

MARINE TRADES AREA CLEANUP AND REDEVELOPMENT

8/25/2021

Marine Trade Opportunities and Needs for
the ASB Area



BST Associates
Market Research & Strategic Planning

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CHAPTER 1. EXECUTIVE SUMMARY

The Marine Trades Area is identified in Port and City land use planning documents for preservation and enhancement of Marine Trades uses. This area includes the Aerated Stabilization Basin (ASB), which will be modified during planned cleanup of the Whatcom Waterway site.

Following completion of the Whatcom Waterway cleanup, it is currently anticipated that the ASB will provide approximately 12 to 14 acres of upland property and a similar quantity of new open-water space. These areas provide opportunities for new or expanded marine trades uses, as well as additional habitat and public access improvements. A hard edge (e.g., marginal wharf et al.) between the newly created uplands and the water area would be most effective for supporting marine trades development because it would enable moorage and use of equipment for loading and unloading.

The Port and City manage a coordinated process to support land use planning and infrastructure development throughout the Waterfront District. Targeted planning for the Marine Trades area (including the ASB) is ongoing, and will continue in parallel with the cleanup work. At this time, no decisions have been made regarding specific land uses in the ASB. Land use planning and associated stakeholder and public engagement are expected to continue for several years.

BST Associates was retained by the Port of Bellingham to assess the suitability of potential land uses in the Marine Trades area, based on stakeholder input and consultant experience. The goal of this effort is to help inform subsequent Port and City land use planning efforts.

Several overall conclusions and recommendations regarding land-use development in the ASB emerged from the stakeholder outreach conducted by BST Associates:

- Scarcity of waterfront industrial land:
 - Bellingham has a limited supply of waterfront industrial land.
 - Developing the ASB for use by the Marine Trades is a positive step to alleviate this constraint.
 - Developing waterfront property is challenging due to the permit process and to competition from non-industrial uses.
- Support for marine trades is strong:
 - Port needs to provide secure facilities and continue to back the marine trades.
 - Port should support existing trades and not bring in new competitors that might undermine existing businesses.
 - There are several good partnership opportunities between the private sector, public sector and educational institutions.
- Marine trades face many challenges:
 - Finding employees is difficult, and is the biggest constraint for the marine trades.
 - There are great synergies between the marine trades and technical colleges, especially in training skilled workers. WWC and BTC are working with the private sector on training and apprenticeship programs that are industry-based.
 - Affordable housing is a critical need for the marine trades.
- Multi-purpose facility preference:

- Stakeholders expressed a preference for a multi-use facility versus a single-use facility (e.g., large shipyard or other use), because it could enable many supporting firms to use the facility.
 - Fairhaven Marine Industrial Park was mentioned by several stakeholders as a good example of the multi-purpose facility concept. The ability to have waterfront facilities (moorage, equipment, adjacent space et al.) in the ASB area would further enhance marine trade expansion.
- Evaluating potential uses:
 - Care should be taken to use the ASB area wisely.
 - The design of the Marine Trades Area needs to be flexible, to accommodate changing market conditions and opportunities.
 - Economic / financial assessment of proposed uses is important and should be evaluated in greater detail as the project moves forward.
 - Port should try to have a tenant on board for the facility, rather than trying to “build it and they will come”.

As part of the evaluation process of potential uses, BST Associates developed a matrix that summarized the fit between various criteria and each potential use. Based on this matrix the potential uses were classified into three tiers. The uses in the highest tier showed a better fit with the evaluation criteria, while those in the lowest tier showed the least fit. The draft groupings of these uses are summarized below:

Highest tier:

- Boat manufacturing (large boats 50 feet+)
- Boatyard
- Shipyard
- Commercial fishing fleet moorage
- Outfitting dock with loading/unloading equipment (an outfitting dock that served gear transfer and other lifts was of interest to boat manufacturers as well as to the commercial and recreational fleets)
- Structure fabrication
- Marine Research

Mid-tier:

- Hatchery
- Aquaculture
- Boat manufacturing - small boats (under 50 feet)
- Energy systems (offshore wind, tidal et al)
- Government / agencies
- Recreational moorage
- Dry stack storage

Lowest tier:

- Gear storage (web lockers and yard space)
- Cold storage

- Fish processing
- Barge terminal
- Marine terminal
- Boat launch/ramp

The following report documents the process undertaken to evaluate and rank potential uses for the ASB redevelopment area.

CHAPTER 2. STAKEHOLDER INPUT

The process to identify potential uses included the following steps:

- Internal discussion with key Port staff
- Review of recent Port staff/commission and stakeholder development efforts
- Review of permitted uses and implications from zoning
- Interviews with stakeholders
- Workshop attended by stakeholders

The following section summarizes stakeholder input received during the interviews and at the workshop.

Internal Discussion

The Port of Bellingham team included individuals from the engineering, environmental and planning divisions:

- Project Sponsor and MC/Project Representative - Brian Gouran, Director
- Engineering - Brian Keenan, Project Engineer; and Greg Nicoll, P.E., -Senior Engineer
- Environmental - Ben Howard, Project Manager, Kurt Baumgarten - Port Planning
- Planning – Greg McHenry, Senior Planner

BST Associates also interviewed Port leads in the following divisions:

- Economic Development – Don Goldberg, Director
- Marinas (recreational and commercial) – Alan Birdsall, Manager of Marinas
- Marine Terminals - Dave Warter and Chris Clark, Business Development Manager
- Properties - Terry Ilahi and Brady Scott, Senior Property Managers

Stakeholder Outreach

Interviews

BST Associates conducted interviews with Marine Trades stakeholders to learn more about their industry and recommendations regarding a list of potential land uses. These interviews were conducted in September and October.

BST Associates conducted interviews with the following stakeholders:¹

- All American Marine – Matt Mullett
- Aquacare Environment Inc – Henning Gatz
- Bellingham Cold Storage - Doug Thomas
- Bellingham Marine – Rob Rasmussen and Jim Engen
- Bitter End Boatworks – Jesse Vangolen
- Bornstein Seafoods - Jay Bornstein
- BTC Aquaculture & Fisheries (hatchery) - Brittany Palm
- Bullfrog Boats – Craig Henderson

¹ Listed in alphabetical order

- Colony Wharf – Rieker Sternhagen
- Drayton Harbor Oyster Co – Steve Seymour
- Fisheries Supply – Alex Sutter
- IMTRA – J Mark Barrett
- Haskell Corporation – Evan Haskell
- Marine Advisory Committee - Paul Burrill
- NTG Fabrication – Nigel Green
- NW Explorations – John Nassichuk
- Pacific Marine Yacht Services – Shawn Clark
- Puglia Engineering – Matt Walberg
- Rozema Boat Works – Dirk Rozema
- San Juan Cruise – Drew Schmidt
- Seaspans – Tony Brewster & Paul Hilder
- Seaview Boatyard – Phil Riise
- Union Marine – Mark Helgen
- Whatcom County Commercial Fishing Assn. – Milan "Sipa" Slipcevic
- Working Waterfront Coalition – Jim Kyle, Mike McCauley, George Dyson

Workshop

A workshop to discuss ASB/marine trades area land use opportunities was held on November 5, 2020 via zoom. Attendees included:

- All American Marine - Matt Mulett
- Aquacare Environment Inc - Henning Gatz
- Bellingham Marine - Jim Engen
- Bellingham Marine - Rob Rasmussen
- Bornstein Seafood Inc. - Jay Bornstein
- BTC - Faculty & Hatchery Mgr. - Fisheries & Aquaculture Sciences - Brittany Palm-Flawd
- City of Bellingham - Steve Sundin
- Drayton Harbor Oyster Co - Steve Seymour
- Drayton Harbor Oyster Co. - Rick Kai
- Marina Advisory Committee - Paul Burrill
- NTG Fabrication - Nigel Groom
- Port of Bellingham - Ben Howard
- Port of Bellingham - Brady Scott
- Port of Bellingham - Brian Keenan
- Port of Bellingham - Chris Clark
- Port of Bellingham - Kurt Baumgarten
- San Juan Cruises - Drew Schmidt
- Seaview Boatyard - Grace Moonie
- Working Waterfront Coalition - George Dyson
- Working Waterfront Coalition - Jim Kyle

General Findings

Stakeholders had several overall conclusions and recommendations regarding land-use development:

- Scarcity of waterfront industrial land:
 - Bellingham has a limited supply of waterfront industrial land.
 - Developing the ASB for use by the Marine Trades is a positive step to alleviate this constraint.
 - Developing waterfront property is challenging due to the permit process and to competition from non-industrial uses.
- Support for marine trades is strong:
 - Port needs to provide secure facilities and continue to back the marine trades.
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- Multi-purpose facility preference:
 - Stakeholders expressed a preference for a multi-use facility versus a single-use facility (e.g., large shipyard or other use), because it could enable many supporting firms to use the facility.
 - Fairhaven Marine Industrial Park was mentioned by several stakeholders as a good example of the multi-purpose facility concept. The ability to have waterfront facilities (moorage, equipment, adjacent space et al.) in the ASB area would further enhance marine trade expansion.
- Evaluating potential uses:
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Findings by Sector

The following section presents findings from the interviews and workshop for specific sectors. Several descriptions of existing and proposed uses were presented at the workshop. The objective of this effort was to explore whether uses were compatible with the current planning concept, economic and financial impacts, and other considerations related to site planning. Input from stakeholders is presented at the end of each section.

