. As with single family units, these shares have not changed substantially since 2010.

Table 2-1: Housing Unit Inventory in Westport & Grays Harbor County

	Westport				Grays Harbor County			
Year	1 Unit	2+ Units	MH/ Spec	Total	1 Unit	2+ Units	MH/ Spec	Total
Units								
2010	1,028	373	160	1,561	24,955	4,867	5,344	35,166
2011	1,027	381	160	1,568	25,047	4,857	5,361	35,265
2012	1,030	385	159	1,574	25,168	4,850	5,380	35,398
2013	1,033	385	160	1,578	25,279	4,851	5,385	35,515
2014	1,032	385	162	1,579	25,401	4,853	5,398	35,652
2015	1,034	385	162	1,581	25,495	4,858	5,406	35,759
2016	1,035	385	165	1,585	25,608	4,867	5,433	35,908
2017	1,038	386	167	1,591	25,779	4,867	5,470	36,116
2018	1,040	386	167	1,593	26,006	4,867	5,481	36,354
Share of Total								
2010	65.9%	23.9%	10.2%	100.0%	71.0%	13.8%	15.2%	100.0%
2011	65.5%	24.3%	10.2%	100.0%	71.0%	13.8%	15.2%	100.0%
2012	65.4%	24.5%	10.1%	100.0%	71.1%	13.7%	15.2%	100.0%
2013	65.5%	24.4%	10.1%	100.0%	71.2%	13.7%	15.2%	100.0%
2014	65.4%	24.4%	10.3%	100.0%	71.2%	13.6%	15.1%	100.0%
2015	65.4%	24.4%	10.2%	100.0%	71.3%	13.6%	15.1%	100.0%
2016	65.3%	24.3%	10.4%	100.0%	71.3%	13.6%	15.1%	100.0%
2017	65.2%	24.3%	10.5%	100.0%	71.4%	13.5%	15.1%	100.0%
2018	65.3%	24.2%	10.5%	100.0%	71.5%	13.4%	15.1%	100.0%

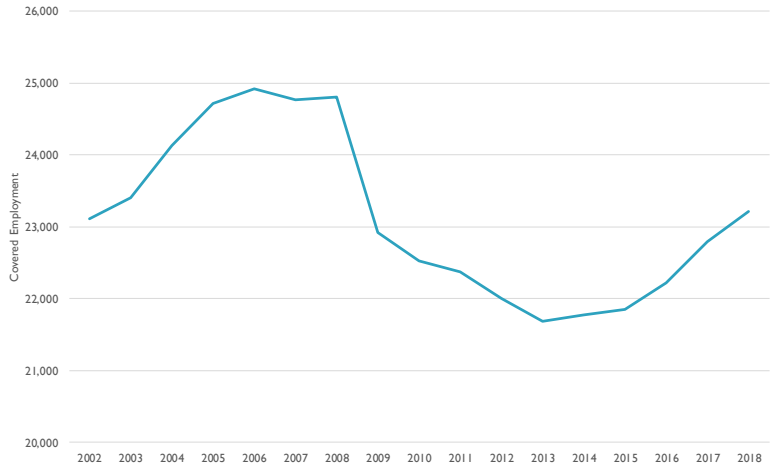
MH/SPEC – means mobile home and Boat, RV, van, etc.
Source: Washington State Office of Financial Management
CAGR means compound annual growth rate

2.2 EMPLOYMENT TRENDS & FORECAST

2.2.1 Employment Trends

Covered employment in Grays Harbor County increased rapidly from 2002 through 2008, growing from 23,113 jobs in 2002 to 24,810 in 2008[10]. However, the recession took a toll on employment, and employment plunged to 21,689 jobs in 2013. Since then, jobs rebounded to 23,218 in 2018. (See Figure 2-4).

Figure 2-4: Grays Harbor County Covered Employment



The number of jobs for each industrial sector grew as follows between 2002 and 2018:

- Health Care and Social Assistance (gain of 972 jobs),
- Administration & Support, Waste Management and Remediation (gain of 572 jobs),
- Public Administration (gain of 374 jobs),
- Accommodation and Food Services (gain of 299 jobs),
- Professional, Scientific, and Technical Services (gain of 117 jobs),
- Arts, Entertainment, and Recreation (gain of 35 jobs),
- Wholesale Trade (gain of 28 jobs),
- Transportation and Warehousing (loss of 10 jobs),
- Real Estate and Rental and Leasing (loss of 30 jobs),
- Information (loss of 61 jobs),
- Construction (loss of 125 jobs),
- Finance and Insurance (loss of 194 jobs),
- Agriculture, Forestry, Fishing and Hunting (loss of 264 jobs),
- Retail Trade (loss of 418 jobs),
- Manufacturing (loss of 615 jobs) but food processing gained 254 jobs and wood product manufacturing remained stable, and
- Other Services (excluding Public Administration, loss of 627 jobs).

[10] Covered employment refers to an employee who is covered by state or federal unemployment insurance if they become unemployed. This excludes self-employed persons and employees of organizations that have their own unemployment insurance (longshoremen, railroad workers et al).

2.2.2 Forecast

The Washington Employment Security Department (ESD) recently prepared forecasts of employment for the Pacific Mountain region, which includes Grays Harbor, Lewis, Mason, Pacific and Thurston counties. BST Associates estimated employment for 2022 and 2027 based on the regional growth forecast for each industry sector, and the Grays Harbor share of each sector. Based on this forecast, employment in Grays Harbor is projected to increase from 22,791 jobs in 2017 to 25,616 jobs in 2027. This represents an increase of 2,825 covered jobs, or annual growth of 1.2% per year (slightly lower than projected statewide growth of 1.5% per year). (See Table 2-2).

By sector, growth is projected as follows:

- Education and Health Services (gain of 700 jobs),
- Government (gain of 586 jobs),
- Leisure and Hospitality (gain of 516 jobs),
- Professional and Business Services (gain of 364 jobs),
- Construction (gain of 197 jobs),
- Retail Trade (gain of 162 jobs),
- Other Services (gain of 111 jobs),
- Wholesale Trade (gain of 84 jobs),
- Financial Activities (gain of 80 jobs),
- Manufacturing (gain of 70 jobs),
- Transportation, Warehousing and Utilities (gain of 51 jobs),
- Information (gain of 28 jobs), and
- Natural Resources and Mining (which includes fishing, loss of 45 jobs).

Table 2-2: Grays Harbor County Employment Forecast

	Estimated employment in Grays Harbor County		Average annual growth rate 2017-2027	
Sector	2017	2027	Grays Harbor County	State of Washington
Total Nonfarm	22,791	25,616	1.2%	1.5%
Natural Resources and Mining	678	633	-0.7%	-0.3%
Construction	917	1,115	2.0%	1.7%
Manufacturing	2,524	2,594	0.3%	0.3%
Wholesale Trade	528	612	1.5%	0.8%
Retail Trade	2,545	2,708	0.6%	1.0%
Transportation, Warehousing and Utilities	512	563	1.0%	2.1%
Information	178	206	1.5%	3.2%
Financial Activities	692	773	1.1%	1.0%
Professional and Business Services	1,477	1,841	2.2%	2.1%
Education and Health Services	2,910	3,610	2.2%	2.1%
Leisure and Hospitality	2,555	3,072	1.9%	1.7%
Other Services	699	810	1.5%	1.4%
Government	6,492	7,079	0.9%	1.1%

CAGR means compound annual growth rate

Source: Washington State Employment Security Department, BST Associates

As in the county as a whole, Westport experienced sustained growth in employment from 844 jobs in 2002 to 1,246 jobs in 2008, with most of the growth occurring in manufacturing (boat building/repair and

food processing), business services, transportation/warehousing and accommodation/food services. Annual growth was 6.7% per year from 2002 to 2008. (See Table 2-3).

The recession that started in 2008 had a powerfully negative effect on Westport, and this lingered through 2016. A large share of the job growth that occurred between 2002 and 2008 was erased, particularly in the manufacturing sector, in which employment fell from 770 jobs in 2008 to 476 jobs in 2016. Between 2008 and 2016 most of the job growth in the county occurred in wholesale trade (up 9 jobs), retail trade (up 7 jobs), transportation and warehousing (up 37 jobs), and business services (up 19 jobs).

The number of jobs was higher in 2016 than in 2002, but employment grew relatively slowly (at 1.2% per year) from 2008 through 2016. This rate of growth is more sustainable, and similar to projected rates of growth described previously.

Table 2-3: Westport Covered Employment Trends

				CAGR	
Industry Sector	**2002**	**2008**	**2016**	**2002-8**	**2002-16**
Agriculture, Forestry, Fishing and Hunting	45	34	20	-4.6%	-5.6%
Construction	8	6	3	-4.7%	-6.8%
Manufacturing	409	770	476	11.1%	1.1%
Wholesale Trade	7	8	17	2.3%	6.5%
Retail Trade	88	81	88	-1.4%	0.0%
Transportation and Warehousing	24	47	84	11.9%	9.4%
Business Services	36	53	72	6.7%	5.1%
Arts, Entertainment, and Recreation	4	3	3	-4.7%	-2.0%
Accommodation and Food Services	141	176	175	3.8%	1.6%
Other Services (excluding Public Administration)	48	26	21	-9.7%	-5.7%
Public Administration	30	32	28	1.1%	-0.5%
Total	844	1,246	999	6.7%	1.2%

Source: US Census Bureau On The Map
CAGR means compound annual growth rate

As shown in Table 2-4, Westport is home to three of the County's largest private employers, Westport Shipyard, Ocean Gold and Washington Crab Producers.

Table 2-4: Major Employers in Grays Harbor County

Business	Category	Employee Count
GH Community Hospital	Medical	639
Stafford Creek Corrections Center	Corrections	596
Aberdeen School District	Education	582
Quinault Nation	Government	513
Quinault Beach Resort	Hospitality	460
Grays Harbor County	Government	369
Westport Shipyard	***Manufacturing***	***275*****
Grays Harbor College	Education	263
Summit Pacific Medical Ctr.	Medical	261
Hoquiam School District	Education	243
Wal-Mart	Retail	231
Willis Enterprises	Manufacturing	230
Overstock.com	Call Center	215
Sierra Pacific	Manufacturing	204
Hanner Enterprises	Hospitality	200
Simpson Door Plant	Manufacturing	191**
City of Aberdeen	Government	177
Coastal Community Action Prog.	Social Services	177
Safeway Foods	Retail	176
Cosmo Specialty Fibers	Manufacturing	165
Grays Harbor Public Utility	Services	162
Seabrook	Hospitality	150
Rognlin's	Construction	140
Quinault Nation Enterprises	Retail	137
The Home Depot	Retail	130**
Washington Crab Producers	***Food Processing***	***120***
Quigg Brothers	Construction	120
Timberland Bank	Banking	118
Vaughan Company, Inc.	Manufacturing	116
Ocean Spray	Food Processing	114
Five Star Dealership	Retail	113
Masco Petroleum	Retail	113
Montesano Health & Rehabilitation	Medical	96
Ocean Gold Companies	***Food Processing***	***85-400****
City of Hoquiam	Government	82
Bank of the Pacific (GH only)	Banking	79
Swanson Foods	Retail	79
Harbors Home Health/Hospice	Medical	65
Grays Harbor Health & Rehab	Medical	63
Washington State DOT	Government	61
Sidhu & Sons Nursery USA, Inc.	Farming	60-150*
Port of Grays Harbor	Government	55
Girard Wood Products	Manufacturing	53
YMCA of Grays Harbor	Non-Profit	52
Fuller Hill	Manufacturing	51
Pasha Automotive/Stevedoring	Processing	50
Ascensus Specialties	Manufacturing	50

* Seasonal Employees
**Estimated
Source: Greater Grays Harbor Inc., Companies directly-contacted, 2019

2.3 OCEAN ECONOMY

NOAA Office of Coastal Management has developed a tool to identify trends associated with the ocean economy at the county level. The following section uses the NOAA data to describe the economy of Grays Harbor County.

2.3.1 Grays Harbor County

Trends for Grays Harbor County from 2005 to 2016 (latest data available) are summarized below. (See Table 2-5).

- Living Resources (fishing, seafood processing and seafood markets):
  - The number of establishments (firms) declined from 85 in 2005 to 48 in 2016,
  - Employment overall declined -1.9% per year (covered employment declined -2.0% per year and self-employment declined at -1.7% per year). Most self-employment in this sector includes fishermen,
  - Wages declined by -1.2% per year
  - GDP increased by 0.8% per year
  - Gross receipts to self-employed persons also increased 0.7% per year.
- Tourism and recreation (boat dealers, eating and drinking places, hotels and lodging places):
  - The number of establishments (firms) declined from 187 in 2005 to 166 in 2016,
  - Employment overall declined -0.7% per year (covered employment declined -0.8% per year and self-employment increased at 1.4% per year). Most employment is in establishments with unemployment coverage,
  - Wages increased by 1.8% per year
  - GDP increased by 1.6% per year
  - Gross receipts to self-employed persons also increased 2.2% per year.
- Other[11] (marine construction, marine transportation, offshore minerals, and ship/boat building):
  - The number of establishments (firms) increased from 15 in 2005 to 21 in 2016,
  - Employment overall declined -0.7% per year (covered employment declined -0.9% per year and self-employment increased at 5.6% per year). Most employment is in establishments with unemployment coverage,
  - Wages increased by 1.1% per year
  - GDP declined by -0.7% per year
  - Gross receipts to self-employed persons declined -1.2% per year.
- Ocean economy (living resources, tourism/recreation and other):
  - The number of establishments (firms) declined from 287 in 2005 to 235 in 2016,
  - Employment overall declined -1.0% per year (covered employment declined -1.0% per year and self-employment declined at -0.8% per year). Most employment is in establishments with unemployment coverage,
  - Wages increased by 0.8% per year
  - GDP increased by 0.4% per year
  - Gross receipts to self-employed persons also increased 0.8% per year.

[11] Subcategories included in other (i.e., marine construction, marine transportation, offshore minerals, and ship and boat building) are reported that do not violate the confidentiality reporting requirements of the federal government. In Grays Harbor County, trends were incomplete for all the sectors included in the other category.

Table 2-5: Economic Trends in the Ocean Economy – Grays Harbor County

		Covered Employed			Self Employed		
Year	# Firms	Employment	Wages (Mils$)	GDP (Mil$)	Employment	Gross Recpts (Mils$)	Total Employment
Living Resources							
2005	85	605	$15.6	$32.8	280	$18.2	885
2006	85	628	$15.4	$36.0	271	$18.0	899
2007	82	565	$15.2	$39.2	260	$19.1	825
2008	80	640	$16.1	$36.7	269	$20.9	909
2009	77	686	$14.1	$37.2	262	$17.5	948
2010	71	652	$16.5	$42.5	282	$21.3	934
2011	71	657	$20.8	$49.3	295	$27.9	952
2012	69	636	$19.4	$46.6	275	$22.9	911
2013	69	696	$20.8	$51.9	262	$22.4	958
2014	60	611	$18.7	$48.5	263	$23.7	874
2015	55	585	$17.2	$43.5	244	$16.9	829
2016	48	483	$13.6	$35.6	231	$19.6	714
CAGR 2005-16	-5.1%	-2.0%	-1.2%	0.8%	-1.7%	0.7%	-1.9%
Tourism and Recreation							
2005	187	1,779	$22.7	$58.5	43	$3.1	1,822
2006	178	1,599	$21.4	$63.2	36	$3.1	1,635
2007	179	1,747	$23.9	$65.1	43	$3.2	1,790
2008	173	1,629	$23.1	$57.8	50	$3.2	1,679
2009	167	1,517	$22.4	$51.2	39	$2.2	1,556
2010	173	1,515	$22.2	$52.3	37	$2.4	1,552
2011	178	1,537	$22.7	$55.2	48	$2.1	1,585
2012	170	1,492	$22.7	$53.8	43	$2.1	1,535
2013	166	1,508	$23.6	$56.4	41	$2.5	1,549
2014	166	1,568	$24.7	$60.5	45	$3.3	1,613
2015	165	1,564	$24.8	$63.1	40	$3.5	1,604
2016	166	1,631	$27.4	$69.3	50	$3.9	1,681
CAGR 2005-16	-1.1%	-0.8%	1.8%	1.6%	1.4%	2.2%	-0.7%
Other							
2005	15	707	$27.8	$75.4	16	$1.7	723
2006	17	879	$33.9	$88.3	21	$2.2	900
2007	21	970	$37.8	$105.4	23	$1.3	993
2008	24	1,162	$46.3	$120.0	20	$1.5	1,182
2009	22	686	$27.9	$78.2	21	$1.0	707
2010	20	650	$30.9	$77.4	18	$1.4	668
2011	18	605	$27.1	$68.5	20	$1.3	625
2012	19	653	$31.7	$75.7	26	$1.7	679
2013	17	498	$28.0	$62.8	24	$1.4	522
2014	20	472	$24.4	$54.5	26	$1.3	498
2015	23	570	$28.6	$63.4	25	$1.5	595
2016	21	641	$31.4	$70.0	29	$1.5	670
CAGR 2005-16	3.1%	-0.9%	1.1%	-0.7%	5.6%	-1.2%	-0.7%
Total Ocean Economy							
2005	287	3,091	$66.1	$166.7	339	$23.0	3,430
2006	280	3,106	$70.7	$187.6	328	$23.2	3,434
2007	282	3,282	$76.9	$209.7	326	$23.7	3,608
2008	277	3,431	$85.5	$214.5	339	$25.6	3,770
2009	266	2,889	$64.3	$166.7	322	$20.7	3,211
2010	264	2,817	$69.6	$172.2	337	$25.1	3,154
2011	267	2,799	$70.7	$173.1	363	$31.3	3,162
2012	258	2,781	$73.7	$176.1	344	$26.7	3,125
2013	252	2,702	$72.3	$171.1	327	$26.4	3,029
2014	246	2,651	$67.7	$163.6	334	$28.3	2,985
2015	243	2,719	$70.7	$170.0	309	$21.9	3,028
2016	235	2,755	$72.4	$175.0	310	$25.0	3,065
CAGR 2005-16	-1.8%	-1.0%	0.8%	0.4%	-0.8%	0.8%	-1.0%

CAGR means compound annual growth rate;
Source: NOAA Office for Coastal Management Economics: National Ocean Watch (ENOW)

Approximately 75% of the covered employment in the Living Resources sector in Grays Harbor County is located in the city of Westport. In addition, a large share of the sector located outside of Westport is

directly linked to Westport (e.g., firms like Ocean Protein located in Hoquiam that are dependent on resources from Westport).

2.3.2 Employment Trends

Employment trends for selected regions are shown in Table 2-6, which combines employment (covered and self-employment) across Living Resources and other sectors (i.e., Marine Construction, Marine Transportation, Offshore Minerals, and Ship/Boat Building).

Employment in these sectors in Grays Harbor county declined from 1,608 in 2005 to 1,384 in 2016, or at -1.4% per year. In the rest of Washington State, average annual growth was 1.2% per year.

The growth rates for selected Oregon coastal counties from 2005 to 2016 included the following:

- Clatsop County (Astoria and Warrenton) increased at 0.8% per year,
- Lincoln County (Newport and Toledo) increased at 1.7% per year,
- Coos County (Coos Bay, North Bend and Charleston) increased at 0.9% per year,
- Other Oregon increased 0.3% per year.

The growth rates for selected California coastal counties included the following:

- Del Norte County (Crescent City) increased at 1.7% per year,
- Humboldt County (Eureka) decreased at -2.5% per year,
- Other California decreased at -0.8% per year.

Statewide employment growth in Alaska was 1.3% per year (from 2005 to 2016).

Table 2-6: Comparison of Living Resources & Other Categories by Coastal Region - Employment

Year	Grays Harbor WA	Other WA	Clatsop OR	Lincoln OR	Coos OR	Other OR	Del Norte CA	Humboldt CA	Other CA	Alaska
2005	1,608	50,674	900	665	934	8,804	223	782	155,385	28,685
2006	1,799	52,682	896	678	900	9,103	234	696	155,560	30,683
2007	1,818	53,273	927	686	934	10,114	235	729	157,445	32,121
2008	2,091	52,361	979	797	907	10,210	244	720	154,751	33,390
2009	1,655	50,501	929	794	847	8,460	279	660	144,729	33,006
2010	1,602	49,661	1,043	803	875	8,243	256	729	138,967	33,832
2011	1,577	50,887	1,029	813	952	8,102	221	638	131,131	35,073
2012	1,590	52,137	1,102	843	931	8,121	290	651	132,066	34,613
2013	1,480	53,094	1,077	863	980	8,220	292	682	137,748	36,330
2014	1,372	54,852	1,033	847	962	8,258	274	661	126,242	38,108
2015	1,424	56,092	969	828	963	8,542	245	612	135,061	37,108
2016	1,384	57,904	979	804	1,029	9,137	269	594	142,852	33,165
CAGR 2005-16	-1.4%	1.2%	0.8%	1.7%	0.9%	0.3%	1.7%	-2.5%	-0.8%	1.3%

CAGR means compound annual growth rate;
Source: NOAA Office for Coastal Management Economics: National Ocean Watch (ENOW)

2.3.3 GDP & Receipts

Trends for selected regions are shown in Table 2-7, which presents GDP across Living Resources and other sectors (i.e., Marine Construction, Marine Transportation, Offshore Minerals, and Ship/Boat Building, but excluding Tourism/Recreation).