Aquaculture/Hatchery

Hatchery

A non-profit group (San Juan AREA Sea Life) is advocating construction of a new salmon hatchery, which would provide food for orcas as well as resources for the commercial and recreational fishing industries. The hatchery concept is supported by the Port of Bellingham and by several marine trade's firms.

The proposed facility is modelled after the Macaulay Hatchery in Juneau, which is run by Douglas Island Pink & Chum, Inc. (DIPAC). The Juneau facility encompasses approximately 4.9 acres, and includes a 50,000 square foot building. Tourism is a major component of the Juneau operation, which hosts approximately 75,000 to 90,000 tourists per year.

The Juneau facility is funded by a cost recovery system, which is based on the sale of fish to support operating and capital costs. The proponents of the Bellingham facility are proposing the same funding system, but this will require a change in the current fisheries management system.

FIGURE 1 – DIPAC HATCHERY IN JUNEAU



Access to fresh water is a critical component of the proposed effort in Bellingham. Georgia Pacific (GP) retains the rights to withdraw water from Lake Whatcom, and a pipeline runs from the lake to the former mill site. A secondary benefit is that using these water rights and the pipeline would improve water circulation in Lake Whatcom. Proposed locations at the former GP mill site include the log pond and the ASB. The GP water line currently terminates at to the log pond, but could be extended to the ASB.

Stakeholders expressed concerns about the potential conflicts between marine industry and the tourism associated with the hatchery, if the facility were located at the ASB.

Other concerns about the hatchery would need to be addressed, namely:

- It would require a change to the current fisheries management structure, and/or
- The potential negative impact on native fish from hatchery fish.

Aquaculture

Aquaculture is a rapidly growing industry that includes shellfish, finfish, and macroalgae.

Shellfish

Shellfish facilities exist throughout Puget Sound (including Whatcom County) and along the Pacific Coast. In Blaine Harbor, Drayton Harbor Oyster has a Floating Upweller System (FLUPSY). This is a system in which shellfish are raised in open water while protecting them from predation until they are large enough to survive in one of the shellfish sanctuaries. The young shellfish raised at the Blaine FLUPSY are trucked elsewhere to grow to full size. A FLUPSY typically has a relatively small footprint. For example, the Blaine FLUPSY uses 2,700 square feet of water.

FIGURE 2 – TAYLOR SHELLFISH FARMS NEAR SHELTON WA



Macroalgae

Production of macroalgae is a growing business, and includes species such as Pacific Dulse, Turkish Towel and Sea Lettuce, among others. There is a strong market for algae, seaweed, kelp, and dulce. Growth is especially strong in the millennial market, as well as in international markets. One example of an macroalgae facility in Puget Sound is a research facility operated by NOAA at Manchester.

FIGURE 3 – NOAA AT MANCHESTER WA



This facility has an array of 24 tanks located on shore. It may be possible, however, to grow algae on strings in the water, with sea cucumbers growing underneath.

Other Related Uses

An organization called “Urban Village 2020” is promoting freshwater aquaculture and aquaponics, with goal of producing more food in Whatcom County.² This type of operation could potentially be a natural extension of services provided at the Port of Bellingham.

² Urban Village 2020 estimates are that 95% of the food consumed in Whatcom County is imported from outside the County.

The model under consideration by Urban Village 2020 could require approximately 10 acres, and include two fish ponds with a greenhouse in between them. The ASB site is large enough to accommodate this use, as is the former Intalco site in Ferndale. Both sites have access to water rights and water pipelines. A facility of this size, however, would constrain other marine industry uses at the ASB.

Stakeholder Feedback

- Many of the stakeholders were unaware of the potential for aquaculture.
- Other stakeholders identified several potential opportunities. Growth is expected to be rapid for macroalgae. Additional processing capacity is needed, which could provide a boost for local producers.
- There appears to be a good opportunity in Bellingham/Whatcom County for aquaculture and/or hatchery development. The area has access to existing, under-utilized water infrastructure and water rights, which creates a unique opportunity.
- Products grown in Bellingham Bay (with bay water) might be suspect due to water quality issues.
- BTC operates a salmon hatchery at the old sewage treatment plant along Whatcom Creek. It is a training hatchery that can produce around 4 million salmon eggs (at maximum production). The building is new (8,000 sq ft); water is drawn into the settling pond (big tank); rearing occurs at two smaller tanks; with a raceway that returns the fish back to Whatcom Creek. BTC's focus is on sustainable aquaculture with several programs/partnerships to promote regenerative ocean farming.

Boat/Ship Repair/Manufacturing

Whatcom County has an extensive history in boat manufacturing and boat/ship repair. Many builders and affiliated trades are located in Whatcom County.

The repair industry in the area for small boats is extensive, but for vessels over 40 tons there is limited capacity. Repair of large boats is handled primarily by Seaview North in Bellingham and On Board Marine in Blaine.

Bellingham had the capacity to repair even larger vessels, but this ended with the closure of the Puglia facility at Fairhaven. However, the Port recently leased this 16 acre-site to Fairhaven Industrial Marine Repair, which plans to conduct marine, road, and rail construction activities throughout the Pacific Northwest including Whatcom County, Skagit County and Alaska.³

Boat Manufacturing

Most manufacturers in Bellingham focus on building smaller boats (under 30 feet). One exception is All American Marine, which focuses on aluminum boats over 50 feet. Use of alternative designs and power systems is a key goal of the industry moving forward.

Stakeholders expressed support for new manufacturers, but also recognized that there is potential competition for the local workforce. The local supply of skilled workers might be partially offset through skilled training programs.

³ <https://www.portofbelllingham.com/CivicAlerts.aspx?AID=335>

The development of ASB upland opportunity area could stimulate additional growth in boat manufacturing.

Examples of Boat Manufacturing Facilities

All American Marine (AAM) provides a good example of a specialized manufacturing site. AAM is located adjacent to the ASB, on property leased from the Port. The facility encompasses 2.2 acres and includes a new 57,000 sq ft building. The Port worked closely with AAM in the design, financing and lease of the facility.

AAM launches vessels using boat ramp at Squalicum Harbor. In order to accommodate AAM, the Port reduced the ramp from 4 to 3 lanes. Provision of another launch system in the ASB could be beneficial to the general boating community.

AAM is concentrating on high tech designs with cutting edge propulsion. Growth opportunities are positive, but there is significant competition within this sector.

FIGURE 4 – ALL AMERICAN MARINE



Another example of a specialized vessel manufacturing is the one operated by Vigor Industrial in Vancouver, Washington.

Vigor was selected by the U.S. Army to build Maneuver Support Vessels, under a 10-year, \$1 billion contract. After considering a number of sites at which to build these vessels, Vigor elected to purchase the former Christenson Yacht facility in Vancouver. Vigor chose to consolidate manufacturing of aluminum vessels at this site, and closed its facility in Seattle. (Relocation of existing manufactures from Seattle may represent an opportunity for Bellingham).

The facility consists of 7 acres, with 80,000 square feet of high bay fabrication and 53,000 square feet general fabrication space. It can accommodate vessels up to 165 feet in length with self-propelled mobile trailers to move vessels, and launch via ramp. Employment at the site is projected to start at 130, and grow to 400 employees at full capacity

FIGURE 5 – VIGOR VANCOUVER

Stakeholder Feedback – Boat Manufacturing

- One stakeholder mentioned it would be great to see manufacturers such as Grand Banks or Fleming build boats in Whatcom County, but recognized that it is very tough for domestic manufacturers to compete with imported boats.
- Aluminum manufacturing has become a favorite market sector for others to compete in. There is substantial competition for larger boats resulting in too much capacity. Nationally this has happened as builders try to find opportunities to offset the decline in their traditional markets (e.g., markets were strong for builders focused on Homeland Security vessels and oil rig boats but these markets have waned in recent years).
- Future opportunities are enhanced by building high speed alternative design, with new energy systems (hydrogen cell technology et al.).
- One manufacturer of smaller boats emphasized the need for a better lift for keel boats (racers), which could consist of a stiff-arm crane to trailer.
- Employees for manufacturing and repair come primarily from Whatcom and Skagit County. Concern was expressed that attracting new industry may increase competition for employees.

Boatyards

Examples of Boatyards

Seaview Boatyard North is located at Squalicum Harbor, and is the largest boatyard in Whatcom County. The firm's lease with the Port of Bellingham includes approximately 4.1 acres, with around 30,000 square feet of building space. Lift equipment includes a 165-ton Travelift and a 35-ton Travelift.

Seaview is currently considering the construction of a larger building for repair and dry stack storage. The Seaview Boatyard North facility is a good example of the synergy created between repair, storage and marine trades

Seaview is constantly assessing market opportunities, and currently operates facilities in Seattle (at the Port of Seattle's Shilshole Bay Marina) and Fairhaven (storage and repair at the Port of Bellingham's Fairhaven Marine Industrial Park), in addition to the Squalicum Harbor facility.

FIGURE 6 – SEAVIEW BOATYARD NORTH

The Port of Everett Boat Yard is a component of the Port's Craftsman District. The boatyard now encompasses approximately 6 acres, but it could expand into the adjacent Ameron Building property. The yard has a 75-ton Travelift and 60-ton boat transporter, which can accommodate around 75% of marina tenants.

The boatyard allows do it yourself (DIY) repair. The Port also leases space to Bayside Marine, which provides dry stack storage, repair and marine retail. Other uses include Port of Everett Offices, a restaurant, and office space.

This facility provides a good example of the synergy between repair, retail sales, storage, and the marine trades

FIGURE 7 – PORT OF EVERETT BOAT YARD

Stakeholder Feedback - Boatyards

- Environmental regulations are a major concern for boatyards and shipyards (especially water quality issues related to zinc and copper). This has caused some yards to cease allowing DIY repair work on hulls.
- One stakeholder has a custom fabrication shop with a diversified base of business (e.g., fishing drums, new construction, architectural steel, aluminum structures etc.). He expressed the importance of having diversified markets and building partnerships with other private

firms and with the Port. He encouraged the Port to provide crane, washdown and working area for marine trades.

- Several stakeholders indicated the need for another boatyard and moorage for big boats. Some also indicated need for more DIY space.
- One stakeholder indicated that revenue from repair services was much larger than revenue from boat storage.

Shipyards

Examples of Shipyards

Everett Ship Repair started operations at the Port of Everett in 2020. Everett Ship Repair is affiliated with Whidbey Island-based Nichols Brothers Boat Builders.

Everett Ship Repair is a good example of a shipyard handling large vessels on a small foot print. The yard encompasses only 3.5 acres, plus the north side of Pier 3.

The drydock Faithful Servant is the primary lift for yard work. This floating dry, which was previously at Fairhaven, can accommodate vessels up to 430 feet long by 110 feet wide with a lifting capacity of 7,800 long tons. There is 500 feet of moorage for pier-side vessel service, as well as laydown and fabrication areas.

FIGURE 8 – EVERETT SHIP REPAIR



The Port of Port Townsend Shipyard provides a good example of the synergy that can be created between vessel repair, retail sales, ancillary uses and marine trades.

The yard covers approximately 13 acres in total; this total includes approximately 10 acres of yard space that can handle up to 200 vessels at a time. The 13 acres also includes approximately 2.5 acres of ground lease space (17 leases) and ~88,000 sq ft of building space (26 leases) that support an extensive list of marine trades. The yard has three Marine Travelifts (70-ton, 75-ton and 330-ton).

This yard has accessory uses woven throughout the site, including office and retail space and restaurants. Duplicating this type of facility at the ASB would require all of the land area available.

FIGURE 9 – PORT OF PORT TOWNSEND SHIPYARD

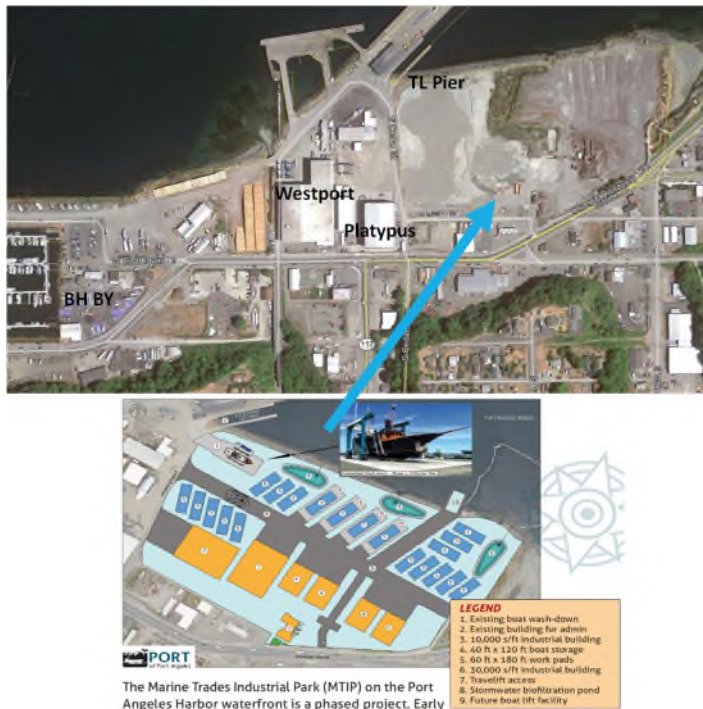
The Port of Port Angeles has two areas for vessel work, a small boatyard located near Boat Haven Marina and the larger Marine Trades Industrial Park (MTIP).

The small boatyard is approximately 1.6 acres, and has a 75-ton Travelift. This boatyard accommodates DIY repairs.

The MTIP is a 19-acre site that the Port is currently improving. Current tenants include Westport Yachts (3 acres, 100,000 sq ft building, 500-ton Travelift) and Platypus Marine (4 acres, 70,000 sq ft building, 30,000 sq ft building for fiberglass work, 300-ton Travelift).

The Port recently constructed a washdown pad at the MTIP, and is planning for additional shipyard and related operations (manufacturing, storage, new lift et al.) on the western portion of the property. See

Figure 10).

FIGURE 10 – PORT ANGELES MARINE TRADES INDUSTRIAL PARK

Stakeholder Feedback– Shipyards

- Bellingham has a long history in boat/ship building and repair but existing yards are limited in lift capacity and services provided.
- Ship repair firms in Whatcom County generally have only one position, which limits the amount of work that can be undertaken.
- There is a need for a shipyard in Bellingham that can provide service to larger boats that use Bellingham processors, including larger fishing boats and other commercial boats.
- The Fairhaven Shipyard market include the area from Alaska to California but the majority of the boats were from Washington (military and commercial fishing boats).

Commercial Fisheries

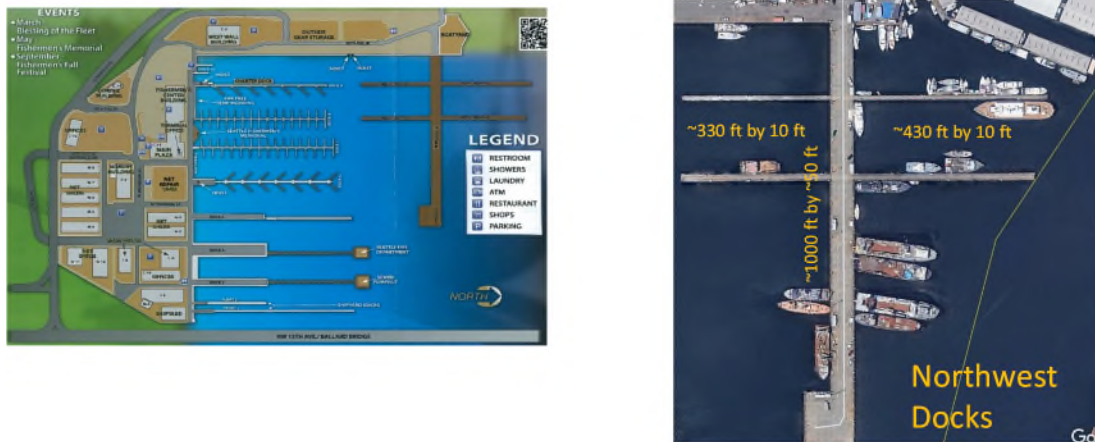
Whatcom County has a strong commercial fishing fleet, and there is a need to retain the existing fleet, as well as to attract additional boats. New facilities considered at the ASB could enhance operations for the existing fleet as well as attract new vessels to homeport in Bellingham.

In general, the commercial fleet on the West Coast is consolidating. The number of vessels in the fleet has declined over time, while the remaining boats tend to be larger and to participate in multiple fisheries. Consolidation of the commercial fishing business has resulted in the biggest 20% of the fleet handles around 80% of the product. Many boats work from California to Alaska, depending on the fishery and the season.

Examples of Commercial Fishing Moorage Facilities

Fishermen's Terminal (in Seattle) is one of the premier facilities serving the commercial fleet in Puget Sound. This facility provides a wide variety of services to the commercial fleet, including moorage for small and large vessels, storage, hoists, marine trades.

Fishermen's Terminal has several drive-down docks, four public hoists, open storage (1.7 acres) and covered storage (248 web lockers). The Northwest Docks provide loading/unloading facilities, as well as stern-to moorage for large vessels (up to 180 ft). A portion of the Northwest Docks is reserved for daily moorage.

FIGURE 11 – FISHERMEN'S TERMINAL

Another facility in Seattle is the former NOAA Homeport site on Lake Union, located at 1801 Fairview Ave E. At the time of the workshop this facility was being used by the owner (United States Seafoods) for commercial marine moorage and shipyard. The facility has 34,245 SF of building area, around 2,400 linear feet of pier space.