Nominal GDP/receipts in Grays Harbor county declined from $108.2 million in 2005 to $105.6 million in 2016 or at -0.2% per year. Most of the growth was in areas of Washington State not located on the coast, with average annual growth of 3.6% per year.

Oregon coastal communities experienced growth in employment:

- Clatsop County (Astoria and Warrenton) increased at 3.0% per year,
- Lincoln County (Newport and Toledo) increased at 3.9% per year,
- Coos County (Coos Bay, North Bend and Charleston) decreased at -4.0% per year,
- Other Oregon increased 4.6% per year.

California coastal communities experienced growth in employment:

- Del Norte County (Crescent City) increased at 6.2% per year,
- Humboldt County (Eureka) increased at 3.1% per year,
- Other California decreased at -0.4% per year.

Alaska (statewide) experienced a decline in nominal GDP of -2.6% per year.

Table 2-7: Comparison of Living Resources & Other Categories by Coastal Region - GDP

Year	Grays Harbor WA	Other WA	Clatsop OR	Lincoln OR	Coos OR	Other OR	Del Norte CA	Humboldt CA	Other CA	Alaska
2005	$108.2	$6,310.6	$41.9	$25.6	$117.6	$966.9	$8.2	$24.5	$23,420.6	$10,695.6
2006	$124.3	$6,989.1	$42.8	$31.3	$114.8	$1,148.4	$10.6	$25.4	$25,641.6	$13,315.5
2007	$144.6	$7,522.8	$42.6	$38.5	$71.6	$1,459.1	$7.7	$26.5	$27,416.5	$15,522.1
2008	$156.6	$7,336.5	$41.4	$45.3	$68.4	$1,777.9	$10.1	$27.2	$29,629.4	$20,473.2
2009	$115.5	$7,429.9	$47.2	$51.0	$57.6	$1,689.8	$14.6	$26.2	$25,820.5	$14,725.3
2010	$119.9	$7,770.6	$45.5	$45.6	$52.5	$1,932.9	$12.0	$32.5	$25,698.9	$16,072.4
2011	$117.9	$7,752.8	$49.7	$42.3	$55.6	$1,825.1	$11.5	$28.1	$25,467.5	$19,526.4
2012	$122.3	$8,028.0	$52.9	$42.4	$57.4	$1,535.5	$21.7	$33.4	$26,694.5	$20,269.2
2013	$114.7	$8,192.5	$61.8	$41.5	$71.2	$1,524.5	$21.6	$32.9	$26,640.5	$18,450.7
2014	$103.0	$8,426.6	$57.2	$41.2	$73.7	$1,582.0	$14.6	$33.4	$23,341.8	$15,857.0
2015	$106.9	$8,880.7	$53.8	$40.7	$75.1	$1,500.3	$11.7	$32.8	$22,701.3	$10,255.6
2016	$105.6	$9,297.1	$58.2	$39.1	$75.1	$1,584.4	$15.9	$34.2	$22,521.8	$8,015.0
CAGR 2005-16	-0.2%	3.6%	3.0%	3.9%	-4.0%	4.6%	6.2%	3.1%	-0.4%	-2.6%

CAGR means compound annual growth rate;
Source: NOAA Office for Coastal Management Economics: National Ocean Watch (ENOW)

2.4 SUMMARY

Grays Harbor County and Westport experienced modest growth in the past decade, and growth is expected to continue at a slow pace:

- The population of Westport was estimated at 2,120 in 2018, and has remained essentially unchanged from 2009 through 2018. Likewise, the population growth in Grays Harbor county grew slowly between 2010 and 2018, and is projected to grow at an average rate of just 0.1% per year.
- Covered employment in Grays Harbor County increased rapidly between 2002 and 2008 (i.e. from 23,113 jobs to 24,810 in 2008). However, the recession caused employed to drop to 21,689 jobs in 2013, before recovering to 23,218 in 2018. Most of the growth after 2013 was in services and health care. Employment in Grays Harbor County is projected to increase at 1.2% per year (slightly lower than projected statewide growth of 1.5% per year).
- Westport experienced sustained growth in employment from 844 jobs in 2002 to 1,246 jobs in 2008, with most of the growth occurring in manufacturing (boat building/repair and food processing), business services, transportation/warehousing and accommodation/food services. The 2008 recession wiped out much of this growth, and was especially hard on manufacturing employment; manufacturing employment fell from 770 jobs in 2008 to 476 in 2016. Most of the growth after 2008 was in wholesale trade (up 9 jobs), retail trade (up 7 jobs), transportation and warehousing (up 37 jobs), and business services (up 19 jobs). Westport is home to three of the County's largest private employers, Westport Shipyard, Ocean Gold and Washington Crab Producers.
- According to data from NOAA's Office of Coastal Management, trends in the ocean economy in Grays Harbor County included the following:
    - Living Resources (fishing, seafood processing and seafood markets): the number of establishments declined from 85 in 2005 to 48 in 2016, employment declined by -1.9% per year, wages declined by -1.2% per year, GDP increased by 0.8% per year, and gross receipts to self-employed persons increased 0.7% per year.
        - Approximately 75% of the covered employment in the living resources sector in Grays Harbor County is located in the city of Westport, and a large share of the sector located outside of Westport is directly linked to Westport.
    - Tourism and recreation (boat dealers, eating and drinking places, hotels and lodging places): the number of establishments fell from 187 in 2005 to 166 in 2016, employment declined -0.7% per year, wages increased by 1.8% per year, GDP increased by 1.6% per year, and gross receipts to self-employed persons increased 2.2% per year.
    - Other (marine construction, marine transportation, offshore minerals, and ship/boat building): the number of establishments increased from 15 in 2005 to 21 in 2016, employment declined -0.7% per year, wages increased by 1.1% per year, GDP declined by -0.7% per year, and gross receipts to self-employed persons declined -1.2% per year.
- Grays Harbor County under-performed in the ocean economy relative to other counties in the competitive region, in both employment and gross domestic product.

3 FISHING TRENDS AND OUTLOOK

Fishing is a key driver of the Westport economy.

In 2019, 346 boats had annual moorage at the Westport Marina, including 185 commercial fishing vessels, 29 charter fishing vessels, and 112 recreational boats. Moorage is also provided to transient vessels during the various fishing seasons. Several seafood processors are located in Westport.

The following section provides details on the composition of the fishing industry and its needs.

3.1 FISH AND SEAFOOD LANDINGS

According to NOAA Fisheries, Westport ranked as the 11th largest port in the United States in terms of fish landings value in 2017, and has been none of the top 20 U.S. ports since 2002[12]. Major species landed include hake, sardines, crab, and shrimp. Hake is by far the largest-volume species fished, but crab has a much higher value. In general, the commercially harvested fisheries on the Washington Coast are stable and healthy or are in recovery.

3.1.1 Hake

Hake (also known as Pacific whiting) season begins on May 15, for both at-sea and shore-based fisheries. Most of the fishing effort occurs between June and October.

Processing of hake is allocated between shore-based processors, at-sea mothership processors, and at-sea-catcher processors. The current allocation, which has been in effect since 1997, divides the U.S. non-tribal harvest between shore-based processors (42%), catcher-processors (34%), and mothership processors (24%). Since 2011, the non-tribal U.S. fishery has been fully rationalized, with allocations in the form of Individual Fishing Quotas (IFQs) to the shore-based sector and group shares to cooperatives in the at-sea mothership and catcher-processor sectors. Starting in 1996, the Makah Indian Tribe has also conducted a fishery with a specified allocation in its "usual and accustomed fishing area".[13]

3.1.2 Sardines

Since 2009 the sardine fishery in Washington has been limited to 16 permanent licenses, which can be transferred or sold. In addition, temporary annual permits may be issued at the discretion of the WDFW Director, with the total number of permanent and temporary annual licenses not exceeding 25.

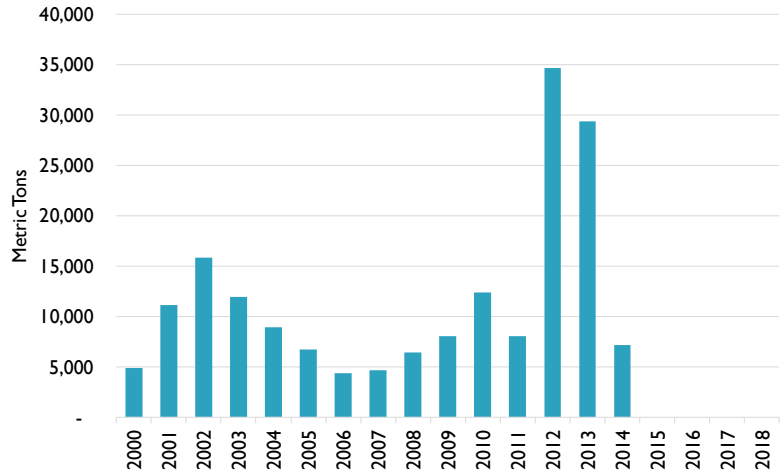
The sardine harvest is highly cyclical, with the Washington harvest ranging from less than 5,000 metric tons in 2000, 2006, and 2007 to more than 15,000 metric tons in 2002 and more than 12,000 metric tons in 2010. Harvest levels spiked in 2012 and 2013, hitting highs of nearly 35,000 metric tons in 2012 and 30,000 metric tons in 2013, but the 2014 harvest fell to just 7,100 metric tons. The 2015-2016 season was

[12] NOAA Fisheries web page. https://foss.nmfs.noaa.gov/apexfoss/f?p=215:200:10521511197547::NO:::

[13] Joint Technical Committee of the Pacific Hake/Whiting Agreement Between the Governments of the United States and Canada. Status of the Pacific Hake (Whiting) Stock in U.S. and Canadian Waters in 2018. March 2nd, 2018

cancelled in Washington, Oregon, and California due to poor sardine abundance, and has been cancelled in each of the following years.[14]

Figure 3-1: Washington Commercial Sardine Harvest



Source: Washington Department of Fish and Wildlife

3.1.3 Crab

There are 228 Washington coastal commercial Dungeness crab license holders, with approximately 200 fishers who are active participants in this highly competitive fishery. The season typically starts on December 1 (if WDFW pre-season shell condition testing shows that the majority of the male crabs have recovered from the fall molt period) and runs through September 15. The main ports of landing for the coastal commercial Dungeness crab fishery are Ilwaco, Chinook, Westport, Tokeland and La Push.[15]

Washington coastal Dungeness crab landing data back to 1950 shows a large fluctuation in harvest, ranging from a low of 2.5 million pounds in 1981 to a high of 25 million pounds in 2004-05 averaging at 9.5 million pounds. It is believed that this large fluctuation in landings is not a result of harvest patterns, but likely due to varying ocean conditions including water temperature, food availability, and ocean currents.[16]

There is no stock assessment work conducted on coastal crab populations. Dungeness crab management on the coast is based on a minimum size limit of 6¼ inches, prohibition of harvest of female crab, and a season closure during the primary male molt period. The minimum size limit assumes that male crab that are harvested have been sexually mature and have mated at least once before reaching legal size. Male crabs 6¼ inches or larger are assumed to be harvestable surplus; it is assumed that as much as 95% of the legal sized male crabs are harvested annually.[17]

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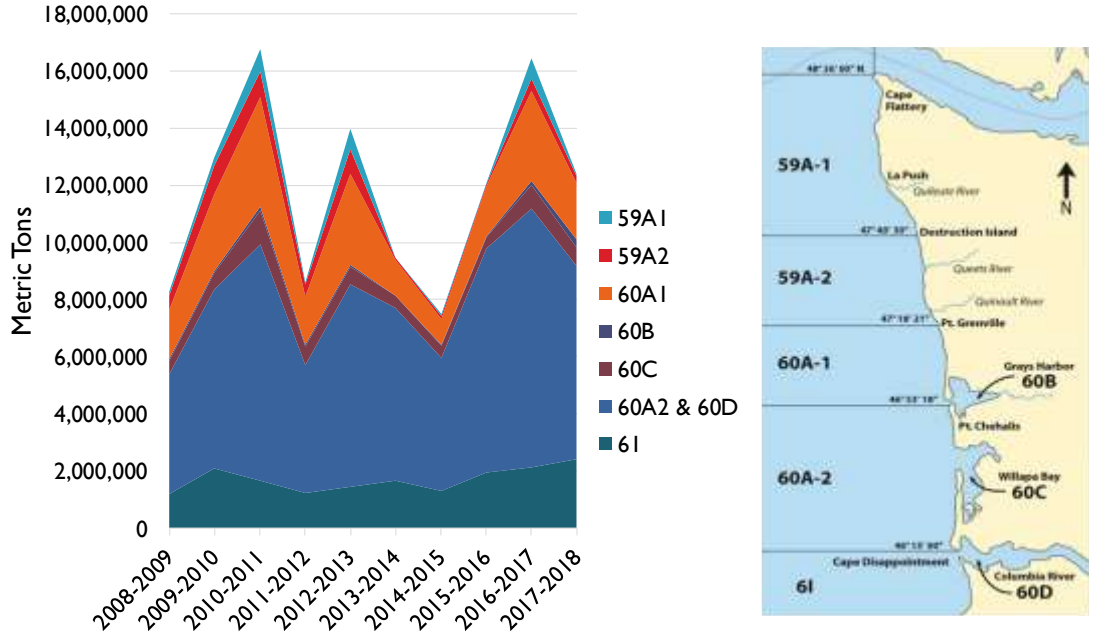
[14] WDFW. https://wdfw.wa.gov/fishing/commercial/sardine/fishery_notices.html, accessed 1-29-2019.

[15] WDFW. https://wdfw.wa.gov/fishing/commercial/crab/coastal/, accessed 1-29-2019.

[16] ibid

[17] ibid

Figure 3-2: Non-Treaty Coastal Commercial Dungeness Crab Landings by Catch Reporting Area



Source: WDFW

3.1.4 Shrimp

Commercial shrimp fishing on the Washington coast began off Grays Harbor in 1956, and focuses on pink shrimp. Washington coastal shrimp fishing activity is split between Westport and Ilwaco, with processors located at each.

Pink shrimp are caught by trawl gear during daylight hours. The typical commercial trip ranges from 3 to 6 days including transit to and from the fishing grounds, with shorter trips when fishing is especially productive. Along the Washington coast, the pink shrimp fishery operates in federal waters (3-200 miles); most commercial gears, including trawl, are prohibited inside Washington state waters (0-3 miles).

The status of pink shrimp stocks off the coast of Washington has not been specifically determined, but there are strong indications it is stable. The Oregon pink shrimp fishery in waters adjacent to Washington is well-documented, and appears to be resilient to both naturally caused variations in distribution and fishery impacts. As much as one-third of the shrimp landed into Oregon ports come from waters off Washington State, and these landings are included in Oregon's extensive sampling and logbook evaluation program. By many measures, the Washington and northern Oregon stocks are considered contiguous.[18]

Since 1982, the three Pacific Coast states (Washington, Oregon, and California) have operated a common season, which opens on April 1 and closes on October 31.

In 1994, the Washington limited entry (LE) license program established 143 licenses. As of 2014, the number of LE licenses stood at 83. The LE licenses must be renewed annually, but do not need to be fished actively to remain valid; the decline is attributed to LE license owners electing not to renew.

[18] WFDW. https://wdfw.wa.gov/fishing/commercial/shrimp/, accessed 1-3-2019.

3.1.5 Salmon

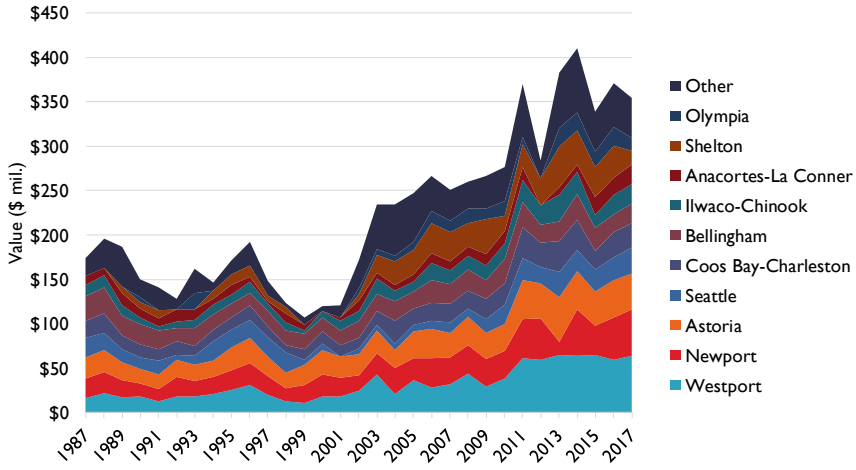
From 2000 through 2018, salmon landings at Washington Coastal ports (primarily Westport) averaged approximately 1,150 metric tons per year. During that period the harvest went through several up and down cycles, with landings ranging from as low as 425 metric tons to as high as 2,650 metric tons. Since 2014 the landed volume has been less than 1,000 metric tons each year and has fallen each year, to a low of 425 metric tons in 2018. As with other natural resource industries, salmon fishing is subject to influence from outside factors such as endangered species regulations, Canada-United States salmon treaties, and catch and processing allocation decisions. These uncertainties tend to increase the volatility in the industry.

The coastal commercial salmon fishery is currently limited to a spring opening and a summer opening. For 2019 the spring opening ran from May 6 through the earlier of June 28 or when the fish limit was reached. The summer fishery started on July 1 and was scheduled to run until the earlier of September 30 or when limits were reached.

3.1.6 Overall Comparison

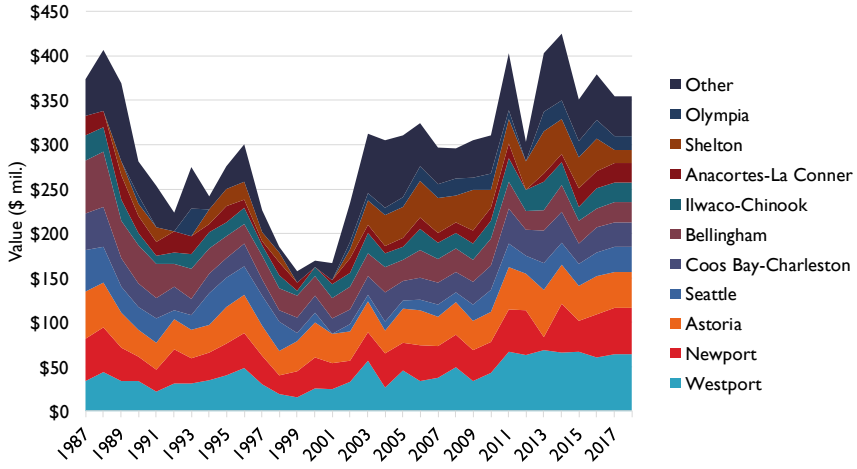
Westport is by far the largest fishing port in Washington, accounting for 28% of landed value and 72% of landed weight. Westport has the highest value of fish landings in the Pacific Northwest, and is essentially tied with Astoria in landed weight.

Figure 3-3: Value of Fish Landings by Port, Top 10 in Ports Oregon & Washington (Current Dollars)



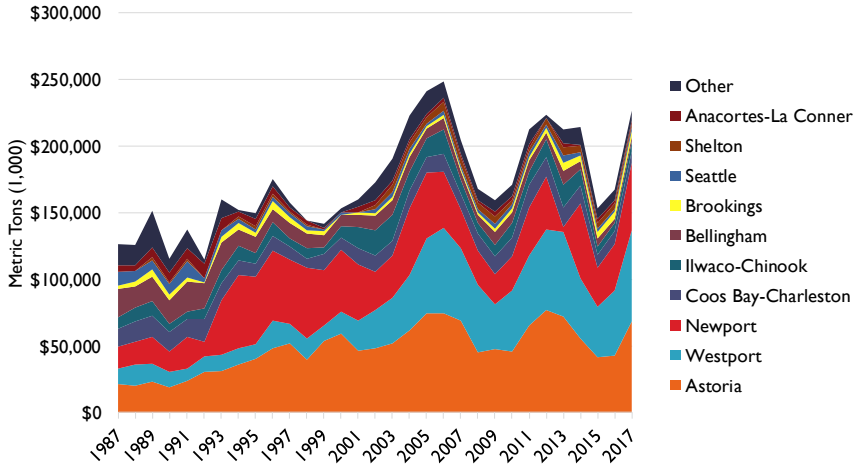
Source: National Ocean Economics Program, NMFS

Figure 3-4: Value of Fish Landings by Port, Top 10 in Ports Oregon & Washington (2017 Dollars)



Source: National Ocean Economics Program, NMFS

Figure 3-5: Weight of Fish Landings by Port, Top 10 in Ports Oregon & Washington (Metric Tons)



Source: National Ocean Economics Program, NMFS

3.2 ISSUES OF CONCERN

The Washington Department of Ecology recently lead an effort to develop a marine spatial plan (MSP) for Washington's Pacific coast. The plan was developed in coordination with a number of agencies, and engaged coastal stakeholders, the public, and local, tribal and federal governments. One of the reports that resulted from this effort identified issues of concern to the fishing and fish processing industries: [19]

- Factors affecting the fishing Sector:
  - Barriers to entry and success
  - Limitations in use of space
  - Ocean acidification
  - Oil industry conflict

[19] WDOE Marine Spatial Planning, Marine Sector Analysis Report: Non-Tribal Fishing, IEC, 2014

  - Overfished species
  - Potential for concentration of ownership
  - Regulatory uncertainty
  - Salmon production and survivability
  - Laws and regulations limiting catch.

- Factors affecting the fish processing industry:
  - Infrastructure issues related to whether water or byproduct use in the processing process will overwhelm existing infrastructure;
  - A decline in wholesale prices for seafood;
  - Major expansion of the onshore Pacific whiting fishery;
  - Horizontal integration of processors and consolidation of processing plants in fewer locations;
  - Vertical integration into distribution and harvesting operations;
  - Return of small processors to offering specialty products in niche markets.

3.3 FUTURE PROSPECTS

NOAA Fisheries prepares an annual report that "highlights the work toward the goal of maximizing fishing opportunities while ensuring the sustainability of fisheries and fishing communities."[20] The report is based on the following factors:

- Maximum sustainable yield (MSY): The largest long-term average catch that can be taken from a stock under prevailing environmental and fishery conditions.
- Overfishing: A stock having a harvest rate higher than the rate that produces its MSY.
- Overfished: A stock having a population size that is too low and that jeopardizes the stock's ability to produce its MSY.
- Rebuilt: A stock that was previously overfished and that has increased in abundance to the target population size that supports its MSY.

In the 2017 and 2018 reports, selected salmon stocks generated most of the concern. In the 2017 report, one species was added to the overfishing list and two were removed from the overfished list (along the Pacific Coast):

- Overfishing list
  - Added – Coho salmon Stillaguamish
- Overfished list
  - Removed – Yelloweye rockfish and Pacific Ocean perch
- Rebuilt List
  - Bocaccio – Southern pacific coast
  - Dark blotched rockfish
  - Pacific Ocean perch

[20] https://www.fisheries.noaa.gov/national/2018-report-congress-status-us-fisheries

In 2018, one species was added to the overfishing list and two were removed from the overfished list along the Pacific Coast:

- Overfishing list
  - Removed – Coho salmon Stillaguamish
  - Added – Chinook Salmon Columbia River Basin Upper River reservoir
- Overfished list
  - Added – Chinook salmon in Sacramento and Klamath river fall runs
  - Added – Coho salmon in Washington coast (Queets, Strait of Juan de Fuca) and Snohomish River
  - Dark blotched rockfish
  - Pacific Ocean perch

The Global Change Research Act of 1990 mandates that the U.S. Global Change Research Program (USGCRP) deliver a report to Congress and the President no less than every four years that "1) integrates, evaluates, and interprets the findings of the Program; 2) analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and 3) analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years.

A recent report from this effort described future impacts of global warming on oceans and fishing. Three key messages from this report include: [21]

> Key Message 1 - Ocean Ecosystems
>
> The Nation's valuable ocean ecosystems are being disrupted by increasing global temperatures through the loss of iconic and highly valued habitats and changes in species composition and food web structure. Ecosystem disruption will intensify as ocean warming, acidification, deoxygenation, and other aspects of climate change increase. In the absence of significant reductions in carbon emissions, transformative impacts on ocean ecosystems cannot be avoided.
>
> Key Message 2 - Marine Fisheries
>
> Marine fisheries and fishing communities are at high risk from climate-driven changes in the distribution, timing, and productivity of fishery-related species. Ocean warming, acidification, and deoxygenation are projected to increase these changes in fishery-related species, reduce catches in some areas, and challenge effective management of marine fisheries and protected species. Fisheries management that incorporates climate knowledge can help reduce impacts, promote resilience, and increase the value of marine resources in the face of changing ocean conditions.
>
> Key Message 3 - Extreme Events
>
> Marine ecosystems and the coastal communities that depend on them are at risk of significant impacts from extreme events with combinations of very high temperatures, very low oxygen levels,

[21] Pershing, A.J., R.B. Griffis, E.B. Jewett, C.T. Armstrong, J.F. Bruno, D.S. Busch, A.C. Haynie, S.A. Siedlecki, and D. Tommasi, 2018: Oceans and Marine Resources. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 353–390. doi: 10.7930/NCA4.2018.CH9 On the Web: https://nca2018.globalchange.gov/chapter/oceans; page 354

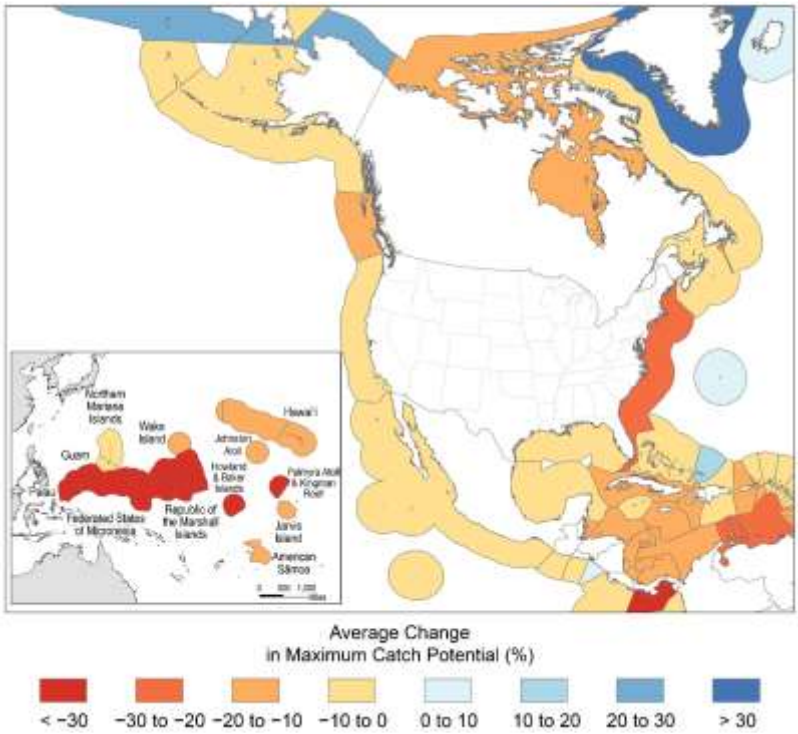
or very acidified conditions. These unusual events are projected to become more common and more severe in the future, and they expose vulnerabilities that can motivate change, including technological innovations to detect, forecast, and mitigate adverse conditions.[22]

Error! Not a valid bookmark self-reference. presents the impact on fisheries from the base period (1991–2010) to the target period (2041–2060). Along most of the U.S. West Coast, potential catch may decline by up to 10 percent. The largest expected decline is a 22 percent reduction in salmon harvest in Washington state by the end of the century – a loss valued at $3 billion.

The southern half of the British Columbia coast and the very northern portion of the Washington coast could experience a decline of 10% to 20% during this period.

Gulf of Alaska is projected to increase by approximately 10 percent, and the Bering Sea catch potential may increase by approximately 46 percent. There could be an uptick from new species moving into the newly-warmer waters in the area but Bering Sea pollock and Pacific cod expected to decline. Ocean acidification will have a negative impact on Tanner crab, red king crab, and pink salmon.

Figure 3-6: Climate Change Impact on Fisheries[23]



[22] The report notes "sequence of warm ocean events between 2014 and 2016 in the northeastern Pacific Ocean, including a large, persistent area of very warm water referred to as the Blob". Ibid page 355.

[23] The figure shows average projected changes in fishery catches within large marine ecosystems for 2041–2060 relative to 1991–2010 under a higher scenario (RCP8.5). All U.S. large marine ecosystems, with the exception of the Alaska Arctic, are expected to see declining fishery catches. Ibid page 363.

3.4 SUMMARY

3.4.1 Fishing Trends and Outlook

Fishing is a key driver of the Westport economy.

- The Westport Marina had 346 boats with annual moorage in 2019, including 185 commercial fishing vessels and 29 charter fishing vessels. Moorage is also provided to transient vessels during the various fishing seasons. Several seafood processors are located in Westport.
- According to NOAA Fisheries, Westport ranked as the 11th largest port in the United States in terms of the value of fish landings in 2017, and has been none of the top 20 U.S. ports since 2002[24]. Major species landed include hake, sardines, crab, and shrimp. Hake is by far the largest-volume species fished, but crab has a much higher value. In general, the commercially harvested fisheries on the Washington Coast are stable and healthy or are in recovery.
- Westport is by far the largest fishing port in Washington, accounting for 28% of landed value and 72% of landed weight. Westport has the highest value of fish landing in the Pacific Northwest, and is essentially tied with Astoria in landed weight.

3.4.2 Issues of Concern

Factors affecting the fishing sector include barriers to entry and success, limitations in use of space, ocean acidification, oil industry conflict, overfished species, potential for concentration of ownership, regulatory uncertainty, salmon production and survivability and laws and regulations limiting catch.

Factors affecting the fish processing industry include infrastructure issues related to whether water or byproduct use in the processing process will overwhelm existing infrastructure; a decline in wholesale prices for seafood; major expansion of the onshore Pacific whiting fishery; horizontal integration of processors and consolidation of processing plants in fewer locations; vertical integration into distribution and harvesting operations; and return of small processors to offering specialty products in niche markets.

3.4.3 Future prospects

NOAA Fisheries has revised its list of overfishing and overfished species in 2018, with a concern focused on salmon, dark blotched rockfish and Pacific Ocean perch.

Looking to the future, there is continued concern about health of ocean ecosystems (primarily caused by disruptions from increasing global temperatures), and the coastal communities that depend on them. The U.S. West Coast could see a harvest decline of up to 10 percent by the end of the century, and Washington could see a 22 percent drop in salmon harvest. However, harvests in the Gulf of Alaska are both projected to increase.

[24] NOAA Fisheries web page. https://foss.nmfs.noaa.gov/apexfoss/f?p=215:200:10521511197547::NO:::

4 DEMAND FOR IN-WATER FACILITIES

4.1 SUPPLY OF IN-WATER FACILITIES

4.1.1 Existing Moorage Slip Distribution

The Westport Marina currently has an estimated 580 moorage spaces, including a mix of slips, side ties, and end ties.

The current inventory of moorage includes 541 individual slips, 19 end-tie spaces, and 20 side-tie spaces. The total number of moorage spaces differs from that used in the 2008 market analysis, i.e. 546 spaces. The difference is due to a number of spaces being re-designated into different lengths (primarily end-ties and linear side-tie moorage). No physical reconfiguration of the marina was done between 2008 and 2019

The existing slip mix at the Westport Marina differs substantially from most marinas in Washington. Nearly all of the slips at the Westport Marina are 40 feet or longer, reflecting the importance of the commercial fishing and charter fishing fleets. In contrast, a majority of the older marinas in Washington tend to have most of their slips in the 20-foot to 40-foot range. It should be noted, however, that as these older marinas are reconstructed, they are typically reconfigured to eliminate the smaller slips.

Table 4-1: Existing Slip Distribution

	2008				2019			
Length (ft)	Slips	End Tie	Side Tie	Total	Slips	End Tie	Side Tie	Total
20							8	8
25					4			4
30	32			32	32			32
33					3		0	3
35					9	2		11
40	332		3	335	333	1	3	337
42					2			2
45			1	1	1	6	3	10
46					1			1
50	66		2	68	63	1	2	66
54					1			1
60	51			51	56			56
68			1	1	1			1
70	11		1	12	8	1		9
80	25		2	27	23	5	1	29
88		2		2				
90	2		1	3	1			1
98		2	3	5		2		2
110	2			2	2			2
128		2		2		1		1
168		2		2				
180	1			1	1			1
200							1	1
208			1	1			1	1
350			1	1			1	1
Total	522	8	16	546	541	19	20	580

Source: BST Associates, Westport Marina data

More than 68% of the moorage spaces (i.e. 395 spaces) are 40 feet long or less; this includes 381 slips, three end-tie spaces, and 11 side-tie spaces. Of the remaining 185 spaces, 79 are 41 to 50 feet long, 57 are 51 to 60 feet long, and 49 are longer than 60 feet.

Westport offers slips longer than 60 feet, which is also unusual for Washington marinas. Of the 49 slips longer than 60 feet, 8 are 70 feet long and 23 are 80 feet long. At most marinas, space for larger boats is provided by end-tie and side-tie moorage.

4.1.2 Current Utilization Patterns

The Westport Marina provides moorage to a variety of vessel types, including commercial fishing, charter fishing, recreational, and others. Moorage is available on a long-term basis (home-ported vessels) and short-term (transient vessels). The following section describes the composition of both the home-ported and transient fleets.

Annual Moorage Tenants

The Westport Marina currently leases 346 moorage spaces on annual basis. Two-thirds of these spaces (i.e. 228 boats) are used for commercial purposes, including 185 used by commercial fishing boats (22 tribal and 163 non-tribal fishing boats).

Charter fishing is the second-largest component of the commercial fleet, accounting for 29 vessels. The remaining 14 commercial spaces are used by: mega-yachts (i.e. Westport Shipyard leases four slips), oil response boats (three slips), and a variety of other types.

Recreational boats (excluding charter vessels) are the second-largest market for the Westport Marina. As of October 2019, the marina leased 112 spaces on an annual basis to recreational tenants, or 32% of the total annual moorage tenants.

The remaining six slips include three that are leased by various government agencies, plus three other tenants.

Table 4-2: Westport Tenant Vessels by Vessel Use

Vessel Use	Vessel Use Detail	# of Boats	Sub-Total	Share of Total
Commercial	Commercial Fishing	163		
	Commercial Fishing – Tribal	22		
	Charter	29		
	Other	14	228	66%
Recreation		112	112	32%
Government		3	3	1%
Other		3	3	1%
Total		346	346	100%

Source: BST Associates, Westport Marina data

The vessels in each of the three main use types (i.e. commercial fishing, charter, and recreational) fall into distinct length groupings.

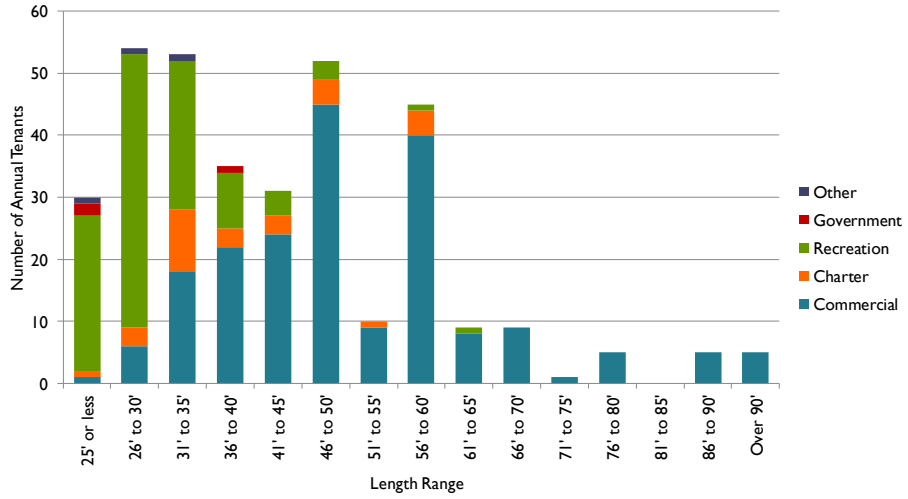
Recreational vessels are the smallest, with more than 90% of the fleet 40 feet or less, and the majority of these 30 feet or less. Less than 2% of the recreational vessels are 50 feet or longer. (See Figure 4-1).

Most charter vessels are between 31 feet and 50 feet long. Approximately 45% of the charter boats (i.e. 13 vessels) are 31 to 40 feet long, and 24% (i.e. 7 vessels) are between 41 feet and 50 feet. Of the remaining 30%, five vessels are longer than 50 feet and four vessels are 30 feet or less.

The majority of the annual commercial fishing fleet is longer than 40 feet; vessels longer than 40 feet account for 76% of the commercial fleet (i.e. 151 out of 199 vessels), and nearly half of the commercial boats are between 46 feet and 60 feet. Vessels longer than 60 feet account for 17% of the fleet (i.e. 33 vessels).

A comparison of the existing moorage spaces with the annual commercial fleet shows that 70% of the moorage spaces are 40 feet or less, but only 24% of the fleet (i.e. 47 vessels) is 40 feet or less.

Figure 4-1: Westport Tenant Vessels by Vessel Length & Type



Source: BST Associates, Westport Marina data

Nearly all of the Westport Marina annual tenants are from Washington. Across all vessel uses, 332 (i.e. 96.0%) of the 346 annual tenants are from Washington, while the other 14 vessels are from out of state. The same is true for each of the three main vessel uses (commercial fishing, charter, recreational), with approximately 96% of the vessels from each of these categories having owners in Washington. (See Table 4-3).

The majority of commercial fishing vessels are from Grays Harbor County; Grays Harbor accounts for 114 of the 185 fishing vessels, or 61.6% of the total. Other western Washington counties account for 60 of the remaining 71 vessels, eastern Washington accounts for three vessels, and other states account for eight vessels.

The 29 vessels in the charter fleet include 12 from Grays Harbor County (i.e. 41.4% of the fleet) and nine vessels from King County (31.0% of the fleet). Most of the remaining charter vessels are from Pierce County (four boats) and Thurston County (two boats). Snohomish County and Alaska each account for one charter boat.

A majority of recreational annual tenants are from the Puget Sound area, primarily King, Pierce, and Thurston County. These three counties account for 59 of the 112 recreational annual tenants, or 52.7%. Grays Harbor County accounts for 25 vessels, or 22.3%. Of the remaining 29 recreational vessels, 21 are from other western Washington counties (i.e. 18.8%), four are from eastern Washington (i.e. 3.6%), and four are from out of state.

Table 4-3: Westport Tenant Vessels by Vessel Use and Owner County

	Charter		Commercial Fishing		Commercial Other		Government		Recreation		Other		Total	
County	#	Share	#	Share	#	Share	#	Share	#	Share	#	Share	#	Share
Asotin			1	0.5%									1	0.3%
Chelan									2	1.8%			2	0.6%
Clallam			3	1.6%	4								7	2.0%
Clark									3	2.7%			3	0.9%
Grant				0.0%	1								1	0.3%
Grays Harbor	12	41.4%	114	61.6%	4				25	22.3%	1	33.3%	156	45.1%
Jefferson			3	1.6%									3	0.9%
King	9	31.0%	9	4.9%	3				27	24.1%			48	13.9%
Kitsap			3	1.6%					1	0.9%			4	1.2%
Lewis			3	1.6%					2	1.8%			5	1.4%
Mason			1	0.5%					6	5.4%			7	2.0%
Pacific			10	5.4%					1	0.9%			11	3.2%
Pierce	4	13.8%	8	4.3%					20	17.9%			32	9.2%
Skagit			3	1.6%					2	1.8%			5	1.4%
Snohomish	1	3.4%							6	5.4%			7	2.0%
Spokane			1	0.5%									1	0.3%
Thurston	2	6.9%	8	4.3%	1		3	100.0%	12	10.7%	2	66.7%	28	8.1%
Wahkiakum			1	0.5%									1	0.3%
Whatcom			8	4.3%									8	2.3%
Yakima			1	0.5%					1	0.9%			2	0.6%
Sub-Total	28	96.6%	177	95.7%	13	92.9%	3	100.0%	108	96.4%	3	100.0%	332	96.0%
Alaska	1	3.4%	3	1.6%									4	1.2%
Arizona									1	0.9%			1	0.3%
BC			2	1.1%									2	0.6%
California			1	0.5%					1	0.9%			2	0.6%
Idaho									1	0.9%			1	0.3%
Minnesota			1	0.5%									1	0.3%
Oregon			1	0.5%	1				1	0.9%			3	0.9%
Sub-Total	1	3.4%	8	4.3%	1	7.1%	0	0.0%	4	3.6%	0	0.0%	14	4.0%
Total	29	100.0%	185	100.0%	14	7.6%	3	100.0%	112	100.0%	3	100.0%	346	100.0%

Source: BST Associates, Westport Marina data

Many of the commercial fishing vessels with annual moorage at Westport participate in more than one fishery, and the fleet average is 1.46 fisheries per vessel.

Three fisheries account for most of the activity: crab (121 vessels), tuna (71 vessels), and salmon (40 vessels). Shrimp accounts for 15 vessels and bottom fish accounts for 10, while various other species account for one to three vessels each.

There is some correlation between vessel size and the number of fisheries participated in. Commercial vessels 30 feet or less average 1.00 permit per vessel. The average number of fisheries per vessel generally climbs for each 5-foot length range, up to the 56-foot to 60-foot range; vessels in this size range average

1.65 fisheries per vessel. The 51-foot to 55-foot range is the exception, with a slightly lower average number of fisheries than either the 46-foot to 50-foot range or the 56-foot to 60-foot range.