The facility was for sale at the time of the workshop. Redevelopment of this facility, or others in Seattle, could create opportunities for Bellingham to attract commercial boats from Seattle.

FIGURE 12 – 1801 FAIRVIEW AVE E

Examples of Hoist/loading facilities, Gear storage

The Port of Newport (Oregon) provides commercial moorage, loading/unloading areas with lift equipment, gear storage, and other amenities to support the commercial fishing industry. Newport provides amenities that meet the needs of both small and larger vessels, with extensive working amenities (working areas, hoists, storage). Newport's facilities are further supplemented by the Port of Toledo Shipyard, located 7 miles up the Yaquina River.

Newport's commercial fishing facilities are concentrated in two areas, the Commercial Marina and the Newport International Terminal.

The Commercial Marina (located on the downtown waterfront) provides moorage, working space, and lift equipment. This includes Swede's Dock (400 feet of moorage, working dock); and a hoist dock and storage area (220 ft of dock face, 30 feet deep, 4 hoists, and around 1.3 acres of storage).

The Newport International Terminal, mainly used by vessels over 70 feet in length, provides 870 ft of dock face and 17 acres of improved uplands and 9 acres unimproved uplands, and a fishing gear storage area of approximately 2 acres. (See Figure 12).

FIGURE 12 – PORT OF NEWPORT



The Cap Sante Marina in Anacortes is a large marina (1,007 boat slips) that accommodates both recreational and commercial vessels. A Dock and B Dock are the primary facilities for commercial vessels. A Dock previously consisted of 24, 65' slips but has been redesigned with 18 slips up to 100-foot long. B Dock has 61 slips, which are a mixture of 40', 50' and 60' slips.

In addition to these two docks, the T-dock is used for loading and unloading gear and supplies. All three of these docks are located at the south end of the marina. Web lockers are adjacent to the T dock with gear/working space available in the same area. Open and covered storage is available just south of the marina, on the MJB property. Cap Sante Marina provides synergy between small and larger commercial vessels, as well as working areas, hoists, open and covered storage.

FIGURE 13 – CAP SANTE MARINA

In Juneau (Alaska), the Auke Bay Loading Facility (ABLF) is a work station for loading and unloading vessels and performing maintenance on vessels. It was constructed in 2010 and consists of a 180' x 50' drive-down float on 0.83 acres. Provision of loading / unloading facility helps both commercial and recreational boats.

FIGURE 14 – AUKE BAY (JUNEAU AK)

Stakeholder Feedback – Commercial Fishing Moorage space

- Existing fishermen are pleased with existing facilities but think there is an opportunity to attract larger boats (tenders, trawlers; 110-120 feet long). Currently, there are around 12 large boats (from 58 to 100 feet long) but this sector could grow in Bellingham. Stern to moorage would likely be acceptable to the fleet.
- There is a limit to the vessel size that can use Bellingham with the current design. Factory trawlers calling at Pier 91 (in Seattle) are 320 to 365 feet and would require 30 feet of water depth.
- Fish processors are interested in providing space for larger boats that currently truck product up from Seattle.
- One stakeholder indicated that there are several firms looking to leave Seattle. They would need to change equipment at the dock and load/unload. This would have a big economic impact on Bellingham marine trades and other businesses in Bellingham.

- One stakeholder foresees further consolidation in commercial fishing fleet.

Stakeholder Feedback – Commercial Fishing Gear Storage & Equipment

- Offloading docks and equipment
 - There is strong interest in a new load/unload facility, drive-down float. This is an opportunity to design it up front to make sure different uses make sense together. It could be used by boat manufacturers, charter boats, recreational boats and commercial fishing boats.
 - A fit-up float (around 150 feet long) is also needed.
 - Every community in SE Alaska has a drive down float/facility.
 - Need crane to unload a boat any time of day/night.
- Covered storage
 - Existing fishermen are pleased with web lockers. Web lockers are considered in good shape at Squalicum Harbor and are being improved at Blaine.
- Open storage
 - Fishermen suggested there was a need more yard space. The Port is planning for new open storage (temporarily at F Street area). Zuanich building impacted uses (summer events), but enables repair activity in winter (Sept to May).
 - One stakeholder stated that lay down areas for the commercial fleet don't have to be located on water.

Stakeholder Input – Other Commercial Fishing Related Facilities

- Covid 19 had a very negative impact on the processing and cold storage businesses.
- Fish processing
 - One stakeholder stated that the industry is consolidating and expansion can occur at existing locations on Bellingham waterfront or at inland sites. Markets include fish/seafood, fruit/vegetables and other products (dairy et al). All have significant economic impact in Whatcom County.
 - It is very expensive to build new facilities. Processors are looking to expand in place, increase the height of the facility and expand the footprint and update sanitation, utilities and other requirement while reconstructing.
- Cold storage
 - New capacity in Whatcom County has created a surplus of space, especially the addition of Lineage facility at Lynden. There is limited demand for new waterfront facilities.
 - Cold storage experienced its worst year in 40 years during 2020 due the effects of Covid-19. There is currently an over-supply of cold storage in the area, which is driving prices lower. Utilization rates were down significantly, negatively impacting financial performance.

Industrial / Other

Case studies of other potential waterfront industrial facilities are presented in this section.

Examples of Industrial / Other Uses

The Landings at Colony Warf is a mixed used facility that includes a barge terminal, repair services and storage.

The facility is approximately 6.3 acres (around 2 acres for barge operations). There is a mobile crane with a capacity of 250 tons, and outreach of 60 feet to 80 feet.

There are around ten businesses that use the terminal and provide comprehensive repair services for boat owners. Overall employment is estimated at 150.

The Landing allows DIY repair area for boaters.

The Landing also includes the C-Street Terminal, which provides moorage and loading/unloading services for barges and vessels on the Whatcom Waterway. Commodities handled include wood products, equipment, gypsum, lime and rock, among other products. Barges and related equipment are also moored at the terminal.

The Landings at Colony Wharf is a good example of synergy between repair, storage, barge terminal, and marine trades. There could be ways to incorporate and improve some of these uses in the adjacent ASB.

FIGURE 15 – LANDINGS AT COLONY WHARF



Fairhaven Marine Industrial Park (FMIP) represents another mixed-use development example for ASB development. The FMIP is a 16.7-acre site with 8 buildings (around 142,000 square feet). Most of the tenants are engaged in the marine trades:

- boatyard,
- marine repair/fabrication,
- boat manufacturing,
- marine retail, and
- boat storage.

Seaview Yacht Services Fairhaven leases a 30,600 square foot building on a 1.9-acre site for indoor boat storage and repair. Flooding at Padden Creek has been a concern at this site and the Port is evaluating ways to resolve this problem.

NTG Fabrication leases 32,500 square feet of building space at FMIP, with overhead cranes, access to water, power and other amenities. NTG has a diversified business model that focusses on marine and related structural projects (fishing drums, new construction, architectural steel, aluminum et al.)

FMIP is a good example of multi-use industrial complex that serves marine trades.

FIGURE 16 – FAIRHAVEN MARINE INDUSTRIAL PARK



The Columbia Business Center (CBC) in Vancouver, Washington, is an example of a large-scale industrial park that accommodates a variety of uses. The CBC includes 220 acres of waterfront property and 2 million square feet of outside storage, rail services, barge/water access, and 27 buildings that are home to more than 100 tenants. Water-dependent users include:

- Metal fabricators - Thompson Metal Fab and Vigor-Oregon Iron Works,
- Construction/fabrication - Greenberry Industrial, and
- Shipyard - JT Marine, among others.

These tenants lease building and open space to support construction projects, which have included bridges, oil rig vessels, and weirs and lock structures for dams along the Columbia/Snake Waterway, among other projects.

The CBC is much larger than the ASB, but it provides a useful example of mixed-use projects for marine trades, including access to buildings, open working yard and a barge terminal as well as a shipyard.

FIGURE 17 – COLUMBIA BUSINESS CENTER (VANCOUVER, WA)

The University of Washington Marine Sciences Building in Seattle represents a good example of a marine research/educational facility.

The UW Oceanography Department operates from this site, which includes 470 feet of dock space. It serves as the base for two ships: R/V Thomas G. Thompson (274 feet) and R/V Rachel Carson (72 feet).

A similar marine research facility could be a part of the ASB mixed-use development.

FIGURE 18 – UW MARINE SCIENCES BUILDING (SEATTLE)

Stakeholder Feedback – General Comments

- The Port should look to see how the Marine Trade Support Industries are being organized/co located across the Canadian border to identify possible synergies.
- This project is a great opportunity to bring industry together to a bigger site. There is a feeling that the marine trades are currently disjointed.
- Fairhaven Marine Industrial Site: Port should consider building an industrial park in that location for the businesses that are challenged with capital. (e.g., flex space for marine trades).