The average number of fisheries per vessel is generally lower for larger vessels. The 28 vessels longer than 60 feet participate in a total of 39 fisheries, or an average of 1.39 fisheries per vessel. With the 86-foot to 90-foot range excluded, the average drops to 1.29 permits per vessel (for vessels longer than 60 feet).

Table 4-4: Westport Commercial Fishing Participation

Length Range	Anchovies	Blackcod	Bottomfish	Crab	Oysters	Hake	Halibut	Prawns	Sablefish	Salmon	Sardines	Shrimp	Tuna	Total Fisheries	Boats	Avg fisheries / Boat
25' or less													1	1	1	1.00
26' to 30'				2	1			1		1				5	5	1.00
31' to 35'				8	1					4			3	16	15	1.07
36' to 40'				14						8			5	27	21	1.29
41' to 45'			3	13						7		1	11	35	24	1.46
46' to 50'			4	23	1					15		3	24	70	43	1.63
51' to 55'				7						1		1	3	12	8	1.50
56' to 60'			2	36			2	1	1	3	1	3	17	66	40	1.65
61' to 65'				4			1				1		3	9	7	1.29
66' to 70'			1	6								4	2	13	9	1.44
71' to 75'													1	1	1	1.00
76' to 80'	1			3								2		6	5	1.20
86' to 90'				4		2				1		1		8	4	2.00
Over 90'				1									1	2	2	1.00
Total	1		10	121	3	2	3	2	1	40	2	15	71	271	185	1.46

All of the commercial fishing vessels with annual moorage at Westport are licensed to fish in Washington, either by the State or Tribes. Approximately 59% of the tenants are licensed in Washington only (i.e. 110 vessels), and 41% are licensed in Oregon and/or Alaska as well as in Washington (i.e. 75 vessels). (See Table 4-5).

Of the 75 vessels licensed to fish in other states in addition to Washington, 49 vessels are licensed in Oregon and 33 are licensed in Alaska (11 vessels are licensed in both Oregon and Alaska, as well as in Washington).

Table 4-5: Westport Fleet Commercial Fishing States

Permit State	Boats	%
WA	89	48%
Tribal	18	10%
Tribal, WA	3	2%
Tribal, WA, AK	1	1%
WA, OR	38	21%
WA, OR, AK	11	6%
WA, AK	21	11%
Other/Unknown	4	2%
Total	185	100%

4.1.2.1 Transient Boats

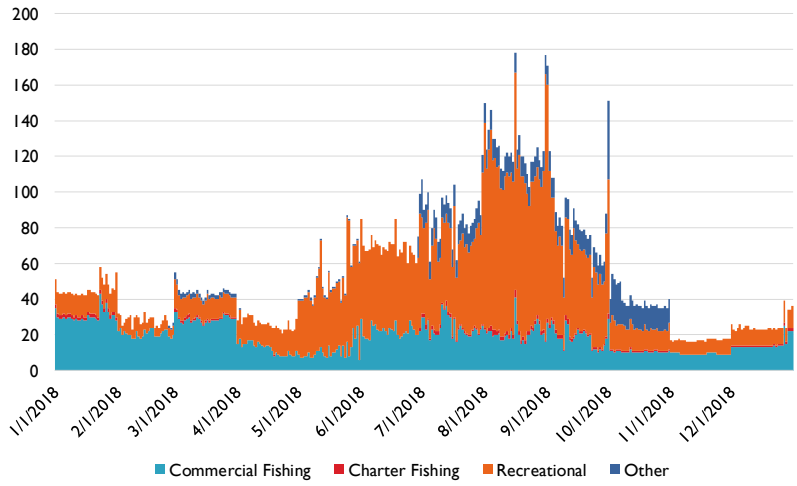
Transient moorage is an important market for the Westport Marina.

The number of transient vessels in the marina fluctuates widely throughout the year. In 2018, the number of boats paying for transient moorage on any given day varied from a low of 16 to a high of 178. (See Figure 4-2).

As described above, the Westport Marina has approximately 580 moorage spaces, including individual slips, side tie spaces, and end-tie spaces. Demand from recreational vessels is the main driver of the wide variation in daily transient counts, with most demand occurring during summer. Combining transient vessels with the current total of 346 annual moorage tenants, daily occupancy of the marina varies from a low of 62% to a high of 90%.

- Occupancy was 90% on two days, or 0.5% of all days in 2018.
- Occupancy was 80% to 89% on 23 days, or 6.3% of total days.
- Occupancy was 70% to 79% on 98 days, or 26.8% of total days.
- Occupancy was 60% to 69% on the remaining 239 days, or 65.5% of total days.

Figure 4-2: 2018 Transient Vessel Counts by Day



Source: Port of Grays Harbor data

Daily transient counts for recreational boats ranged from a low of five to a high of 149 vessels. The number of transient vessels was over 100 on five days, including two days with more than 130 boats. In contrast, there were fewer than 50 transient recreational boats on 300 days, or 82.2% of all days.

Daily demand for transient moorage for commercial fishing vessels ranged from a low of six to a high of 43 boats in 2018. On most days there were between 11 and 20 transient commercial fishing vessels; these accounted for 267 days, or 73.2% of total. On 79 days (21.6% of total) there were 10 or fewer transient commercial fishing boats, on 11 days there were 31 to 40 transient fishing boats, and on two days there were more than 41 fishing boats.

Average daily transient boat counts vary throughout the year, with the highest counts from June through September and lowest counts in November, December, February, and April. (See Table 4-6).

Combining the transient boat counts with the annual moorage tenants, average daily occupancy ranged between 63% and 69% for eight out of twelve months. The exceptions were June through September.

Monthly average transient commercial fishing vessel counts ranged between 9.3 and 30.6 boats. January saw the highest average number of commercial fishing boats, followed by March (average of 28.8 boats), July (24.3 boats), June (22.3 boats), and August (21.2 boats).

Demand from recreational vessels is especially strong in August, which saw an average of 91.7 transient recreational vessels per day in 2018. July and September each saw average of more than 50 transient recreational boats, and June saw a daily average of 47.6 transient recreational boats.

Table 4-6: Average Daily Transient Count and Total Marina Occupancy

Month	Commercial Fishing	Charter Fishing	Recreational	Other	Total	Total Occupied	Total Occupancy
January	30.6	2.0	12.7	-	45.4	391.4	67%
February	20.7	-	7.1	0.1	28.0	374.0	64%
March	28.8	1.2	11.7	2.3	44.0	390.0	67%
April	12.3	0.0	14.0	0.0	26.4	372.4	64%
May	10.9	-	40.4	1.0	52.4	398.4	69%
June	22.3	0.1	47.6	0.8	70.7	416.7	72%
July	24.3	1.4	50.2	11.1	87.0	433.0	75%
August	21.2	2.1	91.7	11.0	126.0	472.0	81%
September	18.8	1.5	51.6	11.0	82.8	428.8	74%
October	11.0	1.1	15.0	15.6	42.7	388.7	67%
November	9.3	-	7.8	-	17.1	363.1	63%
December	14.5	1.1	9.7	-	25.3	371.3	64%

Note: Total Occupancy is based on 345 annual tenants and 580 total spaces

Table 4-7: Distribution of Existing Transient Boat-Days

Boat Length	Commercial Fishing	Recreational	Other	Total
25 and under	4%	26%	0%	16%
26' - 30'	1%	24%	0%	13%
31' - 35'	3%	9%	48%	7%
36' - 40'	10%	10%	104%	17%
41' - 45'	15%	5%	0%	8%
46' - 50'	14%	7%	2%	9%
51' - 55'	8%	2%	5%	4%
56' - 60'	33%	4%	41%	14%
61' - 65'	2%	3%	0%	2%
66' - 70'	1%	2%	0%	2%
71' - 75'	5%	0%	0%	2%
76' - 80'	0%	6%	0%	3%
81' - 85'	0%	1%	0%	0%
85' and above	4%	3%	0%	3%

Source: BST Associates, Westport Marina data

4.1.3 Slip Size and Boat Size

As discussed above, the size distribution of moorage spaces does not match the size distribution of vessel sizes. Allowing substantial overhang is hard on life-expectancy of floats, and can be a problem for navigation as vessels protrude into the fairways. In addition, the size of floats and the available electrical power are typically inadequate for the boat owner's needs, particularly for the larger boats.

A large share of the boats in the commercial fishing fleet is moored in slips shorter than the boats, and this is especially true of the longer boats. (See Table 4-8).

In the shortest lengths (i.e. 35 feet or less) there are few boats that overhang the slip. Of the 21 boats in this size range, only one overhangs the slip by two feet, which is a fairly common maximum allowed at many marinas.

Much of the issue with overhang is for boats between 41 feet and 50 feet in length. These boats account for 40 of the 78 commercial fishing boats that are longer than their slips. Sixteen of these 40 boats are 41 feet to 45 feet, and these have an average overhang of three feet. An even larger number of boats in the 46 feet to 50 feet range (24 vessels) overhang their slips, and the average overhang is eight feet.

Above 50 feet, the average overhang for each 5-foot length group ranges from a low of five feet to a high of 32 feet.

Table 4-8: Boat and Slip Length, Commercial Fishing Boats

Boat Length	# of Boats	Boat Length > Slip Length	Avg Feet Difference	Avg % Difference
25' or less	1	0	na	na
26' to 30'	5	0	na	na
31' to 35'	15	1	2	7%
36' to 40'	21	2	6	20%
41' to 45'	24	16	3	8%
46' to 50'	43	24	8	19%
51' to 55'	8	5	7	17%
56' to 60'	40	14	9	20%
61' to 65'	7	4	5	10%
66' to 70'	9	5	10	18%
71' to 75'	1	1	32	80%
76' to 80'	5	2	17	28%
86' to 90'	4	4	16	24%
Over 90'	2	0	na	na
Total	185	78		

One-third of the boats in the charter fleet are moored slips that are shorter than the boats, including nearly all of the boats longer than 40 feet. (See Table 4-9).

Boats that are 40 feet or less make up 59% of the charter fleet (i.e. 17 boats). None of the boats 40 feet or less are in slips that are shorter than the boats.

Boats longer than 40 feet account for 41% of the charter fleet (i.e. 12 boats), and ten of these are moored in slips that are shorter than the boats. The difference between the boat length and slip length is relatively large, and is ten feet or more for seven of the 10 boats.

Table 4-9: Boat and Slip Length, Charter Boats

Boat Length	# of Boats	Boat Length > Slip Length	Avg Feet Difference	Avg % Difference
25' or less	1	0	na	na
26' to 30'	3	0	na	na
31' to 35'	10	0	2	7%
36' to 40'	3	0	6	20%
41' to 45'	3	2	3	8%
46' to 50'	4	3	8	19%
51' to 55'	1	1		
56' to 60'	4	4	na	na
Total	29	10		

4.1.4 Moorage Condition Assessment

In February, 2017, TransOlympic Engineering Inc. was retained by the Port to perform a condition assessment of Floats 15-21. The main purpose of this inspection was to determine if damage to these floats was due to a Corps of Engineers project to repair the breakwater, or was due to other causes.

The report concluded:

> "I do not believe that the deterioration and/or damage observed is the result of the breakwater project. Although there is an increased level of current and the breakwater is not as efficient while the maintenance and replacement of the breakwater boards is occurring, this effect is relatively minor. Instead, **I believe it can be attributed to aged floats and dock components, vessel impacts, improper mooring techniques, oversize vessels in smaller slips, deteriorated, rotten members failing due to reduced strength, and deferred maintenance**."[25]

The report specifically addressed the issue of boats mooring in slips that are too small:

> "It appears that there are several issues arising from oversize vessels being berthed in slips that are designed for smaller vessels. The mooring forces from the larger vessels, as well as the geometry of the moorings, severely stress the floats and cause damage. The problems are likely to continue if oversize vessels are moored in the smaller slips.
>
> "Vessel size is a major factor because the tonnage, impact, momentum and moorage forces increase by much more than the ratio of the length of the vessel. In other words, a 50-foot vessel has only a 25 percent increase in length compared to a 40-foot vessel. But, the tonnage could increase by 80 to 100 percent. In a sheltered cove, which is not subject to high winds or currents, there would be more leeway and it may be possible to temporarily moor larger vessels in smaller slips without damage. However, in Westport, with severe Pacific Ocean winds and currents present, the increased mooring forces will quickly cause damage.
>
> "Vessel size also raises problems due to the geometry of the moorage. A large vessel with a high gunwale tied to a mooring cleat immediately next to the vessel does not have sufficient horizontal distance to allow the line to resist lateral movement. The angles are too steep. When vessels are cross-tied to the opposite side of the finger, the forces cause severe damage to the floats. Cross-tied mooring lines transmit the force to the finger floats in a twisting or torsional fashion. Since concrete is strong in compression, but weak in tension and shear, it cracks and allows water into the interior Styrofoam core of the float. Over time, the Styrofoam core becomes saturated and water logged. The float loses buoyancy, floats unevenly, lists and rides lower in the water. In addition to damaging the floats, the large mooring line forces have resulted in moorage cleats being pulled out of the floats. The bolts are bent and the attachment points have been severely damaged."

[25] Source: Westport Marina Damage and Condition Assessment, Westport, Washington by TransOlympic Engineering Inc. Emphasis added by BST Associates

Figure 4-3: Large Boats Moored in Small Spaces

Source: TransOlympic Engineering

The condition study also revealed numerous other problems:

Figure 4-4: Broken Mooring Braces

Source: Port of Grays Harbor

Figure 4-5: Deteriorated Floats

Source: Port of Grays Harbor

Figure 4-6: Deteriorated Fender Systems

Source: Port of Grays Harbor

4.2 DEMAND FOR IN-WATER FACILITIES

4.2.1 Regional Moorage Supply

The Westport Marina competes for moorage customers with other similar facilities in the region, which is defined to include northwest Washington (Clallam, Jefferson, Grays Harbor, Pacific and Wahkiakum Counties); Oregon North Coast (Clatsop, Tillamook, Lincoln and Lane Counties), Oregon South Coast (Coos and Curry Counties) and Northern California (Del Norte and Humboldt Counties). The focus of this review is on marinas with commercial moorage availability.

The market in which the Westport Marina competes has more than 24 mooring basins which offer a total of approximately 7,100 moorage slips.[26] The Westport Marina accounts for 580 of these slips, or approximately 8% of the total inventory.

4.2.1.1 Northwest Washington

North of the Columbia River the main competition for the Westport Marina is the Neah Bay Marina, which has approximately 200 moorage slips.

The Neah Bay Marina, rebuilt in 1997, has total capacity of approximately 200 commercial boats and pleasure craft. Moorage is available for vessels from 30 feet to 200 feet in length. Approximately 40 commercial fishing vessels currently operate from Neah Bay. The Makah Tribe owns the commercial fishing dock, which was reconstructed in 2014 for $13 million. The commercial dock has a new ice plant and six hoists for vessels using the dock. Cape Flattery Fisherman's Co-op also operates a small processing plant in Neah Bay.

[26] The number of slips includes moorage for both commercial and recreational boats. The focus in this section is on marinas that provide moorage for commercial boats, but the total moorage supply is reported.

The La Push Marina is relatively small, with 90 slips. The Port Angeles Boat Haven has 410 slips but has very few commercial fishing tenants. Some marinas in Puget Sound (notably Port Townsend Boat Haven, Port of Seattle Fishermen's Terminal, a few private facilities in Seattle, the Port of Everett Marina, the Port of Anacortes Cap Sante Marina, and the Port of Bellingham Squalicum and Blaine Harbors) offer moorage for commercial fishing boats, which primarily fish in Alaska or in Puget Sound.

4.2.1.2 Southwest Washington

There are eight moorage facilities in Southwest Washington, which are located on Willapa Bay or the Columbia River. Most of the commercial fishing boats are in Ilwaco or Chinook (on the Columbia River), but there are also a few commercial fishing boats in Tokeland and South Bend (on Willapa Bay or Willapa River). Other marinas on Willapa Bay provide moorage to vessels serving the local oyster industry.

The Port of Ilwaco and the Port of Chinook, which are jointly managed, offer a total of 1,095 slips, including 737 slips at Ilwaco and 358 slips at Chinook. The marinas have a total of approximately 188 annual and 78 transient commercial tenants. The Port of Ilwaco also has a boatyard, which is being upgraded with a 65-ton TraveLift.

4.2.1.3 North Coast Oregon

The north coast of Oregon has five marinas that provide service to commercial fishing boats, with a combined total of 2,041 slips.

The Port of Astoria owns the West Mooring Basin and East Mooring Basin for commercial and recreational boats. The West Mooring Basin has space for 400 vessels, including space on linear docks and side-ties, and is primarily used by the small fleet. Most slips in the West Mooring Basin are 30 feet long or less, but there are some 36-foot, 40-foot and 50-foot slips. Dredging is planned for the next two to three years.

The East Mooring Basin has capacity for 82 larger commercial fishing boats. The East Mooring Basin has significant problems, however, including the closure of the drive-out causeway that links to moorage to land (now closed to both vehicles and pedestrians). Moorage tenants can now only access their boats by water. The cost to upgrade the causeway is estimated at $4 million.

The Port of Astoria has insufficient funds to make the required improvements. The Port estimates that operation of the two marinas generated a loss of more than $500,000 over the past two years, with operations on the Port's cargo piers effectively subsidizing the marinas. Contributing to the loss is low moorage rates. A key goal of the Port's recent strategic plan was to identify and implement a solution for the future of the East Mooring Basin, and the Port has been considering a proposed public-private option for redevelopment.

The City of Warrenton recently constructed new commercial moorage on the Skipanon River, across from the reconstructed Pacific Seafood Plant. The new moorage provides 70-foot docks, but there is concern that the width of the slips limits their full use. The City of Warrenton also built a work dock, with a crane available for use at minimal cost. Pacific Seafood also has cranes for use by commercial boats.

Several boatyards provide service in the Astoria area, including: The Port of Astoria Boatyard, Hyak Maritime, Warrenton Boatyard, and the Port of Ilwaco Boatyard.

Warrenton Boatyard operates a marine rail, and services commercial and recreational boats from 20 to 80 feet.

The Port of Newport has moorage available for approximately 700 boats at its commercial marina:

- Dock 3 – provides access to 580 ft of moorage owned by Pacific Seafood.
- Dock 5 - ~4,200 lineal feet of moorage. The main pier leading to the dock has become structurally unsound, and needs to be replaced. The capital improvement plan (CIP) is around $3 million to $5 million in next three years.
- Dock 7 was constructed in 1967, and is now over 50 years old. It provides around 4,700 lineal feet of moorage. Dock 7 needs full replacement. CIP is approximately $15 million over next five years.

The Commercial Marina provides working space and hoists for vessels, as well as upland storage for gear and supplies. According to Port records, the commercial marina barely covers O&M costs; funding for capital improvements is likely to come from State of Oregon grants.

The Port of Toledo boatyard (discussed below) provides repair services for the local and regional fleet.

The Port of Garibaldi has a marina with 277 slips, and the Port of Siuslaw has a marina with 104 slips respectively.

4.2.1.4 South Coast Oregon

Salmon Harbor is located in Winchester Bay, and is operated jointly by the Port of Umpqua and Douglas County. The marina has approximately 550 moorage slips, with most used by recreational fishermen.

In the Coos Bay area, the Charleston Marina (operated by the Port of Coos Bay) is part of a complex that includes the Charleston Shipyard, Charleston Ice, the Charleston Marina RV Park, and a Coast Guard motor lifeboat installation. The marina has approximately 448 slips, and is used by both commercial fishing and recreational boats. The Port-owned full-service boatyard is located near the Marina, and offers a 200-ton marine ways that is leased by Giddings Boat Works. The Port also has a 100-ton Travelift that lifts boats for do-it-yourself service.

The Port of Gold Beach has a marina with approximately 100 slips, used primarily by recreational boats.

The Port of Brookings has the largest marina on the south coast of Oregon (with 498 slips), and serves both commercial and recreational boats. The marina has problems with dredging and with slope stability in the walls of the basin. The Port also offers a do-it-yourself boatyard with a 50-ton lift. The Marina does not cover its operating expenses, while the boatyard essentially breaks even. The Port has upland leases with several businesses that provide the mainstay of finances for the port.

4.2.1.5 North Coast California

In Crescent City, the Crescent City Harbor District (CCHD) Marina has 234 slips that range in size from 30 to 70 feet, as well as side-tie space for vessels up to 125 feet. The marina was rebuilt after the 2011 tsunami at a cost of $34 million. The CCHD borrowed $5 million for the local share, but was not able to generate the revenue needed to cover the payment, and efforts to increase rates were successful.

The CCHD has a do-it-yourself boatyard served by a 30-ton Travelift and a dry storage area for light repairs. CCHD also leases property to Fashion Blacksmith, which operates a full-service shipyard. The yard is on approximately 2.5 acres, and has a 100′ by 34′ Syncrolift with a 230-ton capacity. Fashion Blacksmith serves customers from West Coast and Alaska

In the Humboldt Bay area, the Humboldt Bay Harbor District has a marina with 237 slips and the City of Eureka has a marina with 158 slips. Slips are available from 20 feet to 70 feet. There are approximately

120 commercial fishing boats in the Harbor. The Harbor District also operates a do-it-yourself boatyard at Fields Landing, which includes approximately seven acres of paved and fenced area and a 150-ton Marine TraveLift. The Fields Landing yard does not typically cover its costs, and Harbor District staff continues to look for ways to increase revenues through enhanced or additional serv

ices, such as boat/trailer storage.

Table 4-10: Moorage Supply in Westport Market Area

Region/Name	County	Slips	% of Region
Northwest Washington			
La Push Marina	Clallam	90	1%
Port of Neah Bay, Makah Marina	Clallam	200	3%
Port of Port Angeles Boat Haven	Clallam	410	6%
subtotal		700	10%
Southwest Washington			
Westport Marina	Grays Harbor	580	8%
Bay Center	Pacific	50	1%
City of South Bend Boat Haven	Pacific	8	0%
Port of Chinook	Pacific	358	5%
Port of Ilwaco	Pacific	737	10%
Port of Peninsula/Nahcotta Boat Basin	Pacific	96	1%
Port of Willapa Harbor, Tokeland Marina	Pacific	62	1%
Port of Willapa, Raymond	Pacific	25	0%
Elochoman Slough Marina	Wahkiakum	230	3%
subtotal		2,146	30%
North Coast - Oregon			
Port of Astoria	Clatsop	412	6%
City of Warrenton/Hammond	Clatsop	548	8%
Port of Garibaldi	Tillamook	277	4%
Port of Newport	Lincoln	700	10%
Port of Siuslaw	Lane	104	1%
subtotal		2,041	29%
South Coast - Oregon			
Winchester Bay (Port of Umpqua, Salmon Harbor)	Douglas	550	8%
Charleston Harbor (Port of Coos Bay)	Coos	448	6%
Port of Gold Beach	Curry	100	1%
Port of Brookings	Curry	498	7%
subtotal		1,596	22%
Northern California			
Humboldt Bay Harbor District	Humboldt	237	3%
City of Eureka	Humboldt	158	2%
Crescent City	Del Norte	234	3%
subtotal		629	9%
Region Total		7,112	100%

Source: BST Associates, websites

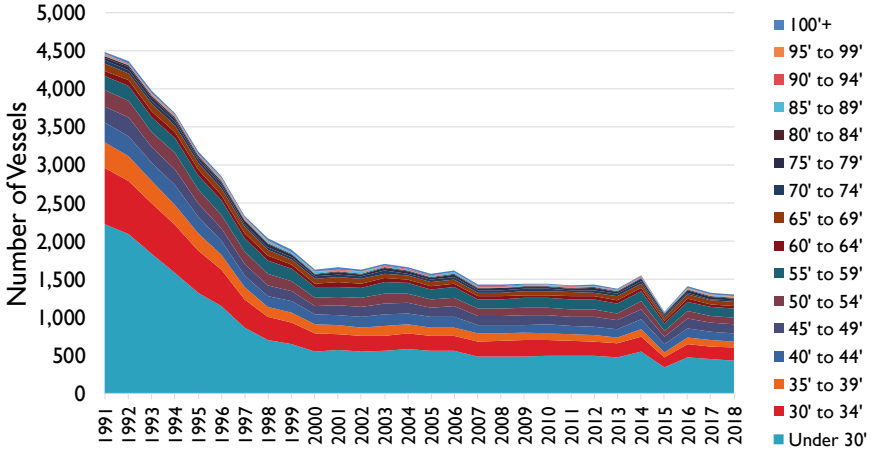
4.2.2 Regional Fishing Fleets

4.2.2.1 Washington

The Washington commercial fishing fleet shrank substantially between 1991 and 2018, dropping from nearly 4,500 vessels to less than 1,300, and representing a decline of 71%.

Most of the drop occurred between 1991 and 2000, when the fleet declined by approximately 2,850 vessels, or nearly two-thirds of the fleet. The fleet size remained relatively steady from 2000 through 2006, averaging approximately 1,640 boats. From 2006 through 2018 the fleet size slowly declined, and from 2014 through 2018 it averaged 1,330 vessels.

Figure 4-7: Washington Commercial Fleet Size Trends



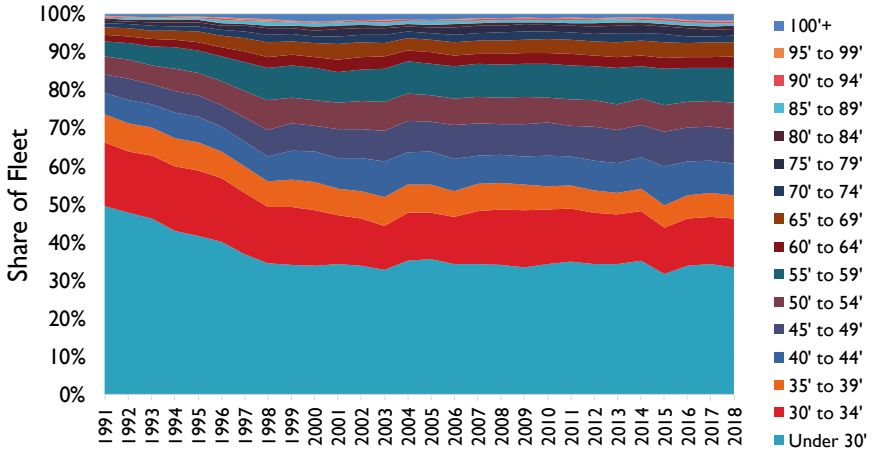
Source: WDFW data, BST Associates

The average length of vessels in the Washington commercial fishing fleet has changed substantially over the past several decades, most notably with a decline in the share of the fleet accounted for by smaller boats.

In 1991, half of the commercial fishing boats in Washington were 30 feet or less; in 2018 their share fell to approximately 33%. The share of boats in the 30-foot to 39-foot range also fell, dropping from 24% in 1991 to 19% in 2018.

The share of boats in the 40-foot to 49-foot range increased from approximately 10% to 17% during the same period, while boats in the 50-foot to 59-foot range grew from 9% to 16%. Boats 60-feet and longer grew from 7% of the Washington fleet in 1991 to 14% in 2018.

Figure 4-8: Size Distribution of Washington Commercial Fishing Fleet



Source: WDFW data, BST Associates

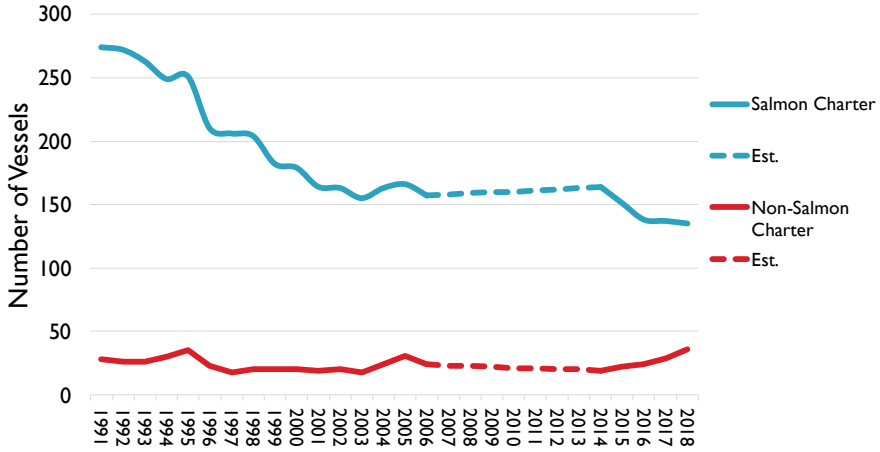
4.2.3 Charter Vessels

The Washington charter fishing fleet has declined substantially over the past three decades, dropping from 302 vessels in 1991 to 171 vessels in 2018.

Essentially all of the decline has been in salmon charter fleet, which was half the size in 2018 as it was in 1991. Most of this decline occurred during the 1990s and early 2000s, when the salmon charter fleet dropped from 274 boats in 1991 to 155 boats in 2003. Data for 2007 through 2013 was not available, but the available data shows the salmon charter fleet was the same in 2014 as it was in 2005, approximately 165 boats. From 2014 through 2018 the salmon fleet shrank again, falling from 165 vessels to 135 vessels.

The non-salmon charter fishing fleet is much smaller than the salmon fleet, but it has not seen the same decline. In fact, the number of non-salmon charter fishing fleet was essentially the same in 2017 as it was in 2018. Between 1991 and 2018 the non-salmon fleet varied between 18 and 36 boats, and averaged 24 boats licensed each year. The share of all charter fishing boats accounted for by the non-salmon fleet grew from approximately 9% in 1991 to 21% in 2018.

Figure 4-9: Washington Charter Fleet



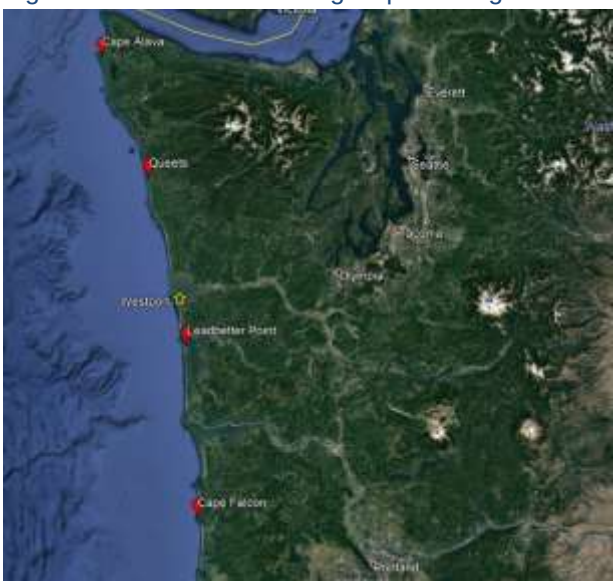
Source: WDFW data, BST Associates

The Pacific States Marine Fisheries Commission compiles survey data from Washington, Oregon, and California on recreational coastal fishing effort. In Washington the data is divided into 12 regions, including four regions in the ocean, three regions in the Columbia River, and four in Grays Harbor. For Westport, the most relevant ocean regions are Leadbetter Point to Queets, and Cape Falcon to Leadbetter Point. In Grays Harbor the key regions are Outer Grays Harbor (Buoy 13 to US101 bridge) and Westport Boat Basin. (See Figure 4-10).

The data includes two numerical estimates, boat trips and angler trips. Boat trips are divided into private/rental boats and party/charter boats.

Ports are divided into two regions, Southern Washington and Northern Washington. Westport is included in Southern Washington.

Figure 4-10: RecFIN Fishing Report Ranges

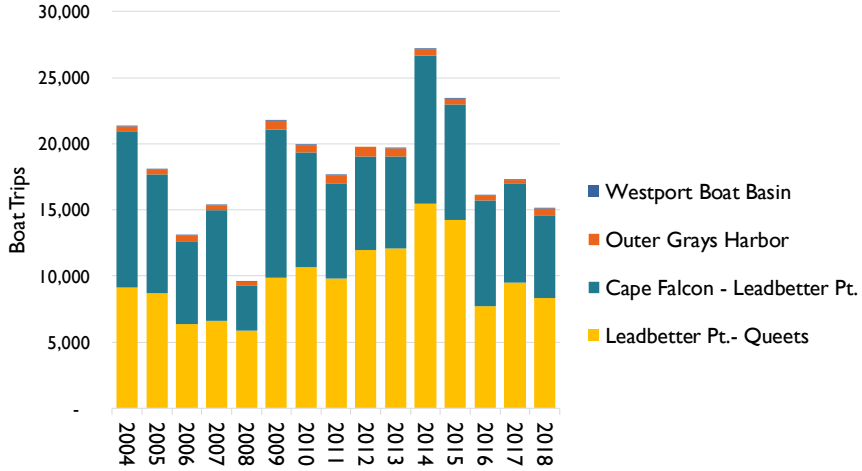


Source: Google Earth, BST Associates

From 2004 through 2018 the number of recreational fishing boat trips in the Westport area averaged approximately 18,300 per year, and ranged from a low of 9,600 to a high of 27,200. Peak years were 2014 and 2015, while 2016 through 2018 saw lower than average numbers of boat trips. (See Figure 4-11).

In recent years the largest share of these fishing trips occurred in the ocean region running from Leadbetter Point (entrance to Willapa Bay) to Queets. Westport is located approximately halfway between these two points. The next largest number of recreational boat fishing trips occurred in the region running from Cape Falcon (Oregon) to Leadbetter Point. Astoria, Warrenton, and Ilwaco are located approximately half way between these two points. A small number of trips also occur in Outer Grays Harbor (entrance channel to US 101 bridge) and the Westport Boat Basin.

Figure 4-11: Recreational Fishing Boat Trips by Ocean Region

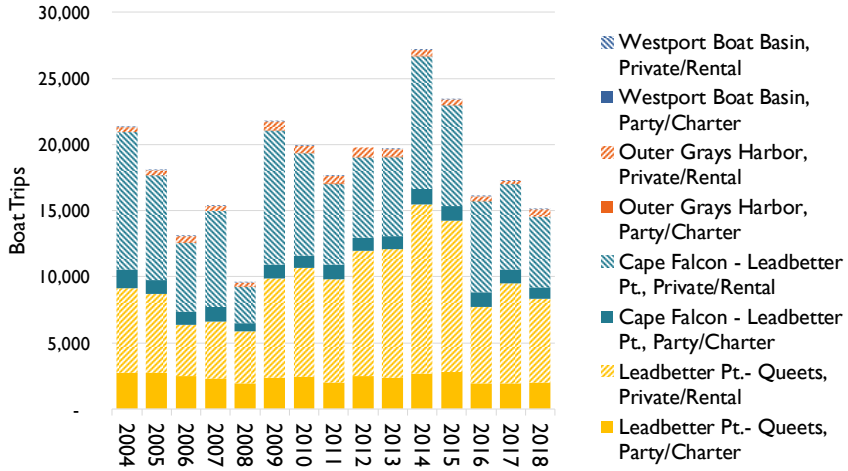


Source: Pacific States Marine Fisheries Commission

Figure 4-12 presents the same data as in Figure 4-11, but divided by type of boat; this shows that the majority of recreational fishing boat trips take place in private or rental boats. On average, private/rental boats accounted for 81% of all recreational fishing boat trips from 2004 through 2018, and party/charter boats accounted for 19%. In most years these share remained relatively steady.

Party/charter boats accounted for a larger share of boat trips in the Leadbetter Point to Queets region than in the other regions, averaging 25% from 2004 through 2018. In contrast, in the Cape Falcon to Leadbetter Point region, party/charter boats accounted for an average of 13% of boat trips. The higher share in the Leadbetter Point to Queets region is a reflection of the importance of the Westport charter fleet.

Figure 4-12: Recreational Fishing Boat Trips by Boat Type



Source: Pacific States Marine Fisheries Commission

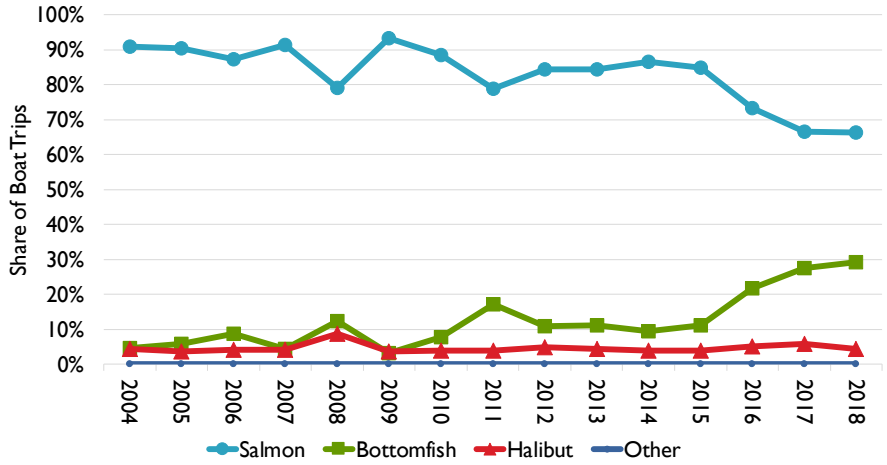
Salmon has traditionally been the primary target of the charter fishing industry, but groundfish has become increasingly important.

As illustrated in Figure 4-13, for most of the period from 2004 through 2010 approximately 90% of charter boat trips in the region from Leadbetter Point to Queets were targeting salmon. From 2011

through 2015, however, this share dropped to an average of 84%, and after 2015 it continued falling, to a low of 66% in 2018.

Groundfish trips grew from just 5% of all charter boat trips in the Leadbetter Point to Queets region in 2004 to 28% in 2017 and 29% in 2018. Halibut accounted for an average of 5% of charter trips from 2004 through 2018, a share that remained steady throughout the period. All other species accounted for a negligible share of charter boat trips in the region.

Figure 4-13: Target Species, Leadbetter Point to Queets, Party/Charter Boats



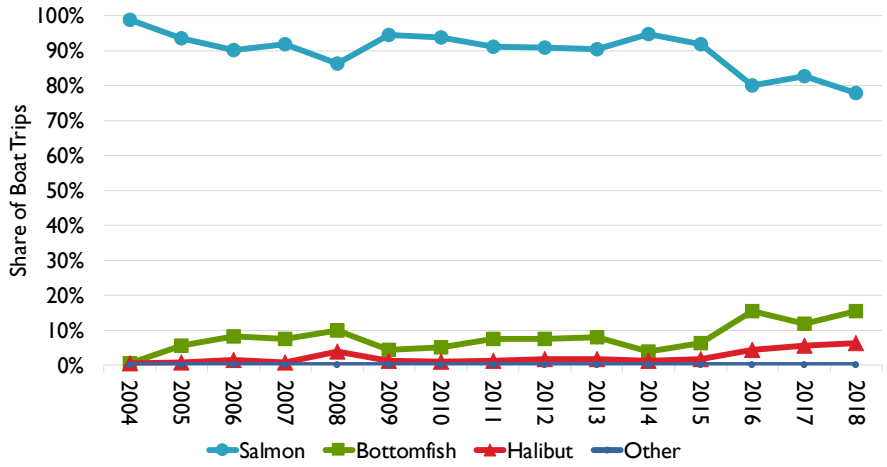
Source: Pacific States Marine Fisheries Commission

Groundfish trips grew from just 5% of all charter boat trips in the Leadbetter Point to Queets region in 2004 to 28% in 2017 and 29% in 2018. Halibut accounted for an average of 5% of charter trips from 2004 through 2018, a share that remained steady throughout the period. All other species accounted for a negligible share of charter boat trips in the region.

Salmon is also the main species targeting by fishing trips in private boats, in the region from Leadbetter Point to Queets. Like with charter boats, the share of trips accounted for by salmon has declined over recent years, but not to the same extent. Salmon accounted for 99% of private boat trips in 2004, and dropped to less than 90% in only one year between 2004 and 2015. This share dropped to 80% in 2016, and remained near 80% in both 2017 and 2018.

Groundfish trips accounted for approximately 5% to 10% of private boat fishing trips in the region from 2005 through 2015, but jumped to as much as 16% from 2016 through 2018. Halibut generally accounted for 1% to 2% of private boat trips from 2004 through 2015, but grew to 6% of trips in 2017 and 2018. As with charter boats, all other species account for a negligible share of private boat trips.

Figure 4-14: Target Species, Leadbetter Point to Queets, Private/Rental Boats



Source: Pacific States Marine Fisheries Commission

Charter salmon fishing was a major industry for Westport in the past. In 1961 there were approximately 138 charter boats fishing out of Westport, and over the next few seasons this number grew to 250. Following that peak a series of issues began to impact the charter fleet, including declining salmon returns and the Boldt decision.

Westport now serves as the homeport for 29 vessels in the charter boat fleet. The existing operators have diversified and now fish for albacore tuna, halibut, lingcod, and many varieties of rockfish in addition to salmon. In the spring, whale-watching trips leave from Westport to view the California grey whales as they journey from Baja, Mexico, to their northern feeding grounds in the Bering and Chukchi seas.

4.2.3.1 License Buyback Programs

4.2.3.1.1 Washington Salmon Licenses

In the early 1990s Washington's coastal salmon fisheries were in a state of crisis. Overcapitalization of the fleet, loss of habitat, and unusual weather events led to harvest cutbacks under the Endangered Species Act. In response, the State of Washington ran a series of buyback programs in the troll, charter and Columbia River gillnet fisheries.

The first of these buyback programs was run in 1995. Through this initial buyback the state bought 190 troll licenses, 83 Columbia River gillnet licenses, and 23 sport charter licenses. In 1996 and 1997 the State ran a second buyback program in the same fisheries, during which the state bought 72 troll licenses, 52 Columbia River gillnet licenses, and 18 charter licenses. A third program with an expanded scope was run in 1998; this program also included seine, gill net, and reef net fishermen in Puget Sound. This third program resulted in the purchase of 100 troll licenses, 70 Columbia River gillnet licenses, 20 charter licenses, 172 Puget Sound gillnet licenses, 22 Puget Sound seine licenses, and 7 reef net licenses.