Stakeholder Feedback – Marine Terminal

- Stakeholders thought there was a lot of capacity at the BST Terminal and questioned the need for another marine terminal at the ASB.
- The Port of Bellingham was recently awarded a \$6.85 million grant from the U.S. Department of Transportation Port Infrastructure Development Program (PIDP) for improvements to the Bellingham Shipping Terminal. Planned improvements include reinforcement of a “heavy-load” receiving area at the main berth and removal of navigation high spots.⁴

Stakeholder Feedback – Barge Terminal

- C Street Terminal is constrained with respect to water depth and wharf design, which limits the cargo and moorage opportunities that are available.
- Bellingham Cold Storage receives a large volume of containers from Alaska by truck from Seattle as well as direct receipts via Coastal Transportation (weekly service from Alaska). Puget Sound Pilots require a 2-foot under keel clearance and limit berthing to the high tides. Development of another barge terminal would be beneficial. The Mount Baker Plywood site was mentioned as a possible candidate site.
- Stakeholders questioned whether barge operations are best located at the ASB.

Input from Stakeholders – Multi-purpose Facility

- Bellingham Marine Industries BMI) constructs marine float systems at their facility in Ferndale. BMI is engaged in some larger projects that could require access to a waterfront construction site. BMI leases approximately 2 acres of land between Colony Wharf and the ASB but hasn’t been able to finalize plans for this site until cleanup is finished. They would like a heavy lift construction pad to fabricate and transport large floats. The water depth at C Street Terminal is insufficient for these needs but a facility in the ASB could meet their requirements.
- Haskell Corporation undertakes large industrial construction projects, some of which are transported by water. They have used Colony Wharf in the past but the load capacity is limited (approximately 300 tons). A roll-on bulkhead at ASB would be useful if it had a sufficient direct live load to barge (more than 1,000-ton load capacity).⁵ However, the facility would be used infrequently (every 10 years or so).
- Stakeholders indicated that a multi-purpose facility that served energy systems, structural fabrication, marine research and moorage/services for government vessels could fit in at ASB but they would need more information about the proposed facility, especially size, cost and use patterns, among other items.

Recreational Boating

Recreational boat facilities that were evaluated included:

- Boat Launch / Ramp,

⁴ <https://www.bellingham.org/press-releases/port-of-bellingham-secures-6-85-million-federal-grant-in-support-of-working-waterfront/>

⁵ As a comparison, the barge terminal at Anacortes (MJB property) has a 3,500-ton load capacity.

- Clean Ocean Marina (or more broadly recreational moorage),
- Dry Stack Storage,
- Charter/Cruises,
- Transient Moorage.

Boat Launch / Ramp

In May 2017, the Port finished a modification project at the Squalicum Harbor boat launch which increased the width between holding docks to accommodate the launching of larger vessels from All American Marine's new boat manufacturing facility on Hilton Avenue. While the space available to stage boats at the two courtesy docks is the same, the project reduced vehicle access from four-lanes to three-lanes.⁶

Port staff indicated that the Squalicum ramp accommodates around 6,000+/- launches per year.⁷ The facility includes 15,000 square feet (water space) and 200,000 square feet (uplands). The upland space is constrained during a crab or salmon openings. Immediately after the reconfiguration of the ramp (from 4 lanes to 3 lanes), some boaters were concerned, but concern dissipated after boaters recognized that there was a minimal impact on launches.

FIGURE 19 – SQUALICUM HARBOR BOAT LAUNCH – BEFORE & AFTER



Stakeholder Feedbacks – Boat Launch / Ramp

- Stakeholders questioned the need for a new ramp,
- Some stakeholders thought a lift system should be considered to handle smaller boats.

Clean Ocean Marina (recreational moorage)

The Port was considering construction of a Clean Ocean Marina at the ASB.

“In the future, beyond the 6-year time frame of this park plan, the ASB breakwater is proposed to be converted to a clean ocean marina with approximately 3.2 acres of near

⁶ <https://portofbellinham.com/847/Squalicum-Boat-Launch-Modification-Proje>

⁷ Personal communication with Kyle Randolph, Harbormaster Squalicum Harbor, September 20, 2020.

shore habitat inside the marina basin, 380 and 460 slips, depending on the mix of slip length, and a public access trail on top of the breakwater.”⁸

The Port has re-evaluated its commitment to a Clean Ocean Marina due to changing market conditions as well as the cost of the proposed facility and the needs to support the marine trades at existing facilities. However, demand for recreational moorage remains high based on wait lists.

Stakeholder Feedback – Recreational Moorage

- Most stakeholders indicated there was a need for additional recreational moorage, especially for longer boats (50-foot up to 80 feet slips). Waitlists are very long.
- Several stakeholders wanted to keep the focus on marine trades at the ASB.
- One stakeholder thought sailboats could be launched with a crane or stiff leg at the ASB.

Dry Stack Storage

In other areas of Puget Sound, additional moorage capacity has come from dry stack and single tier dry storage. Placing small boats in storage facilities allows reconfiguration of existing marinas to focus on longer boats.

Examples of Dry Stack Storage Facilities

Bitter End Boatworks, in Bellingham, provides lift, storage and repair services. The facility is located adjacent to the Marine Trades area, on a 3.5-acre site leased from the Port.

Bitter End has a marine lift that can handle boats up to 30 feet in length and 12,000 pounds. The facility includes 500 feet of floating moorage, and a 6,000 sq ft building that houses the office and repair shop.

Bitter End has rebuilt the floating moorage, which was damaged by high storm surge; because the site is not well protected it is vulnerable to additional damage. In addition, the site is a former landfill, and differential settling over time has made the surface uneven. The Port is planning a project to improve the site surface.

Bitter End Boatworks provides an example of the synergy between with launch, storage, repair.

⁸ <https://www.portofbellingham.com/DocumentCenter/View/6869/Chapter-8-Development-Plan?bidId=>

FIGURE 20 – BITTER END BOATWORKS (BELLINGHAM)

Twin Bridges Marina, located at the northern end of the Swinomish Channel near Anacortes, provides dry stack storage as well as boat repair service and marine retail.

The site is approximately 3 acres and provides climate-controlled moorage in a 66,000 sq ft building. The building can accommodate approximately 256 boats (up to 35 feet or 22,000 pounds). The facility has Alaska 7,600 feet of building space for retail and repair services; 1,000 feet of dock space and moorage for eight large boathouses. It has remained at or over 90% occupancy for several years and the owner is considering construction of a second storage facility at the site.

Twin Bridges provides an example of the synergy between dry stack storage, launch, marine retail, and repair services.

FIGURE 21 – TWIN BRIDGES MARINA

Bayside Marine (in Everett) is another example of a facility that offers dry stack storage along with marine retail and repair.

Bayside Marine leases around 2.5 acres of land area from the Port of Everett. The storage building, which was built by the owners in 2007, is a 55,000 square foot building with space for 150 boats, a retail showroom, and service center. It can handle boats up to 36 feet. Potential expansion is being considered.

Bayside also provides synergy with dry stack storage, launch, marine retail and repair.

FIGURE 22 – BAYSIDE MARINE



Stakeholder Feedback – Dry Stack Storage

- Provision of dry stack facility in Bellingham could free up slips in Squalicum for reconfiguration. This would allow the Port to meet the needs of the smaller boats while building longer slips to meet the demand for longer slips.
- Dry stack is a proven method to handle small boats. There is a current need to reconfigure slips for bigger boats.
- It would likely impact existing single tier storage operations in Bellingham (at Bitter End, Colony Wharf, and Seaview Fairhaven). Some dry storage operators indicated an interest to negotiate with the Port to operate a new facility, if it came to fruition.
- Another local marine business is interested in single-tier storage of larger boats, as is currently done in Anacortes, Everett, Edmonds, Seattle and Tacoma.
- It's really important to have a protected water basin to locate the drystack.
- Keeping a boat in dry storage can reduce the annual maintenance costs.
- There are questions about viability of dry storage in Bellingham related to the rate that can be charged in the north sound.

Charter/Cruises

Charter and cruise boat activity is currently provided at Squalicum Harbor and in Fairhaven.

Stakeholder Feedback – Charter/Cruise

- One cruise operator at Fairhaven indicated they are satisfied at their current location; and doesn't think the ASB would be an appropriate location due to the proximity to marine trade activity and lack of visitor amenities.

- A charter operator, located in Squalicum Harbor, has an immediate demand for more long slips. This operator confirmed that dry stack is a proven solution to allowing reconfiguration of the harbor for longer boats while also meeting the needs of the smaller boat owners.

Transient Moorage

Visitor moorage in Squalicum Harbor is located on side-tie docks at Gates 3, 9, and 12. During busy periods, boaters may also be directed to available moorage at Gate 5. The Bellingham Yacht Club offers reciprocal moorage at the side-tie dock in front of their clubhouse at Gate 3.⁹

FIGURE 23 – TRANIENT MOORAGE AT SQUALICUM HARBOR



Stakeholder Feedback – Transient Moorage

- Transient moorage for commercial boats should be allowed in the ASB.
- Transient moorage for recreational boats should not be allowed in the ASB.
- Transient moorage should be located near attractions (Bellwether/Anthony's, Yacht Clubs etc.) not in an industrial area, which is a dead zone for these boaters.
- Consider additional transient moorage at the inner end of Whatcom Waterway.