In total, the drop in the number of licenses from 1994 included:

- 54% of the troll licenses,
- 41% of the Columbia River gillnet licenses,
- 23% of the charter licenses
- 7% of the Puget Sound reef net licenses
- 16% of the Puget Sound gillnet licenses, and

- 14% of the Puget Sound seine licenses.[27]

4.2.3.1.2 Pacific Coast Groundfish Buyback

In the early 1990's Congress authorized a $46 million buyback program aimed at reducing the number of vessels and licenses for selected fisheries in Washington, Oregon, and California. These fisheries included the groundfish trawl fishery and associated corollary fisheries of Dungeness crab and pink shrimp.

The program was funded through a $10 million appropriation from Congress and $36 million from a loan to be repaid by through a fee submitted by fish sellers. The industry fee system imposed fees on the value of future groundfish landed in the trawl portion (excluding whiting catcher-processors) of the Pacific Coast groundfish fishery. It also imposed fees on coastal Dungeness crab and pink shrimp landed in the California, Washington, and Oregon fisheries for coastal Dungeness crab and pink shrimp.

Vessels that were purchased under this program were permanently removed from the commercial fleet. The program permanently removed 91 vessels and 239 fishing permits.[28]

4.2.4 Recreational Vessels

The following sections explore some of the key factors impacting existing and future recreational use at Westport.

The number of recreational boats in Grays Harbor County that are 16 feet or longer grew substantially between 1990 and 2006, but dropped from 2009 through 2018. Low, mid, and high forecasts indicate that the total number of vessels in the recreational fleet will not recover to the former peak over the next twenty years. (See Figure 4-15).

The recreational fleet (16 feet and longer) grew from 1,200 boats in 1990 to more than 1,800 boats in 2006, 2007, and 2009. After 2009 the fleet size contracted steadily, falling to less than 1,500 boats in 2017 and 2018.

Small boats account for most of the fleet; boats 16 feet to 20 feet accounted for more than 75% of the fleet in most years from 1990 through 2018. Boats 16 feet to 20 feet accounted for 90% of the fleet growth between 1990 and 2006, but they also accounted for 87% of the decline between 2009 and 2018. Vessels of this size are typically stored on trailers, and do not require permanent marina moorage at Westport.

Boats 21 feet to 30 feet accounted for approximately 20% of the Grays Harbor recreational fleet in most years from 1990 through 2018. The number of vessels in this size range did not grow as fast as the smaller boats, accounting for 8% of the growth from 1990 through 2006 and 12% of the growth from 2009 through 2018. Depending on the exact size of the boat, this part of the fleet may or may not require marina moorage at Westport; vessels 26 feet or less tend to be stored on trailers, while longer boats typically require wet moorage.

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[27] Muse, Ben. Washington State Commercial Salmon Fishery Buyback Programs, 1995-1998. March 10, 1999. Produced for the Alaska Commercial Fisheries Entry Commission.

[28] National Oceanic and Atmospheric Administration. *50 CFR Part 600 [Docket No. 041029298–5168–03; I.D.052004A] RIN 0648–AS38*, Federal Register /Vol. 70, No. 133. Wednesday, July 13, 2005.

Very few recreational boats in Grays Harbor County are longer than 30 feet. From 1990 through 2018 these boats accounted for less than 3% of the fleet in most years. They also accounted for less than 2% of the growth from 1990 through 2006 and less than 2% of the decline from 2009 through 2018.

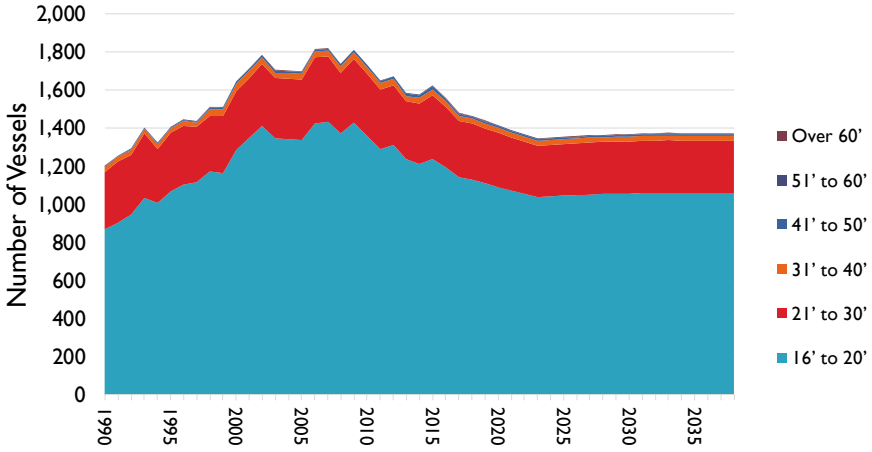
Forecasts of the Grays Harbor County recreational fleet were developed using population forecasts from the Washington Office of Financial Management (OFM), and the number of boats per capita for various size ranges. These forecasts assume that the number of boats per capita remains steady from 2018 through 2038.

Under the OFM low population forecast, the number of recreational boats in Grays Harbor County is projected to fall by 230 between 2018 and 2038. Of this drop, 76% is vessels 16 to 20 feet and 20% is vessels 21 feet to 30 feet; the remainder is boats longer than 30 feet.

Under the OFM mid population forecast, the number of recreational boats is projected to fall by 93 between 2018 and 2038, with 75% of the drop due to vessels 16 to 20 feet and 21% due to vessels 21 feet to 30 feet.

Under the OFM high population forecast, the number of recreational boats in Grays Harbor County is projected to grow by a total of 59. Vessels 16 to 20 feet account for 80% of the growth and vessels 21 feet to 30 feet account for 19%; very little growth is from vessels longer than 30 feet.

Figure 4-15: Grays Harbor County Recreational Fleet Trends & Forecast, Mid



Source: WA Dept. of Licensing, WA Office of Financial Management, BST Associates

4.3 SUMMARY

Westport Marina presently has 580 slips, which is more than in 2009, when there were 546 slips. This occurred because some slips end and side ties were re-designated to smaller lengths.

4.3.1 Vessel Characteristics

The vessels in each of the three main use types fall into distinct length groupings.

- Recreational vessels are the smallest, with more than 90% of the fleet 40 feet or less. Most of recreational annual tenants are from the Puget Sound area (King, Pierce, and Thurston Counties) followed by Grays Harbor County and other locations.
- Most charter vessels are between 31 feet and 50 feet long. Most owners live in Grays Harbor County, followed by King, Pierce and Thurston counties, among other locations.

- Most commercial fishing boats are longer than 40 feet. The majority of commercial fishing vessels are from Grays Harbor County; with others from western Washington, eastern Washington or from out of state. Many of the commercial fishing vessels with annual moorage at Westport participate in more than one fishery; crab, tuna, salmon, and shrimp account for most of the licenses. All of the commercial fishing vessels with annual moorage at Westport are licensed to fish in Washington, and a significant share are also licensed to fish in Oregon and/or Alaska.

4.3.2 Utilization Rate

Transient moorage is an important market for the Westport Marina, but the number of transient vessels in the marina fluctuates widely throughout the year. Combining transient vessels with the current total of 346 annual moorage tenants, daily occupancy of the marina varies from a low of 62% to a high of 90%. Occupancy was 80% or higher on 25 days (6.8% of all days in 2018).

On most days, the existing marina configuration has more slips than needed to meet existing and future demand. However, the length and width of the current slips does not meet existing requirements. A comparison of the existing moorage spaces with the annual commercial fleet shows that 70% of the moorage spaces are 40 feet or less, but only 24% of the fleet (i.e. 47 vessels) is 40 feet or less.

Overhangs are problematic for most boats over 40 feet in length, and becomes more problematic as the boat length increases.

4.3.3 Condition of the Marina

Many of the floats in the Westport Marina are in poor shape due to "to aged floats and dock components, vessel impacts, improper mooring techniques, oversize vessels in smaller slips, deteriorated, rotten members failing due to reduced strength, and deferred maintenance."

4.3.4 Assessment of Competitive Marinas

The Westport Marina competes for moorage customers with other similar facilities in the region from northwest Washington to Northern California. There are 24 mooring basins in this region that provide service to commercial fishing vessels, with approximately 7,100 moorage slips. The Westport Marina accounts for 580 of these slips, or approximately 8% of the total inventory. Westport Marina's hinterland is smaller than in the Columbia River or the Oregon Coast.

5 FACILITY DEMAND FOR UPLAND FACILITIES

Potential upland facilities for which potential demand was studied included: a vessel haul-out facility, boatyard, working dock(s), storage (gear and boat), fish processing, and marine retail. These potential upland uses are evaluated in this section.

5.1 OVERVIEW

Vessel operators in Westport indicated a desire for more services at Westport, similar to what is publicly provided at other marinas in the competitive region. These include:

- Boatyard
- Working dock/area
- Public hoists
- Storage (covered and open)

BST Associates surveyed selected commercial fishing ports from Northern California to Alaska. These included:

- California
    - Humboldt Harbor
    - Crescent City
- Oregon
    - Brookings
    - Charleston
    - Newport
    - Astoria
    - Warrenton
- Washington
    - Ilwaco
    - Neah Bay
    - Port Angeles
    - Port Townsend
    - Port of Seattle Fishermen's Terminal
    - Port of Anacortes Cap Sante Marina
    - Port of Bellingham Squalicum Harbor
    - Port of Bellingham Blaine Harbor
- Alaska
    - Ketchikan
    - Juneau
    - Wrangell
    - Seward
    - Homer
    - Kodiak.

This survey confirmed that the services/facilities that the fishermen want at Westport are available at or near most of the competitive marinas, and generally for a minimal charge.

Recent planning studies at other marinas also emphasize the need for these amenities. For example, the Port of Seattle Fishermen's Terminal Plan (2014) surveyed fishermen to find needed facilities and services. Some of the survey questions and responses included:

- Which services that are currently located at Fishermen's Terminal are most important to your business?
  - Hoists, cranes & forklifts (51%)[29]
  - Interior unheated storage / net sheds (41%)
  - Free parking (36%)
  - Net repair area (25%)
  - Exterior gear storage (25%)
  - Shipyard (23%)
  - Dining and drinking (18%)
  - Accounting, legal & insurance (11%)
  - Maritime training & licensing (10%)
  - Laundromat (10%)
  - Mailboxes / business center (2%
- Which services that are not currently located at Fishermen's Terminal would have the greatest positive impact for your business?
  - Commercial chandlery/marine supplies (51%)
  - Machine shop, welding, metal fabrication (36%)
  - Hardware store (33%)
  - Marine electronics sales, maintenance & repair (22%)
  - Bank (20%)
  - Diesel engine sales, maintenance & repair (18%)
  - Heated indoor storage & shop space (16%)
  - Other (15%)
  - Hydraulic services (13%)
  - Grocery Store (11%)

5.2 BOATYARD

At the time of the last Westport Marina Demand Study (2009), the Port was considering the development of a haul-out and boatyard in Westport. The boatyard was to be developed in conjunction with Westport Shipyards, and would have included a Marine TraveLift large enough to accommodate Westport Shipyard's needs as well as meeting the needs of the commercial and recreational fleets in the area. Local vessel owners still express interest in a boatyard, but Westport Shipyard is no longer interested.

5.2.1 Boatyard Characteristics

The following section describes typical characteristics of boatyards.

Smaller boat yards (defined as yards with a lift capacity up to 100 tons) typically serve boats from 20 to 60 feet in length, with the majority between 30 and 50 feet long. Smaller yards typically serve the local

[29] 51% of respondents indicated a need for hoists, cranes & forklifts.

market. Westport fishermen report using local repair yards in Hoquiam, or yards in South Bend, Ilwaco, Astoria, Port Angeles or elsewhere in the region.

Larger yards (defined as yards with a lift capacity greater than 100-tons) typically serve boats from 30 feet to more than 100 feet in length, with the majority of lifts between 50 and 90 feet long.[30] Larger yards typically serve a wide market region (West Coast to Alaska and occasionally the Pacific Islands). Larger vessels that call at Westport primarily use repair yards in Oregon (Coos Bay, Toledo, Reedsport, et al.) and Washington (Port Angeles, Port Townsend, Anacortes, Seattle, et al.). (See Figure 5-1).

Figure 5-1: Distribution of Boatyard Lifts by Length of Boat

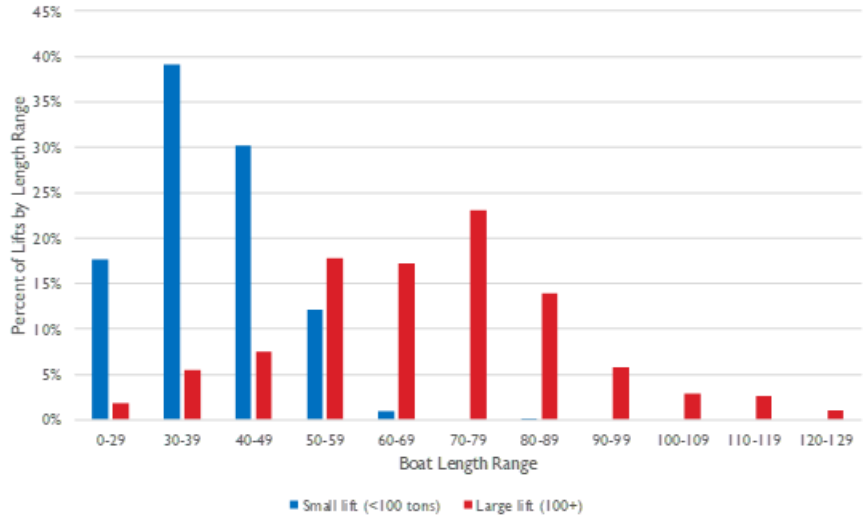


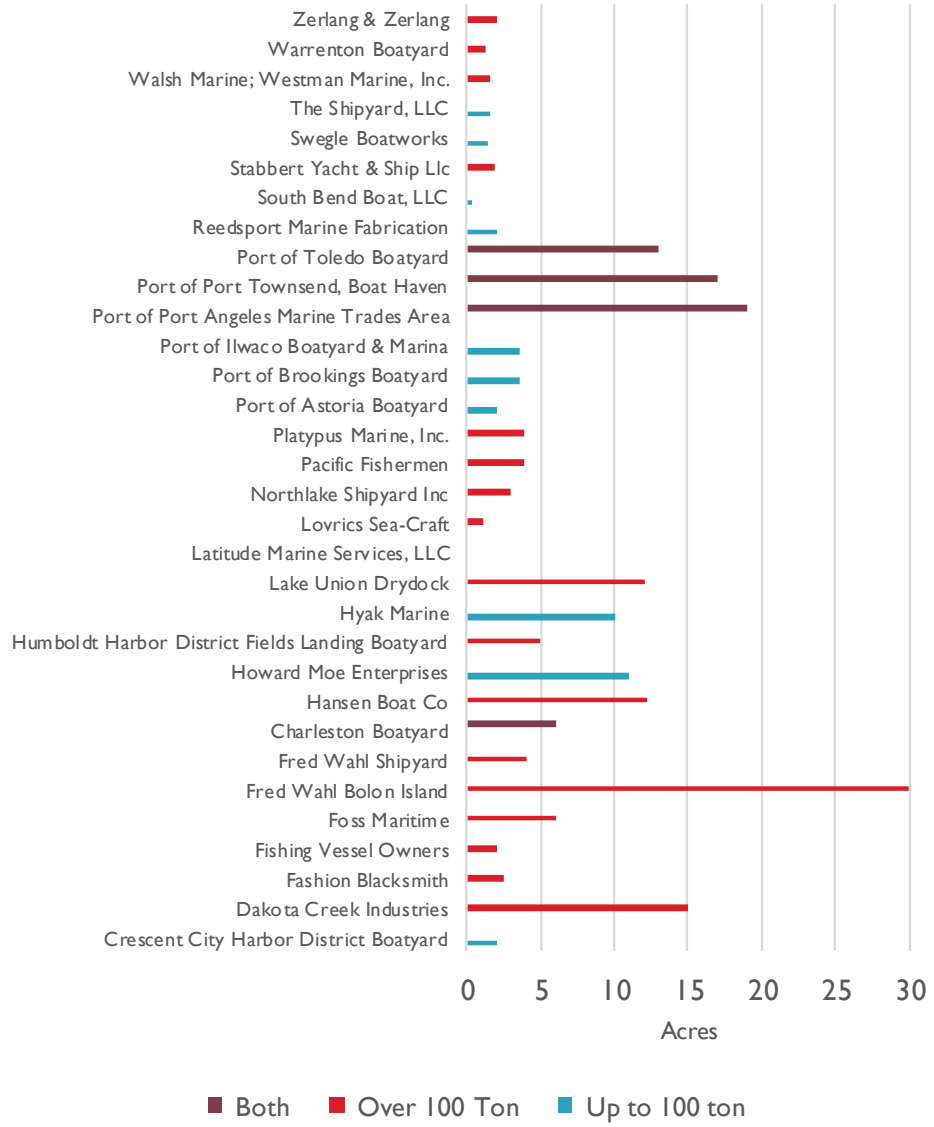
Figure 5-2 summarizes the land requirements for key boatyards/shipyards that provide services for commercial fishing boats in Northern California (Humboldt Bay and Crescent City), Oregon (Brookings to Astoria and in Columbia River) and Washington (Columbia River to Port Angeles around the Puget Sound to Blaine).

The average size of yards, by lift capacity, is:

- Up to 100 tons ~3.7 acres
- Over 100 tons ~ 6.3 acres
- Yards with both sizes ~12.0 acres

[30] Based on research conducted by BST Associates in Coos Bay, Toledo and Port Angeles.

Figure 5-2: West Coast Boatyards (acres)



5.2.2 Smaller Yards

There has been a decline in the number of smaller repair yards in Washington during the past ten years. In addition, operational changes have also occurred at several smaller yards.

- Little Hoquiam Shipyard (LHS), located along the Hoquiam River, historically focused on new buildings (crab boats and purse seiners, as well as yachts and other vessels). However, as the number of new builds declined, LHS re-focused on refits and repair. The facility includes 11 acres of storage, a 56,000 square foot building and a ramp for launching boats. The owner is currently selling the yard, and hopes that it will remain as a boat yard.
- The Shipyard, also located along the Hoquiam River, has three marine rails on 3.5 acres of land (1.5 acres used for boatyard). This facility services commercial and recreational boats.
- The Port of Astoria's Boatyard, which has an 88-ton Travelift, was down-sized from around 6 acres in 2012 to around 2 acres in 2018, in order to accommodate log exports. The Port

considered eliminating the yard due to environmental issues and has explored ways to merge port operations with other local boatyards.

- The Port of Astoria exited its lease at the North Tongue Point industrial dock in 2017. Hyak Maritime purchased the property and is using the for vessel fabrication and repair.
- The Warrenton Boatyard has two marine rails (50-ton and 175-ton capacity), on approximately 1.2 acres.
- The Port of Ilwaco's Boatyard & Haul Out Facility, has recently received a grant from Washington State to replace its aging 50-ton TraveLift (40 years old) with a new 88-ton TraveLift. This will require a new pier system for the lift, estimated at $1.2 million (unfunded as of this writing). The facility consists of 3.5 acres.
- The Port of Port Angeles has a 70-ton lift at the Boat Haven on 1.6 acres, which provides service to the local fleet.

5.2.2.1 Larger Yards

The supply of larger repair yards has increased significantly in recent years.

- The Port of Port Angeles is currently developing the Marine Trades area, which encompasses approximately 19 acres. There are two mobile hoists: a 300-ton and a 500-ton, owned respectively by Platypus Marine and Westport Shipyards. These firms are now working together and targeting the fishing industry, as well as government and recreational boats. The Port recently completed a washdown facility for large vessels and is planning additional improvements.
- JT Marine (located in Vancouver, Washington) recently added a 350-ton drydock to complement its existing 1,200-ton lift. The company intends to increase service for commercial fishing boats and other commercial vessels.
- Port of Toledo (Oregon) has developed a 13-acre boatyard with an 85-ton mobile lift and a 660-ton mobile lift. The facility cost approximately $15.5 million and was funded mainly by state grants. The Port is currently constructing a large building to facilitate indoor operations, including fabrication and painting.
- Fred Wahl Marine (FWM) recently constructed a new repair facility in Reedsport, Oregon, located on approximately 30-acres on Bolon Island (across the river from the existing FWM Reedsport facility, which remains in use). The facility includes a 660-ton mobile lift and a large building for indoor operations (partially financed by a grant from the State of Oregon).
- Several regional boatyards/shipyards serving the commercial fishing and non-fishing fleets ceased operations in the past ten years, including: Astoria Marine Construction Company (AMCO), Zidell Marine (Portland, OR), Foss (Rainier, OR), Sundial Marine (Troutdale, OR), and Martinac Shipyard (Tacoma, WA), among others. Reasons for ceasing operations included market forces as well environmental cleanup expenses.

Options for the Port of Grays Harbor:

- Acquire a trailer for emergency repairs (using the boat ramp), which may also require a washdown facility.
- Engage with private sector operators in Grays Harbor to maintain and enhance local capabilities, perhaps with a financial investment or access to public funds (industrial bonds, grants et al).
- Allow existing market forces to continue, pursue a regional approach with the boatyards in Grays Harbor and in the Columbia River.