⁹ <https://www.portofbellingham.com/239/Visiting-Boaters>

CHAPTER 3. INITIAL SCREENING OF POTENTIAL LAND USES

The criteria for screening potential land uses, which include the following, are discussed in this section.

- Compatibility with conceptual plan – is the potential use compatible with the concept plan with respect to: water depth, breakwater opening dimensions, dock face height, acres;
- Economic / financial – what is the economic/financial performance of the potential use as measured by: economic impact, financial performance, supply/demand;
- Site planning / constraints – are there other site planning considerations which could constrain the potential use: needs to be on deep draft water, best fit with the ASB, is it an allowed use, other considerations (building size / height, parking, traffic).

Compatibility with Conceptual Plan

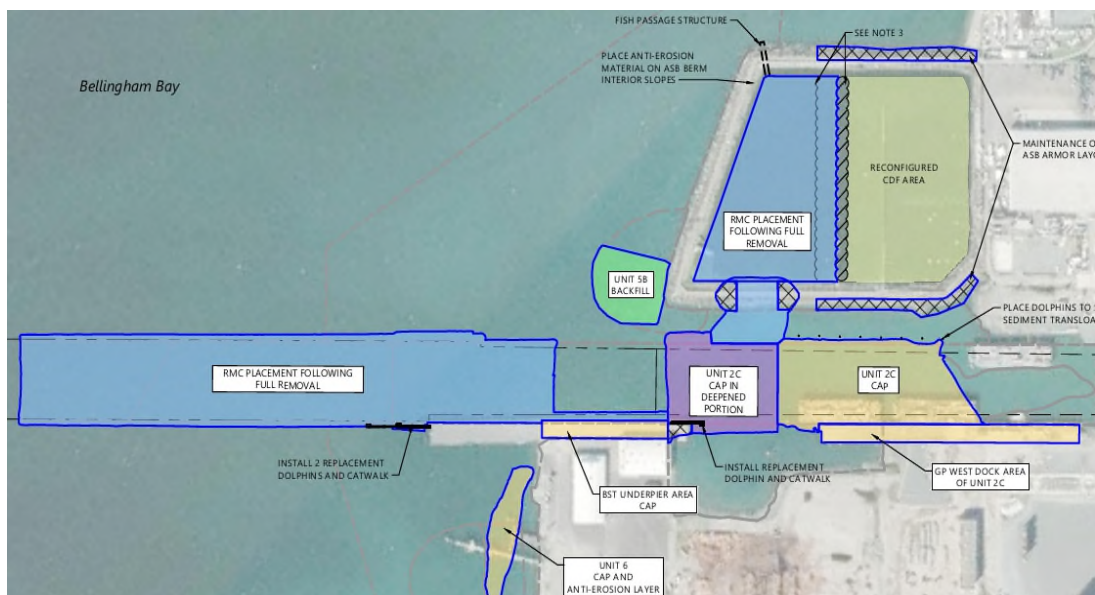
The Marine Trades Area is the portion of the Waterfront District located between the Whatcom Waterway and the I&J Waterway. This area also includes the Aerated Stabilization Basin (ASB) and adjacent areas of the Whatcom and I&J Waterways.

The Port and other local agencies are cleaning up historical

contamination through ongoing work at the I&J Waterway Cleanup Site, the Central Waterfront Cleanup Site and the Whatcom Waterway Cleanup site. The proposed work at the Whatcom Waterway site will modify conditions within the ASB and adjacent areas.

As shown in Figure 24, the cleanup requirements for the ASB respond to the Port's intention to reconnect the ASB with the Whatcom Waterway. The current design assumptions have been informed by prior Marine Trades planning efforts and stakeholder feedback.

FIGURE 24 – WHATCOM WATERWAY PLANNING AREA MAP



Source: Modified Remedial Approach: Material Placement and Structural Modifications, Design Evaluation Memorandum, Whatcom Waterway Phase 2 Cleanup, Anchor QEA

Water Depth

The proposed water depth is -25 feet at mean lower low water (MLLW). This depth would allow approximately 30 feet of water depth at higher tides. However, relying on tides would only support transient uses that are in the ASB basin for a partial day (tidal cycle), such as a fishing vessel loading or unloading gear. It would not be adequate for a multi-day barge or marine terminal visit, nor would it work for multi-day berthage.

The criteria for compatibility are:

- High (most conforming) include vessels with a loaded draft of less than 23 feet (assumes a 2-foot under keel clearance¹⁰). This includes most of the uses under consideration: hatchery, aquaculture, boat manufacturing (most small and large boats), boatyard, gear storage (loading/unloading facilities), gear storage (web lockers, gear storage and yard space), marine research, government and related agencies, boat launch/ramp, recreational moorage and dry stack storage.
- Mid (somewhat conforming) include uses with a loaded draft of 23 to 25 feet (assumes no under keel clearance). This includes larger vessels calling: shipyard, commercial fishing fleet moorage, cold storage, fish processing, energy systems and structure fabrication.
- Low (least conforming) include uses that include vessels with a loaded draft of more than 25 feet. This includes larger commercial fishing boats, and barge and marine terminals.

ASB Opening

The breakwater opening from Whatcom Waterway into the ASB is currently anticipated to be approximately 200 feet. A wider opening would allow passage by longer/wider vessels, but it would also reduce the berth area along the outer face of the fill area (i.e., to allow maneuvering room for larger vessels). A larger opening would allow larger waves into the ASB (because the wind is typically from the southwest), which could create a difficult wave climate for other uses.

The criteria for compatibility are:

- High (most conforming) include uses that are single units (excludes tug/barge or like combinations) less than 200 feet long: boat manufacturing (small and large boats), shipyard, commercial fishing fleet moorage, cold storage, fish processing, hatchery, aquaculture, boatyard, gear storage (loading / unloading facilities, web lockers, yard space, energy systems, structure fabrication, marine research and government and related agencies, boat launch/ramp, recreational moorage and dry stack storage).
- Mid (somewhat conforming) include uses that are 200 to 250 feet long: no uses in this category.
- Low (least conforming) include uses that are longer than 250 feet and or multiple units (tug/barge combinations that would use a terminal or carry energy systems): barge and marine terminals.

¹⁰ A 2-foot under-keel clearance is required by Puget Sound Pilots.

Height of Uplands above Water

The current plan is for the height of the berm (at the west end of the fill) to have an elevation of at least +18 feet MLLW (assumes 2 feet of pavement/working surface on top of constructed environmental cap) and design for future anticipated sea level rise. Final elevations may be greater, up to a maximum of +24 feet MLLW. The criteria for compatibility are:

- High (most conforming) – none of the potential uses would be impacted by the planned berm height.

Upland Area

The reconfigured CDF Area is expected to have 12 to 14 acres of useable upland area. The criteria for compatibility are based upon stakeholder input for a multi-use facility rather than a single-purpose facility:

- High (most conforming); all uses could be accommodated in the upland acreage. However, some uses (shipyard et al) may use a large portion of the uplands, which would limit a multi-use facility.

Summary results for compatibility to land use plan are presented in Table 1.

TABLE 1 - COMPATIBILITY WITH CONCEPTUAL PLAN

Subcategories	Water depth (-25 ft mllw)	Opening width (200-250 ft)	Dock height (18-24 feet)	Acres (12-14 acres)
Hatchery	●	●	●	●
Aquaculture	●	●	●	●
Boat manufacturing (50 ft+)	●	●	●	●
Boat manufacturing (< 50 ft)	●	●	●	●
Boatyard	●	●	●	●
Shipyard	◐	●	●	●
Commercial fishing fleet moorage	◐	●	●	●
Outfitting dock with loading/unloading equipment	●	●	●	●
Gear storage-web lockers	●	●	●	●
Gear storage-yard space	●	●	●	●
Cold storage	◐	●	●	●
Fish processing	◐	●	●	●
Barge terminal	○	○	●	●
Energy systems (wind, tidal et al)	◐	●	●	●
Structure fabrication	◐	●	●	●
Marine research	●	●	●	●
Marine terminal	○	○	●	●
Government/agencies	●	●	●	●
Boat launch/ramp	●	●	●	●
Recreational moorage	●	●	●	●
Dry stack storage	●	●	●	●

Note: ● = most conforming to plan, ◐ = moderately conforms to plan; ○ = least conforming to plan.

Source: BST Associates

Economic / Financial Considerations

Port staff and stakeholders agreed that the economic/financial performance of the potential uses are a very important factor in selection of uses. The following criteria were used to address the economic/financial performance based upon a qualitative review. However, additional analysis should be undertaken to further refine potential uses as the project moves forward.

Economic impact

The Port of Bellingham has recognized the importance of the marine trades, by reducing rental fees, in order to retain and attract marine business with high economic impacts. The economic impacts of the potential use were considered in a qualitative manner, based upon consultant experience and stakeholder input regarding the relative levels of economic impact (employment, output). Potential uses are ranked as follows relative to their economic impact:

- High (highest impact) are uses that have a high economic impact, including:
 - Hatchery and aquaculture operations can generate a high economic impact in production and processing. Hatchery operations could have a significant economic impact on the commercial and recreational fleets and processors by increasing harvests.
 - Boat Manufacturing (small and large boats), shipyard, boatyard, cold storage, fish processing, commercial fishing fleet operations, barge and marine terminals, energy systems, government/agencies, marine research, and structure fabrication can generate a significant number of family wage jobs, output and taxes.
- Mid (moderate impact) are uses that have a moderate level of employment or output, including: recreational moorage and dry stack storage.
- Low (low impact) are uses that have a low level of employment or output, including: boat launch/ramp and gear storage (loading/unloading facilities, web lockers and yard space). These operations help facilitate activity but do not generate significant employment or output on their own.