For the Port of Grays Harbor, the pros and cons associated with a boatyard include:

- Pros
  - There is strong interest in a do-it-yourself boatyard by some tenants of Westport Marina.
  - Do-it-yourself boatyards are provided at many West Coast harbors to serve local boats
- Cons
  - Westport has limited land available to build a boatyard. If the Port chooses to build a boatyard, it would likely focus on smaller boats.
  - There is significant competition from other established boat yards.
    - Local boatyards are available (The Shipyard and Little Hoquiam Boatyard in Hoquiam)
    - To the south, there are several boatyards (in Astoria, Warrenton, Ilwaco and elsewhere in the Columbia River and farther south along the Oregon coast) that serve recreational and commercial boats.
    - To the north, facilities in Port Angeles and Port Townsend as well as in Puget Sound are significant competitors.
  - The Westport annual tenants are the most likely users of a boatyard in Westport; there are 171 boats between 30 feet and 50 feet long (small yard) and 89 boats over 50 feet long (large yard). A boatyard may be able to capture up to 50% of the small yard market and perhaps 20% of the large yard market. The local market is relatively small. Boats to the north and south have several competitive facilities to choose from.
  - There are few marine service technicians and businesses located in Westport to serve the Westport fleet. Attracting labor would require steady work throughout the year, which is uncertain.
  - There are few marine service technicians and businesses located in Westport to serve the Westport fleet. Attracting labor would require steady work throughout the year, which is uncertain.
  - Do-it-yourself yards face a number of constraints. Many private yards prohibit boat owners from hull work. Some public yards require staff to assure that highest and best use practices are being met (e.g., Port Townsend), which increases operating costs.
  - Financial Performance
    - Boatyards are very costly to construct. A recent study concluded that would take up to $12.5 million to prepare the WSDOT SR 520 Casting Basin Site for ship building, ship repair or maintenance.[31]
    - Public provision of boatyard is breakeven at best, there is generally no funding generated by the yard for initial construction or replacement.
    - Grant options are more favorable in Oregon and Alaska (this is changing in AK as oil revenue declines) than in Washington.

[31] Highest and Best Use Industrial Study for WSDOT SR 520 Casting Basin Site prepared by Nichols Marine Services for the City of Aberdeen, 2017

5.3 WORK DOCK AND HOIST

Most U.S. West Coast harbors serving commercial fishermen have a work dock and one or more public hoist. The work docks serve several functions, including the loading and unloading of gear, supplies and product; some also allow an area for vessel/gear repair and maintenance.

Westport currently has 14 private hoists, seven of which are required by lease with Port of Grays Harbor to be available to the public. (See Table 5-1)

Some fishermen report that there are problems accessing the publicly available private hoists, particularly at the end of a season. When the processing plant that owns the hoist has shifted to a new species, fishermen seeking to use the hoist are turned away.

The alternative is for fishermen to roll their catch by hand-truck, from the berth to the impromptu staging areas used by buyers. Among other issues, this can cause traffic jams and parking constraints in Westport, which the City would like to resolve. The fishermen believe that a public hoist would be beneficial to meet their needs, and that these are provided at other West Coast ports. It would also reduce traffic/congestion from current practices.

The potential usage of the hoist is unknown (how many boats would use the hoist and how many times per year etc.). A survey would help define potential need of a public hoist.

Table 5-1: Hoists in Westport Marina

Tenant	Rates	# Hoists	Hoists for Public use
RPMM	$.25-.40/ lb.	2	2
D&M Live Crab		2	
Ocean Gold	$.25-.40/ lb.	3	
WA Crab Producers	$.25-.40/ lb.	5	5
Westport Seafood	$.25-.40/ lb.	2	
Total		14	7

Source: Port of Grays Harbor

Discussions with processors revealed a split between the need/desire for a public hoist. Some feel it would not matter to their business; others expressed concern about additional hoists.

A survey of other competitive harbors reveals that most offer public hoists at minimal cost. Examples of work docks and hoists in other relevant harbors include:

- The Warrenton Marina provides a work dock (approximately 240 feet long x 25 feet wide), truck access on a one-way route and a crane (~ 1.5-ton to 2-ton capacity). Charges are minimal. Hoists are also available at Pacific Seafood's plant, located across from the marina.
- Port of Astoria provides hoists and a work dock area at Pier 2, and hoists are also available at Bornstein's plant, located between Pier 1 and Pier 2.
- Port of Newport has three locations with hoist and work dock:
  - Swede's Dock provides 240 feet of floating moorage for boat maintenance,
  - Hoist Dock & Storage Area provides 220 ft of dock face, 4 hoists (2 swing, 2 crane) and approximately 1.3 acres of storage. Large and small vessels can perform gear changes, off-loading fish product and undertake other maintenance and repair work.
  - The International Terminal has 870 feet of dock face and 26 acres of uplands (17 improved, 9 unimproved) that provide around 3 acres for storage fishing gear. There is public access to at least one hoist.

- The commercial fishing dock in Neah Bay is approximately 120 feet by 130 feet, connected to shore by a 24-foot by 380-foot drivable causeway. The dock includes a 5,700 square foot metal building with two offices, six hoists and an ice house.

Options for the Port of Grays Harbor:

- Find a solution to end of season problems at publicly available hoists,
- Provide a central point for unloading via hand truck without a hoist, which would alleviate the parking problems. One potential location could be at the end of Patterson Street.
- Build a public hoist on an existing fixed dock, either in Westport or in another location (Grays Harbor Historical Seaport etc.).
- Build a new fixed dock and provide a hoist (Port solely or with a partner)

The pros and cons associated with a public hoist are as follows:

- Pros
  - There is strong interest in a public hoist by some tenants of Westport Marina.
  - Publicly-owned hoists are provided throughout the West Coast with a minimal charge, and are subsidized by the taxpayer.
  - Provision of a public hoist or improved loading facility would resolve the parking problems that currently exist.
- Cons
  - There are seven hoists available for public-use in Westport. The issue appears to be the charge for use of the hoist and availability at the end of the season
  - Financial Performance
    - Public provision of a hoist is generally subsidized at other harbors.
    - The capital and O&M costs of providing a hoist are minimal compared to the cost of building a fixed dock

5.4 STORAGE (GEAR & BOAT)

There are several storage areas in Westport, including:

- Open storage, operated by the Port of Grays Harbor, is currently available at Fire Cracker Point. Port staff report that stalls have been fully utilized for the past two years. Pending expansion by RPPM, relocation of the storage yard would be required to a site just southeast of the existing storage site.
- Private open storage is provided by Ocean Gold, Washington Crab Producers and D&M Crab. Covered storage is provided at Holland Center. These sites are also well utilized.

Review of other competitive harbors reveals that most harbors offer storage at a minimal cost. As an example, the Port of Newport provides:

- Hoist Dock & Storage Area –approximately 58,000 square feet (1.3 acres) of storage.
- Newport International Terminal - Storage area of around 2 acres for fishing gear.

Options:

- Replace existing storage (gravel base) at site next to existing location with improved lot (asphalt).
- Consider adding covered storage (containers or buildings)

The pros and cons associated with storage are as follows:

- Pros
  - Viewed as very important by fishermen
  - Market is strong
  - Open and covered storage is provided in most ports
  - Financially sound (initial port analysis shows break-even in 10 years)
- Cons
  - None

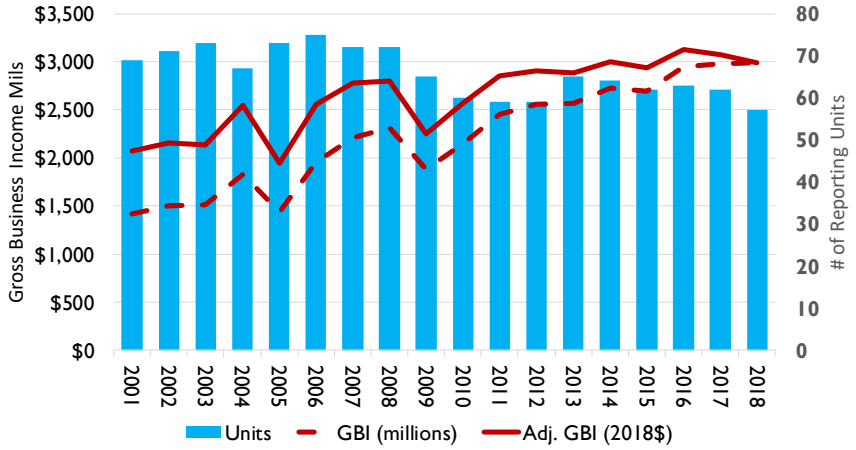
5.5 SEAFOOD PROCESSORS/WHOLESALERS AND COLD STORAGE OPERATORS

5.5.1 Processors

Businesses engaged in seafood processing, wholesaling or cold storage operations in Washington state performed well over the past several decades, as illustrated in Figure 5-3.

Gross business income (GBI) for fish/seafood processors in Washington State increased at 5.2% in nominal terms (unadjusted for inflation) and 2.5% per year in real terms (after adjusting for inflation) from 1994 to 2018. Growth in GBI has slowed in recent years. The industry is consolidating in Washington (and along the U.S. West Coast), and the number of processors in Washington declined from 75 firms in 2006 to 57 in 2018.[32]

Figure 5-3: Gross Business Income Washington State Seafood Processors



Fish/seafood processing facilities in Westport are described in Table 5-1.

Table 5-2: Seafood Processors in Westport

Name	Site Address
Clear Ocean Seafood	1601 Yearout Drive
Ocean Gold Seafoods Inc.	1804 Nyhus North
Pacific Seafood - Westport LLC	220 E Dock Street
Washington Crab Producers Inc. (Dba Pacific Seafood)	1980 North Nyhus
Pacific Seafood – Westport LLC	1989 N Nyhus Street
RPMM LLC Dba Jolly Roger Seafoods	1840 Year Out Drive
Merino's Seafood Market LLC	301 East Harbor St
Westport Seafood Inc.	609 East Neddie Rose Drive
Westport Seafood Inc.	210 Lamb St.

Source: Washington State Department of Agriculture

Pacific Seafood has been one of the driving forces in this consolidation, and is a key stakeholder in Westport. Figure 5-4 shows the locations of Pacific Seafood's seafood processing plants and distribution centers along the West Coast.

[32] Firms that report taxes to Washington State Department of Revenue

Figure 5-4: Pacific Seafood Facility Locations

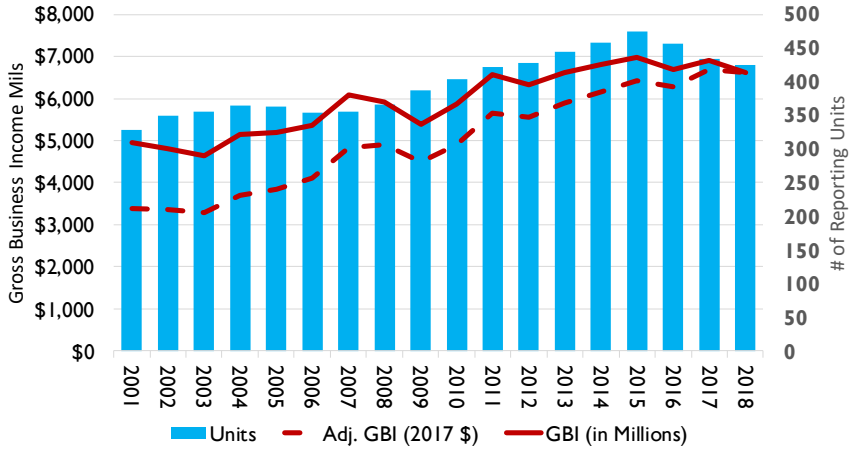
Most processors interviewed for this analysis indicated that existing facilities were sufficient for their needs but future expansion may occur.

5.5.2 Wholesalers

From 2001 through 2018, gross business income (GBI) for seafood wholesalers in Washington increased at an average annual rate of 2.8% in nominal terms (unadjusted for inflation) and 0.3% per year in real terms (after adjusting for inflation). GBI averaged $6.2 billion from 2011 to 2018. (See Figure 5-5).

The number of seafood wholesalers in Washington State has exceeded 400 since 2010, although it declined from its peak in 2015.

Figure 5-5: Gross Business Income Washington Seafood Wholesalers

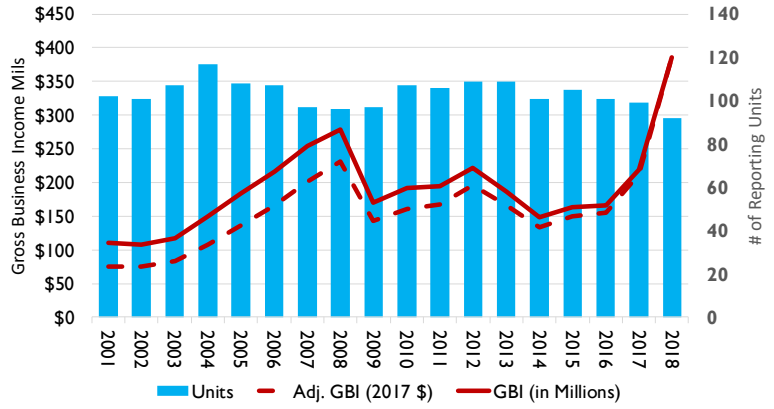


Much of the wholesaler activity includes fish and crab buyers. The live crab market is important to local fishermen, hence the request for a hoist and work dock. Larger processors were either against providing facilities to help the live crab market or indicated that they could develop a business plan to enter the live crab market, if it made financial sense.

5.5.3 Fish/Seafood Merchants

Gross business income of Washington retail fish and seafood markets increased rapidly between 1994 and 2018, growing at an average annual rate of 5.8% in nominal terms and 3.1% in real terms. The path of this growth was challenging, however. Growth was strong from 1994 until the recession of 2008, and then entered a plateau until 2016. Since 2016, growth has been dramatic. The number of firms engaged in this activity fluctuated between 90 and 110 from 2001 through 2018, but declined steadily from 2012 to 2018. (See Figure 5-6).

Figure 5-6: Gross Business Income Washington Fish/Seafood Markets



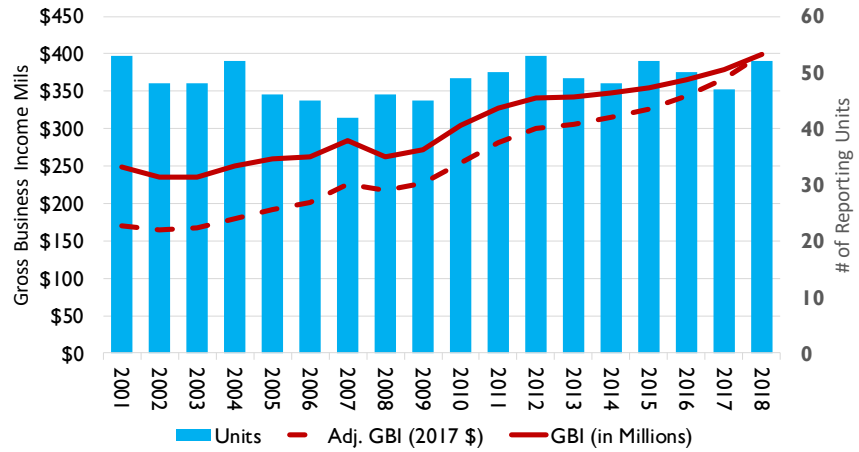
There are several seafood markets in Westport including Merino's Seafood Market and Seafood Connection, among others. These are important businesses that intertwine commercial fishing and tourism.

5.5.4 Cold Storage Operators

Gross business income for cold storage operators increased at 3.4% in nominal terms (unadjusted for inflation) and 0.8% per year in real terms (after adjusting for inflation). (See Figure 5-7).

The number of processors in Washington State has declined from 71 operators in 1984 to 52 in 2018.

Figure 5-7: Gross Business Income Washington Refrigerated Warehouses



The industry has experienced two trends:

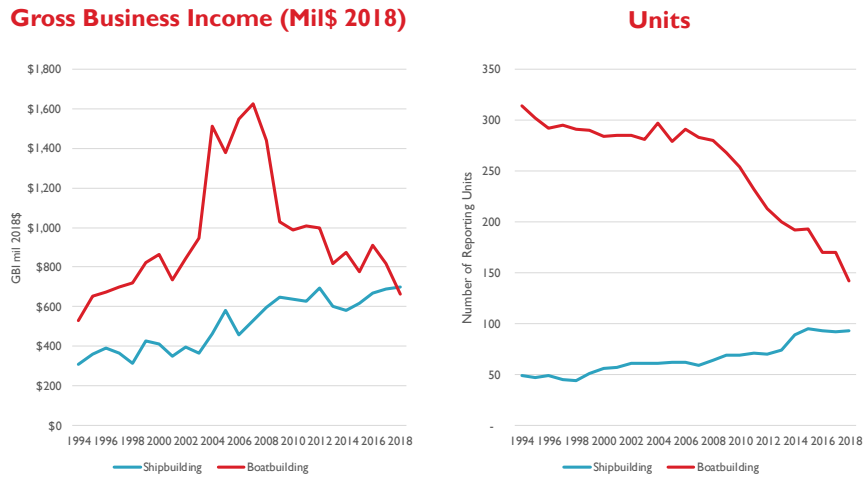
- Consolidation. It should be noted that this category also includes facilities used by the fruit/agriculture industry, which is consolidating. It also entails replacing smaller facilities with much larger facilities with cutting edge technology.
- Innovation. An example of this type of facility is NewCold's Automated Coldstore built in Tacoma in 2017. The plant, which will be used by Trident Seafoods, will offer "automated storage and retrieval systems (ASRS), to maintain and stock the high-bay warehouse. The processes to be put to use in the coldstore will be sustainable, traceable and fully-integrated with the strategies of NewCold's customers. The warehouse freezer will be one of the largest in the United States, with a storage capacity of over 25 million cubic feet".[33]

In 2008, Ocean Cold constructed a 95,000 square foot building in Westport for cold storage and processing on land leased from the Port at Firecracker Point. This facility meets current needs at Westport but is supplemented by other facilities in the region. Seafood products from Westport seafood producers also move through cold storage facilities on the I-5 corridor and beyond. For example, Pacific Seafood has a processing and distribution facility at Woodland adjacent to the Lineage Logistics cold storage plant.

5.5.5 Boat/Ship Building

Gross business income for the ship building and repair industry in Washington grew from $309 million in 1994 to $701 million in 2018. This amounts to annual growth of 6.1% per year in nominal terms and 3.5% in real terms. The number of firms engaged in the industry nearly doubled, from 49 in 1994 to 93 in 2018. Much of this activity is focused on federal vessels (Navy, Army, Coast Guard et al) as well as state (Washington State ferries) but there is also a considerable amount of private sector operations (including commercial fishing boats).

Figure 5-8: Gross Business Income Washington Ship/Boat Building



Boat building has experienced a different trajectory, with explosive growth from 1994 until the recession in 2008 and a decline since. GBI increased at 3.5% per year in nominal terms and 0.9% in real terms

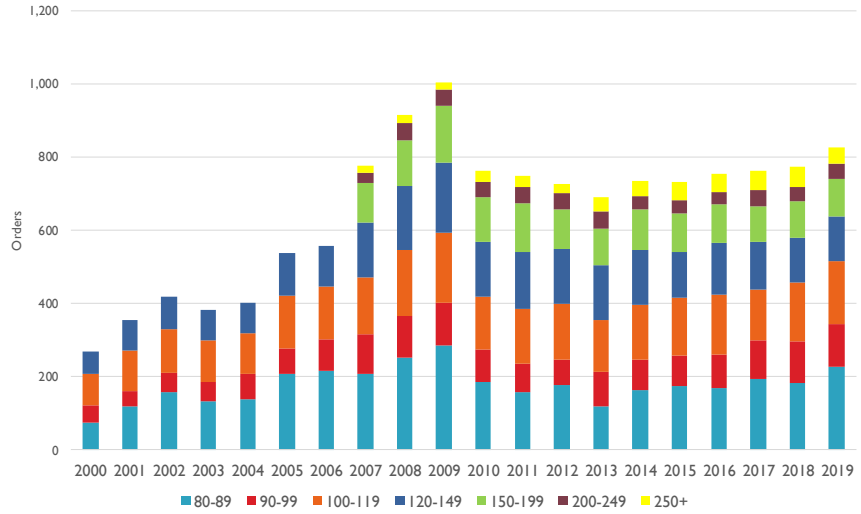
[33] Source: Trident Seafoods lead customer for NewCold's cutting-edge cold storage facility, seafoodsource.com, by Madelyn Kearns, February 8, 2017

from 1994 to 2018. The number of firms decreased dramatically, falling by half from 314 firms in 1994 to 142 in 2018.

Showboats International Magazine prepares an estimate of the construction of mega-yachts and super yachts by surveying all known builders of these vessels. The fleet grew rapidly, at an average annual rate of 13.7%, from 2000 to 2009. The recession caused orders to fall by 24% (from 1,005 in 2009 to 763 in 2010). From 2010 to 2019, sales have been growing at average annual rate of 0.9%. Growth from 2010 to 2019, illustrated in Figure 5-9, is as follows:

- 80-89 feet: 2.2% per year,
- 90-99 feet: 3.1% per year,
- 100-119 feet: 2.0% per year.
- 120-149 feet: -2.4%, and,
- 150+ feet: -0.2% per year.