Financial performance

The financial performance of the potential uses was also considered in a qualitative manner, based upon consultant experience and stakeholder input regarding the likelihood that expected revenues cover operating/maintenance costs as well as capital costs or debt service. Potential uses are ranked as follows relative to their financial performance:

- High (highest impact) are uses that have a high financial performance, where expected revenues cover operating/maintenance costs as well as capital costs or debt service. This includes: aquaculture and hatchery.
- Mid (moderate impact) are uses that have a moderate financial performance, where expected revenues cover operating/maintenance costs and partially cover capital costs or debt service. This includes: barge and marine terminals, energy systems, structure fabrication, government/agencies, marine research, recreational moorage, dry stack storage, boat manufacturing (small and large boats), boatyard, shipyard, cold storage, fish processing, commercial fishing fleet moorage.

- Low (low impact) are uses that have a low financial performance, where expected revenues do not typically cover operating/maintenance costs. This includes: boat launch/ramp, gear storage (loading/unloading facilities, web lockers and yard space).

Supply/demand relationships

The supply/demand relationships of the potential use were also considered in a qualitative manner, based upon consultant experience and stakeholder input focusing on existing and expected demand relative to the existing and expected supply of the facility or service. Potential uses are ranked as follows relative to the strength of their demand relative to supply in the Northern Puget Sound region:

- High (highest net demand) are uses that have a high level of demand relative to supply, including: outfitting dock with loading/unloading equipment, aquaculture and hatchery.
- Mid (moderate net demand) are uses that have a moderate level of level of demand relative to supply, including: gear storage (yard space), barge terminals, structure fabrication, government/agencies, marine research, recreational moorage, dry stack storage, boat manufacturing (small and large boats), shipyard, boatyard and commercial fishing fleet moorage.
- Low (low net demand) are uses that have a low level of level of demand relative to supply, including: gear storage (web lockers), cold storage, fish processing, energy systems, marine terminal and boat launch/ramp

Summary results for economic/financial considerations are presented in Table 2.

TABLE 2 – ECONOMIC/FINANCIAL CRITERIA

Subcategories	Economic Impact	Financial Performance	Supply / Demand
Hatchery	●	●	●
Aquaculture	●	●	●
Boat manufacturing (50 ft+)	●	●	○
Boat manufacturing (< 50 ft)	●	●	○
Boatyard	●	●	●
Shipyard	●	●	●
Commercial fishing fleet moorage	●	●	●
Outfitting dock with loading/unloading equipment	●	○	●
Gear storage-web lockers	○	○	○
Gear storage-yard space	○	○	●
Cold storage	●	●	○
Fish processing	●	●	○
Barge terminal	●	●	●
Energy systems (wind, tidal et al)	●	●	○
Structure fabrication	●	●	●
Marine research	●	●	●
Marine terminal	●	●	○
Government/agencies	●	●	●
Boat launch/ramp	○	○	○
Recreational moorage	●	●	●
Dry stack storage	●	●	●

Note: ● = highest performance, ● = moderate performance; ○ = lowest performance.

Source: BST Associates

Planning Considerations

The planning related considerations include:

Need for deep draft waterfront

- As noted previously, stakeholders emphasized the shortage of waterfront industrial land in Bellingham with sufficient water depth at the shoreline interface. The need for deep draft waterfront with appropriate shoreline treatments (e.g., vertical bulkheads or similar) is considered below. Strongest need for a deep waterfront location includes: Barge and marine terminals, energy systems, structure fabrication, government/agencies, marine research, recreational moorage, boat manufacturing (large boats), shipyard, boatyard, commercial fishing fleet moorage, gear storage (loading/unloading facilities, boat launch/ramp and dry stack storage).
- Moderate need for deep waterfront location (process can be undertaken at non-waterfront location) includes: boat manufacturing (small boats)
- Least need for deep waterfront location includes: gear storage (web-lockers), cold storage, fish processing, gear storage (yard space), aquaculture and hatchery.

Some uses are better fit with the ASB

Stakeholders also emphasized that the newly created waterfront industrial space should be prioritized for uses that need the attributes envisioned in the plan and that some uses could be better served outside the ASB. This includes uses that are already well served in other locations (yard space, web-lockers etc.) or are being considered in other areas (dry stack storage is being considered in Squalicum Harbor etc.). The need for deep draft waterfront is considered below.

- Strongest need for ASB location includes: boat manufacturing (large boats), shipyard, commercial fishing fleet moorage, outfitting dock with loading/unloading equipment.
- Moderate need for ASB location includes: boat manufacturing (small boats), gear storage (web lockers and yard space), dry stack storage, energy systems, structure fabrication, government/agencies, marine research, recreational moorage, boatyard.
- Least fit with an ASB location includes: cold storage, fish processing, aquaculture, hatchery, boat launch/ramp, marine terminal, barge terminal

Allowed use under planning policies

All uses are allowed under current plans.

Other (Building size / height, Parking, Traffic etc.)

Other planning considerations include building characteristics (size, height), parking requirements and traffic, which are considered below.

- Least impact from other planning consideration: boat manufacturing (large and small boats), boatyard, shipyard, commercial fishing fleet, outfitting dock with loading/unloading equipment, web lockers, yard space, cold storage, fish processing, barge terminal, energy systems, structure fabrication, marine research, marine terminal, government/agencies, boat launch/ramp, recreational moorage and dry stack storage.

- Moderate impact from other planning consideration (uses that have a significant tourism component that could require additional parking and could impact waterfront industrial uses): hatchery, aquaculture
- High impact from other planning consideration: None.

Summary results for other planning considerations are presented in Table 3.

TABLE 3 – OTHER PLANNING CONSIDERATIONS

Subcategories	Needs to be on water	Best fit with ASB	Allowed use	Other (building size / height, parking, traffic etc.)
Hatchery	○	○	●	●
Aquaculture	○	○	●	●
Boat manufacturing (50 ft+)	●	●	●	●
Boat manufacturing (< 50 ft)	●	●	●	●
Boatyard	●	●	●	●
Shipyards	●	●	●	●
Commercial fishing fleet moorage	●	●	●	●
Outfitting dock with loading/unloading equipment	●	●	●	●
Gear storage-web lockers	○	●	●	●
Gear storage-yard space	○	●	●	●
Cold storage	○	○	●	●
Fish processing	○	○	●	●
Barge terminal	●	○	●	●
Energy systems (wind, tidal et al)	●	●	●	●
Structure fabrication	●	●	●	●
Marine research	●	●	●	●
Marine terminal	●	○	●	●
Government/agencies	●	●	●	●
Boat launch/ramp	●	○	●	●
Recreational moorage	●	●	●	●
Dry stack storage	●	●	●	●

Note: ● = highest need, ● = moderate need; ○ = lowest need.

Source: BST Associates

Summary Findings

Following completion of the Whatcom Waterway cleanup, it is currently anticipated that the ASB will provide approximately 12 to 14 acres of upland property and a similar quantity of new open-water space. These areas provide opportunities for new or expanded marine trades uses, as well as additional habitat and public access improvements. A hard edge (e.g., marginal wharf et al.) between the newly created uplands and the water area would be most effective for supporting marine trades development because it would enable moorage and use of equipment for loading and unloading.

Using equal weighting for each of the three criteria (compatibility to the plan, economic/financial performance, other planning considerations), the following list summarizes potential uses by overall need.

TABLE 4 – SUMMARY FINDINGS

Subcategories	Summary Ranking
Hatchery	●
Aquaculture	●
Boat manufacturing (50 ft+)	●
Boat manufacturing (< 50 ft)	●
Boatyard	●
Shipyards	●
Commercial fishing fleet moorage	●
Outfitting dock with loading/unloading equipment	●
Gear storage-web lockers	○
Gear storage-yard space	○
Cold storage	○
Fish processing	○
Barge terminal	○
Energy systems (wind, tidal et al)	●
Structure fabrication	●
Marine research	●
Marine terminal	○
Government/agencies	●
Boat launch/ramp	○
Recreational moorage	●
Dry stack storage	●

Note: ● = highest rank, ● = moderate rank; ○ = lowest rank.

Source: BST Associates

CHAPTER 4. APPENDIX

Several Port and stakeholder reports/documents were reviewed to understand the plans for Port properties.