Figure 5-9: Megayacht Market Trends



Westport Shipyard was originally a builder of fishing boats in the 35-foot to 55-foot range, but converted to building megayachts. Westport has four models at the present time, including, 112-foot, 125-foot, 130-foot, and 164-foot motor yachts. The smallest three sizes are built in Westport, while the largest boat is built in Port Angeles. According to GGH Inc., Westport Shipyard employs an estimated 275 employees at the Westport manufacturing facility, making it the largest private employer in primary industries in Grays Harbor County. Westport had also operated at a facility in Hoquiam, but this was closed in 2015. The facilities currently operated by Westport Shipyard include:

- Westport, Washington (Enclosed square feet: 170,000, Paint building: 60,000 sq. ft., Acres: 12)
- Port Angeles, Washington (Enclosed square feet: 100,000, Acres: 3)
- Port Angeles, Washington, Cabinet/Joinery Shop (Enclosed square feet: 130,000)

An interview with Westport Shipyard revealed that the existing facility is satisfactory, as is, to meet future plans.

5.5.6 Retail (Marine)

Westport has two retail stores specializing in marine and fishery supplies, including Englund Marine & Industrial Supply (101 W. Wilson Ave.) and Harbor Marine Supply (2013 Nyhus St).

Englund Marine relocated to a larger facility at the corner of Wilson and Montesano in 2018. The warehouse increased from 6,000 square feet to 15,000 square feet. There is also an expanded showroom among other improvements (e.g., a hydraulic hose room and space for fiberglass cutting, among other improvements).

These firms appear to meet the retail needs of the local commercial, charter and recreational fleets.

5.5.7 Vacant Land

The Port of Grays Harbor owns approximately 11.9 unleased acres in eight parcels located south of the marina. (See Figure 5-10).

Figure 5-10: Westport Marina Available Property

In addition to the uses discussed above, the Port could utilize some of the property as follows:

- Parking – long-term parking and seasonal overflow parking are needed to facilitate better utilization of the existing parking fronting the marina.
- RV Park – several other coastal marinas have successful RV parks. However, there are a number of privately owned RV parks in the Westport area.

5.6 SUMMARY

Commercial fishmen in Westport would like to have access to several types of facilities, including:

- Adequately sized moorage with electrical capability,
- Boatyard,
- Working dock/area,
- Public hoists, and
- Storage (covered and open).

These are typically provided at other commercial harbors along the West Coast and in Alaska. The ability to provide these facilities is dependent on availability of resources (specifically, financial capability and developable land sufficient in size and configuration on which to build them).

There are seven hoists available for public-use in Westport, but these are owned and operated by the processors. The Port could potentially provide an additional hoist in an alternate location, but the Port would likely have to subsidize the purchase and the operation and maintenance of the hoist. Public provision of a hoist is generally subsidized at other harbors.

A work dock represents a much greater expense than a hoist. It is unlikely that a dock would generate significant revenue, so the capital cost and O&M costs of providing the dock would be borne by the Port, and, therefore the taxpayers of Grays Harbor County.

Open storage provided by the Port at Fire Cracker Point is full, and may be displaced by expansion of existing businesses. Several operators also provide storage, but these are also essentially full. The Port could consider replace the existing gravel storage lot with a new paved lot adjacent to existing location. The Port could also consider adding covered storage. Both alternatives are likely to be financially sound.

A boat repair facility at Westport would need to be subsidized by the Port. As an alternative, the Port could work with existing operators in the area to maintain and enhance local capabilities, or simply allow market forces to work. The difficulties the Port would face in providing a repair facility include: competition from existing yards, a lack of qualified workers in the area, constraints on do-it-yourself boatyards, and financial performance.

6 CONSIDERATIONS FOR FUTURE DEVELOPMENT

This concluding chapter presents several items the Port could consider in moving forward with development at Westport. This analysis includes a review of recent development patterns, the relative size of Westport Marina in terms of both revenues and economic impact, and the financial performance of competitive marinas.

6.1 RECENT IMPROVEMENTS

Approximately $8.6 million in capital improvements were undertaken at Westport Marina between 2008 and 2019 (see Table 6-1).

The Port has leveraged its financial resources with available outside sources of funding. Approximately half of these improvements were funded by the Port of Grays Harbor and the other half with outside resources (local, state and federal grants). This will likely be the case for financing addition improvements in the next ten tears and beyond.

Table 6-1: Westport Marina Improvements (2008-2019)

Year	Project	Amount
2008	Equipment Acquisition	$16,084
2008	Marina Pump-Out Replacement	$105,713
2008	Boat Basin Master Plan	$132,873
2009	Boat Launch Float Rehab	$260,053
2010	Equipment Acquisition	$20,114
2010	Marina Float 17 Restroom Roof Rehab	$26,893
2011	Viewing Tower Replacement	$801,176
2012	Marina Office Roof Replacement	$7,944
2012	Video Surveillance	$25,959
2014	Firecracker Point Outfall	$690,543
2014	Float 17 Electrical Upgrade	$123,646
2014	Video Surveillance	$19,160
2014	Yearout Dr Lot Clearing/Grading	$60,956
2015	Equipment Shed Expansion	$139,426
2015	Parking Lot Improvements	$76,693
2016	Floats 9, 19 & 21 Electrical Upgrades	$386,022
2017	Bankline Reconstruction	$982,507
2017	Computer Server	$6,001
2017	Float Signs	$10,066
2017	Marina Management Software	$21,094
2019	Boat Launch Parking Lot Improvements (In Process)	$1,272,045
2019	Float 20 Gangway Rehab	$14,198
2019	Float Lighting Improvements	$8,893
2019	Garbage Platform	$80,830
2019	Marina Dredging (In Process)	$2,452,560
2019	Restroom Construction-across from Float 9 (In Process)	$205,170
2019	Yearout Drive Paving	$638,419
	Total	$8,585,037

Source: Port of Grays Harbor

It should be noted that this list does not include capital improvements that were financed and constructed by Port tenants at Westport.

6.2 FINANCIAL AND ECONOMIC CONSIDERATIONS

6.2.1 Economic Performance

The economic importance of Westport Marina is significant to Grays Harbor County. According to *The 2013 Economic Impact of the Port of Grays Harbor*, Westport Marina accounts for the following shares of total Port impacts:

- 40% of total jobs,
- 31% of personal income,
- 40% of business revenue,
- 35% of local purchases, and
- 31% of state and local taxes.

Improvements to the Marina are paramount to maintaining and enhancing the Port's economic impact.

Table 6-2: Port of Grays Harbor Economic Impacts (2013)

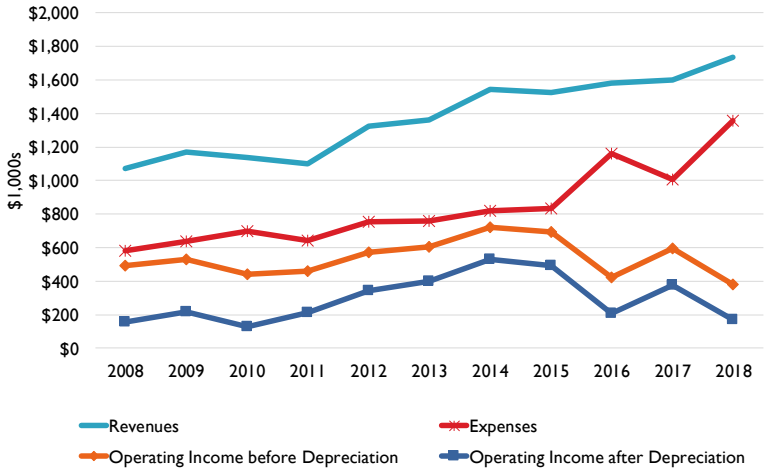
Category	Marine Cargo	Commercial Fishing	Recreational Boating	Real Estate	Total	Westport Marina Impact	Westport Marina % of Port
Jobs							
Direct	574	1,067	137	950	2,727	1,204	44%
Induced	645	442	81	440	1,608	523	33%
Indirect	305	543	27	493	1,368	570	42%
Total Jobs	1,524	2,052	245	1,882	5,704	2,297	40%
Personal Income ($1,000)							
Direct	$36,239	$38,968	$3,693	$40,005	$118,906	$42,661	36%
Induced	$79,654	$27,894	$7,546	$32,256	$147,350	$35,440	24%
Indirect	$14,860	$27,730	$704	$31,866	$75,161	$28,434	38%
Total	$130,754	$94,592	$11,943	$104,127	$341,417	$106,535	31%
Business Revenue ($1,000)	$143,488	$203,537	$23,548	$193,440	$564,013	$227,085	40%
Local Purchases ($1,000)	$31,513	$45,522	$2,099	$57,060	$136,194	$47,621	35%
State and Local Taxes ($1,000)	$12,291	$8,892	$1,123	$9,788	$32,093	$10,015	31%

Note: Westport Marina is sum of commercial fishing and recreational boating
Source: The 2013 Economic Impact of the Port of Grays Harbor, Martin Associates, 2014

6.2.2 Financial Performance

Westport Marina has performed well financially over the past ten years. When marina operations and upland leases are combined, operating income at the Westport Marina averaged $537,000 per year before depreciation (2008-2018), which amounted to 39% of average marina revenues during the same time period.

Figure 6-1: Westport Marina Financial Trends (Includes Property)

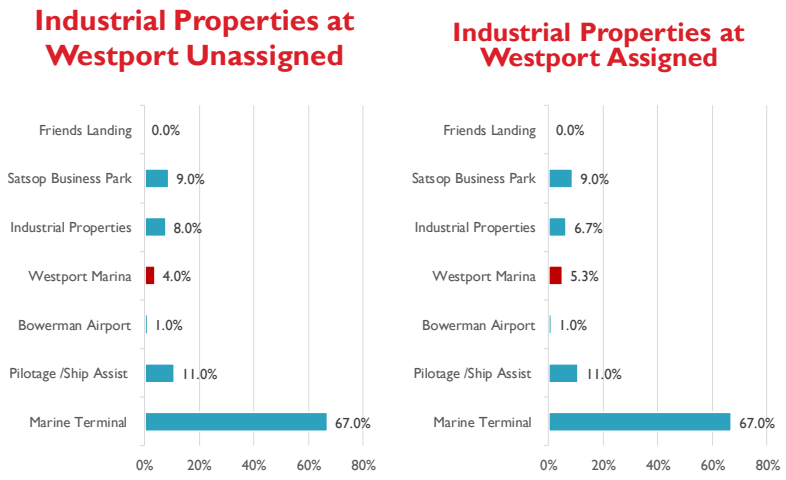


Source: Port of Grays Harbor

While the Westport Marina financial performance is impressive, it would only be sufficient to support a 20-year revenue bond of approximately $4.0 million,[34] which is close to the level improvements funded by the Port over the past ten years. In evaluating potential investments at Westport, it is imperative that the Port balance the need for those investments with maintaining the ability to respond to emerging opportunities and needs at other lines of business.

Westport Marina generates a small share of overall Port gross revenues, i.e. 4.0% of Port revenue without industrial leases and 5.3% with industrial leases. (See Figure 6-2). BST Associates evaluated the finances for competing marinas and found that net revenues typically range from losses to slightly positive, but inadequate in most cases to address capital replacement.

Figure 6-2: Port of Grays Harbor Revenue Sources by Share (%)



Source: Port of Grays Harbor 2018 data

[34] Washington State requires ports to use a debt service coverage factor of at least 1.35, assumes a bond rate of 2%.

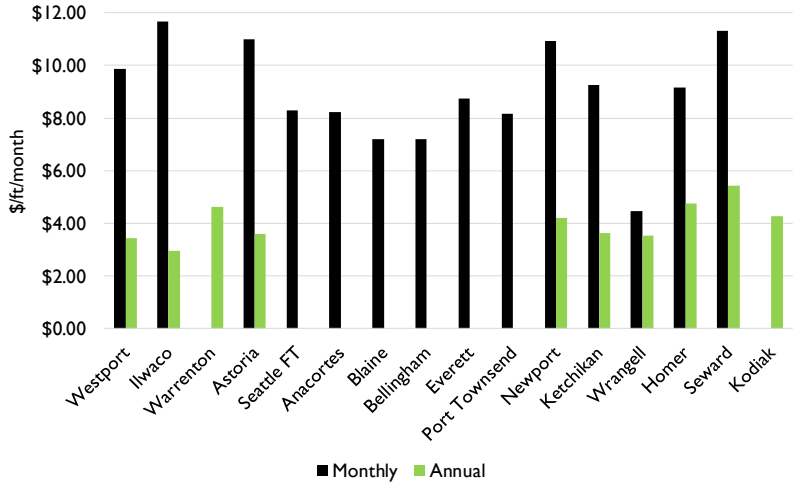
6.3 ASSESSMENT OF COMPETITIVE MARINAS

Westport Marina competes for moorage and upland customers with other similar facilities in the region that runs from northwest Washington to northern California. There are 24 mooring basins in this region that provide service to commercial fishing vessels, with approximately 7,100 moorage slips. The Westport Marina accounts for 580 of these slips, or approximately 8% of the total inventory.

Most of the coastal marinas were built more than 30 years ago, and several have significant problems with the condition of moorage facilities. With the declining size of the fleet, the number of slips now far exceeds the demand for moorage. This mismatch between supply and demand has caused rates to be much lower than in other areas (such as Puget Sound). As a result, financial resources are constrained at most marinas; revenues barely cover O&M costs at most of these marinas, and are unable to support capital improvements. Other sources of funding are required to finance capital improvements.

Coastal marinas tend to offer a significant discount for annual moorage, when compared to daily or monthly rates. As a result, most boats take advantage of these discounts and sign up for annual moorage. The Westport Marina annual rate (prepaid) is $3.44 per lineal foot per month. Other marinas in the competitive region charge between $2.94 and $4.61 per lineal foot per month for an annual customer. In contrast, rates in Puget Sound for commercial fishing vessels are based not discounted, and the monthly rate ranges from $7.21 per foot per month to $8.75 per foot per month. (See Figure 6-3).

Figure 6-3: Commercial Moorage Rates at selected Marinas



Source: BST Associates

Commercial boats represent the majority of moorage demand in Westport. These boats are sensitive to changes in moorage rates, and competitive forces could limit Westport's ability to increase moorage rates to help pay for capital improvements. In addition to low moorage rates at competing marinas, there tend to be significant numbers of vacant slips at coastal marinas except during the peak season. The continuing challenge to the Port is how to improve operating income enough to finance additional capital investment.

As discussed above, commercial marinas on the West Coast do not generate sufficient funds to cover infrastructure improvements. In addition, most marinas are 30 to 50 years old and are in poor condition. As the director of the Port of Port Townsend recently noted:

> "Many of our facilities, like those across the nation, were built during the "golden age" of infrastructure construction and subsequent economic growth between the 1930s and early 1960s.

> The challenge is easily stated, but difficult to remedy: We lack enough resources to restore, replace or repair aging infrastructure."[35]

Sources of funds for marina improvements differ significantly between states. In particular, Oregon has significant funds available from the state sources. Washington state funding sources are generally limited to cross-subsidies from other lines of business, GO bonds, Revenue Bonds, IDD Tax Levy Bonds, or local, state and federal grants. The lack of outside resources in Washington will impact the overall funding for improvements to Westport Marina.

The Port's business model is to leverage net income and work with private and public funding partners in order to fund improvements at Westport Marina. However, the Port's ability to finance from the marina revenues is constrained; the current stream of net revenue available for debt service would only support a 20-year revenue bond of approximately $4.0 million.

The capital costs required to improve Westport Marina are not known at this time, but they will likely be significant. This will require difficult choices in prioritizing projects. The Port's Strategic Plan presents a useful tool in making these decisions.

6.4 PORT STRATEGIC PLAN

The Port of Grays Harbor 2017 Strategic Plan discusses "Mission Driven Priorities", and describes the Port mission as [36]:

> *PGH mission: To best utilize our resources to facilitate, enhance and stimulate international trade, economic development and tourism for the betterment of the region.*

The diverse infrastructure and public assets of the Port of Grays Harbor have created opportunities for economic growth and stability for the Grays Harbor community by attracting investment that results in job development and economic activity for the region. The Port's priority is to generate economic activity in a sustainable environment that improves the quality of life in Grays Harbor County. We measure our success by the amount of investment attracted to the region, the quality and quantity of jobs retained and created and the improvement of quality of life for the citizens through public access, economic opportunity and environmental stewardship.

Key Business Strategies

- Protect and responsibly manage Port assets Retain and grow existing tenants
- Provide fair and consistent policies for all users Recruit compatible, yet diverse users
- Foster partnerships, both public and private, that invest in public infrastructure to generate private investment in facilities and operations
- Maintain existing infrastructure
- Promote local job creation
- Investment, Jobs, Community

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[35] Port of Port Townsend commissioners approve $6.194 million operational budget, Peninsula Daily News, by Jeannie McMacken, October 28, 2018. The Port of Port Townsend was able to pass an IDD Tax Levy, which will generate approximately $15 million over a 20-year period.

[36] Port of Grays Harbor 2017 Strategic Plan

Strategic Planning Goals

- Customer Service & Development - Develop partnerships with companies and organizations with the capacity to invest in, and sustainably grow our community.
    - Organic growth: work with existing customers to accommodate and plan for their growth plans.
    - Business recruitment: attract users to existing facilities by providing consistent lease policies and practices.
    - Co-location: pursue companies that complement existing industries and employers, therefore creating an economic advantage through close proximity.
    - Strategic infrastructure utilization: consider access to the navigation channel, marine terminals, rail, utilities, roads, airport, natural gas and other infrastructure when locating customers to ensure maximum usage of the infrastructure today and into the future.
- Fiscal Responsibility - Responsibly managing the Port's financial resources
    - Cash flow: generate sufficient net income on an operating level across all lines of business in order to reinvest in infrastructure, serve customer growth and create economic opportunity for the Grays Harbor community.
    - Investment: invest port resources in projects and facilities that create a sustainable economic opportunity for the region.
    - Property taxes: invest in public infrastructure that serves the mission of the Port.
    - Public funding: develop partnerships with local, state and federal agencies for grants and other funds that leverage private investment and job development.
    - Debt capacity: maintain a financial position that supports positive bond ratings for the Port and other Grays Harbor public entities.
- Asset Protection, Utilization & Acquisition - Manage the Port's facilities in a way that accomplishes the asset's highest and best use for the community and users.
    - Asset protection: Inspect, maintain and plan for the replacement of existing and new assets.
    - Planning and acquisition: identify, plan for, and acquire additional facilities that generate a return on investment for the citizens of Grays Harbor.
    - Location: consider the area needed, building, land, waterfront or upland needs of existing and potential customers and maximize the usage of each location.
    - Strategic infrastructure development: Invest in public infrastructure that attracts and serves economic base (i.e. the navigation channel, rail, utilities, roads, airport, and facilities).
- Public Access & Safety - Enhance the public's experience of being on the Grays Harbor waterfront
    - Accessibility: provide waterfront viewing and recreational facilities that are accessible to the general public.
    - Tours: provide tours to the public and potential customers to educate and inform about the Port's assets.
    - Safety: maintain recreational and business facilities to provide safe utilization and access.
    - Security: To the reasonable extent possible, secure assets and users from external threat through the use of fencing, security

    - Security & safety partnerships: Work with public and private partners to ensure safe and secure facilities. Examples include Homeland Security plans with the US Coast Guard, participating in the Harbor Safety Committee and continuing the employee safety committee regular meetings.
- Environmental Stewardship - Operate and maintain port facilities and facilitate projects that meet or exceed regulatory requirements.
    - Regulatory partnerships: develop partnerships with organizations and users to ensure that requirements are clearly communicated and understand throughout project development and implementation.
    - Fisheries: continue to provide space and resources for regional fisheries enhancement.
    - Forestry: continue sustainable forestry management practices at the Satsop Business Park.
    - Brownfields: encourage reuse of brownfield sites. Partner to clean legacy sites when necessary.
    - Mitigation: propose meaningful mitigation solutions for projects that impact the environment.
- The New Normal: Action Plan
    - Short-term objectives ~ In the next 2 years
        - Continue quarterly operations financial review, respond to immediate market conditions.
        - Focus marketing efforts on accommodating the growth of existing customers in order to utilize excess capacity of existing assets.
        - Invest in upgrading existing infrastructure to meet the needs of today's user base and diverse industries.
        - Advocate for infrastructure improvements that increase Grays Harbor's competitive advantage in attracting economic activity.
        - Communicate with local, state and federal leaders regarding the impacts of policies affecting Grays Harbor's economy.
    - Long-term objectives ~ 2 years and beyond
        - Plan to add capacity in the marine shipping facilities in order to maximize the community benefits of Grays
        - Harbor's strategic advantage in international trade.
        - Continue responsible usage of fiscal resources in order to position the Port for future growth and investment with strategic usage of the Port's bonding capacity.