Port Planning Studies

The Port owns and manages many of the properties where Marine Trades businesses operate and is making significant investments to upgrade Whatcom County's working waterfront infrastructure and promote economic growth. Significant projects that are planned or have been recently completed include:¹¹

TABLE 5 – BELLINGHAM MARINE TRADES PROJECT REQUESTS

Area	
Hilton Avenue	Developing a new boat building facility and in-water infrastructure to support the expansion of All American Marine
Fairhaven Shipyard	Performing a multi-million-dollar replacement of the timber portion of the shipyard pier to eliminate heavy load restrictions
	Reconfiguring the shipyard and providing additional upland work areas to support expansion of the shipyard and to improve operational efficiency
	Cleaning up historic contamination
	Improving utility services
Bellingham Shipping Terminal	Dredging for increased navigation depth
	Repairing the main pier
	Repairing the roofs on Shipping Terminal warehouses
	Increasing the amount of surrounding upland work areas
	Improving utility services including stormwater, paving and power
C- Street Terminal and Whatcom Waterway	Performing structural upgrades to the rail span and stub pier
	Increasing sales and marketing efforts
	Removing derelict structures and cleaning up historic contamination
	Building a new barge terminal which includes new bulkheads, moorage dolphins, haul-out floats, a heavy loading area and a loading ramp

¹¹ <https://www.portofbellingham.com/688/Marine-Trades>

	Upgrading the marine terminal area by installing new utilities, removing overhead power lines, installing a storm water system, and upgrading the parking area
Fairhaven Marine Industrial Park	Repairing the Haul Out Pier Upgrading fire systems Installing energy efficient lighting Bulkhead and pier restoration
Blaine Marine Industrial Area	Removing a building to support increased operational efficiency by the working waterfront Cleaning up historic contamination
Squalicum Waterway	Working with the Army Corps of Engineers to perform overdue maintenance dredging in the Squalicum Waterway federal navigation channel Squalicum and Blaine Harbors Working with the commercial fishing fleet and maritime businesses to promote harbor facilities and increase commercial fishing vessel occupancy Structural repairs to the commercial fishing piers Revitalize the commercial fishing storage lockers (Web lockers)

Source: Port of Bellingham <https://www.portofbellingham.com/688/Marine-Trades>

Working Waterfront Advocacy Issues ¹²

Finding solutions to challenges facing our Waterfronts

The Coalition realizes that there is no “magic bullet” that resolves every challenge. We receive issues from our members and then work collaboratively with all stakeholders to develop strategies and solutions to support the economic vitality of our working waterfronts for all of Whatcom County.

From developing favorable rental policies, to upgrading infrastructure, to developing workforce education/training programs ensuring a competent workforce for our members, the Coalition works together with key stakeholders to develop solutions.

¹² Source: <https://www.whatcomworkingwaterfront.org/what-we-do>

Preserving our Working Waterfronts

ISSUE: At our request the Port Commission authorized a joint Coalition/Port committee to cooperatively draft planning document amendments focused on **developing a corporate goal designed to preserve and expand marine trades properties.**

This effort has the potential to positively affect Port policy towards the maritime sector for years to come. This process may lead to requests for zoning changes that provide further protection, for example in the C. St. marine trades area.

ACTION: A joint committee (Port Staff and Coalition members), named the “Working Waterfront Task Force”, will meet monthly for up to a year.

Blaine Marina Industrial Area

ISSUE: Neglect of Blaine Harbor infrastructure by previous port commissions is now being addressed, with the Port having spent ten million dollars since 2016, with more to come. Bulkheads, docks, roads, and buildings are being repaired or replaced to allow expansion of the boatyard and processors. A new web locker building has just been completed.

ACTION: The Coalition helped organize stakeholder/Port Staff meetings enabling valuable input from harbor users, a process that continues today.

Commercial Marine Water-Reliant Rental Policy

ISSUE: Several years ago, the Port of Bellingham was losing marine trades tenants from its harbor buildings with much difficulty filling those vacancies. **A Coalition initiative that gained Commission support led to the formation of a joint committee under the direction of Real Estate Director Shirley McFearin.**

ACTION: This committee drafted the **Commercial Marine Water-Reliant Rental Policy**, which was approved unanimously by the Port Commission. The successful new policy included a 10% discount for qualifying marine trades companies which contributed to declining vacancies in harbor buildings.

Port of Entry

ISSUE: Boaters can no longer clear U.S. Customs in Bellingham. This results in boat traffic being diverted to Blaine, Pt. Roberts, or Anacortes, and reduces boat visits to Bellingham.

ACTION: The Coalition organized a joint effort with the Port, Bellingham Yacht Club, and the City of Bellingham which is working to re-instate this service.

Training and Education

ISSUE: Strong need for competent workforce by our member companies.

ACTION: The Coalition provides scholarships for students in program areas supporting marine trades and also has begun the process of researching possible educational/training programs to effectively meet the needs of our member companies for a trained and competent workforce.

Visitor Moorage – Whatcom Waterway

ISSUE: The Redevelopment of the former Georgia Pacific site along the Whatcom Waterway envisions a substantial float for moorage for visiting boats and for local commercial fishermen to sell their catch directly from their boats. Public access via a ramp is vital as well.

ACTION: The Coalition will continue to monitor development and encourage the Port to install this float and public access in their long-range plans for the south side of the Whatcom Waterway.

The policies for uses of the marine trades area are identified in the 2018 Waterfront District Sub-Area Plan:

“This 58-acre area is characterized by a working waterfront that will support a new Clean Ocean Marina or other water-dependent use which adaptively reuses the ASB wastewater treatment lagoon. The main focus of development in this area is to accommodate jobs revolving around marine trades such as fishing, boat building, boat repair, marine haul out facilities, marine product manufacturing and supplies, research and development.”¹³

Industrial uses are permitted; other non-residential uses require conditional permits. Some of the uses may be allowed in specific locations (on arterial street, ASB Lagoon etc.). Residential is not allowed.

¹³ 2018 Waterfront District Sub-Area Plan, Page 36

TABLE 6 – PERMITTED USES AT MARINE TRADES CENTER

Uses	Permitted
Water Dependent & Related:	
Eating & Drinking Establishment	Permitted provided Use fronts an arterial Street, Public Park or ASB Marina
Non water related:	Conditions
	<i>Uses Limited to construction, shipping, industrial or marine-related activities or products manufactured or processed in the district; 2018 Sub Area Plan Amendment to include R&D, Alt.-Energy or Hi-Tech uses.</i>
Commercial Office/ Retail	
Commercial Recreation	Conditionally Permitted provided Use fronts an arterial Street, Public Park or ASB Marina
Public or Semi-Public Assembly (Museum, Theatre, private club)	Either permitted or conditionally permitted provided use abuts an Arterial Street.
Industrial	Permitted
Residential	Not Permitted

Source: Port of Bellingham ASB Land Use Options Categorized

Tables 6 and 7 describe setbacks and buffers required for water-oriented uses (Table 6) and recreational use (Table 7).

TABLE 7 – WATER ORIENTED USES (WD)

USE	PERMITTED	SETBACK	BUFFER
Water Dependent			
On Land	Y	0	NONE
In Structure	Y	0	NONE
Water Related			
On Land	Y	0	NONE
In Structure	Y	50'	NONE
Water Enjoyment			
On Land	Y	0	NONE
In Structure	Y	50'	NONE
Public Use Over/In Water	CUP	N/A	N/A
N-W-O	ONLY IF ACCESSORY TO AND SUPPORTS A WD, WR, WE USE		

Source: Port of Bellingham ASB Land Use Options Categorized

TABLE 8 – RECREATIONAL USES (WD)

USE	PERMITTED	SETBACK	BUFFER
Water Dependent			
On Land	Y	0	50' / PTN WD 0'
In Structure	Y	0	50' / PTN WD 0'
Water Related			
On Land	Y	25'	50'
In Structure	Y	50'	50'
Water Enjoyment			
On Land (Park, Plaza)	Y	25'	50'
In Structure (Aquarium, Museum, Restaurant)	Y	100'	50'
N-W-O If Accessory To And Supports A Wd, Wr, We Use	Y	SAME AS PERMITTED USE	50'
N-W-O Which Adaptively Reuses Or Preserves Historic Structure	Y	SAME AS PERMITTED USE	50'

Source: Port of Bellingham ASB Land Use Options Categorized

Port Approves Rental Policy in Support of Marine Trades¹⁴

The Port Commission has voted 3-0 in support of a Water Reliant Commercial Marine Rental Policy to provide a consistent and predictable rent structure for working waterfront employers. The policy was developed in coordination with the Working Waterfront Coalition of Whatcom County to strengthen the harbor core of the County's maritime sector and protect commercial marine businesses where they rely upon access to marine water.

In Whatcom County, 6,033 jobs are created or supported by marine trades, representing 7% of the total workforce. Statewide, the maritime sector produces 148,800 jobs and \$30 billion in fiscal impact.

The Port's Water Reliant Commercial Marine Rental Policy offers qualifying businesses a ten percent discount off Rental Revenue Standard Rates. Importantly, it also sets working waterfront land values based on appraisals for water-reliant marine uses rather than commercial uses. The Port's policy will be implemented as new leases are issued or when existing leases are renewed.

¹⁴ <https://www.portofbellingham.com/CivicAlerts.aspx?AID=234>, posted on: May 1, 2017