Tacoma Waterfront Lands Analysis

DRAFT REPORT

PREPARED FOR

City of Tacoma

Tacoma, WA

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1 Executive Summary

An important part of the Shoreline Master Program (SMP) Update is to determine whether there is sufficient land available to meet the most critical needs of water-dependent uses. This includes uses such as:

- Recreational boating (power, sail, and hand launched boats and support services such as fuel, repair and like services),
- Government operations (ferry terminals, moorage for City of Tacoma fireboats, US Navy and US Army and related vessels)
- Commercial/Industrial uses (public and private marine terminals, boat building, ship repair, moorage of company owned vessels, manufacturers or distributors that ship and/or receive products by water)

This report evaluates existing uses and provides an estimate of the future demand by waterfront uses. It also includes an assessment of whether there is sufficient vacant or under-utilized land to meet these needs. The following executive summary briefly describes the findings of the report.

1.1 Water Depth

For waterfront uses, a key issue is the water depth accessing terminals and facilities, and there are different requirements for each type of use:

- Recreational boats typically require minimum depths of 6 to 12 feet[1]. Deeper channels and berths are required for larger boats. Sail boats also require deeper channels and berths than power boats to accommodate underkeel clearances.
- Tugs, barges, larger commercial fishing boats, small freighters, ferries and like craft usually need 10 to 30 feet of water depth. As an example, Martinac recently built a new tug that draws 16 feet of water. With underkeel clearance, this boat will require around 20 feet of water depth.
- Larger commercial vessels (tankers, breakbulk and container vessels) usually need more than 30 feet of water depth. The Ready Reserve fleet at Sperry Dock has a draft of 32 to 34 feet when fully laden and will require a channel and berth draft of around 35 or more feet. Larger container vessels (8,000 TEU+) have drafts of more than 45 feet and require a depth of 50+ feet.

[1] Water depths used in this report refer to depth at mean lower low water (MLLW). Tides of 8+ feet occur in Commencement Bay. Under certain circumstances, non-scheduled cargoes can be loaded at high tide.

1.2 Demand for Waterfront Land

The Tacoma waterfront is well utilized with a wide array of uses. The following section summarizes key findings related to demand for waterfront space by major sector.

1.2.1 Container, breakbulk, auto and grain terminals

Container, breakbulk, auto and grain terminals currently comprise 854 acres (including North and South Intermodal Yards but excluding road, rail and other infrastructure systems). Approximately 341.2 of these acres (40%) are in the 200 foot Shoreline District.

Terminal space (including the YTTI development and the proposed Puyallup/SSA terminal and minor increases to breakbulk and auto terminal) is expected to reach approximately 1,477 acres by 2028. This is an increase of 623 acres of terminal space, which will require a dislocation of other uses.

1.2.2 Bulk terminals and industrial land

Other (mainly private) marine terminals handle a variety of products including petroleum products, crude minerals (aggregates, cement, and other products used in the construction industry), scrap and ores, forest products and other uses such as marine construction, moorage of commercial vessels and like activities.

1.2.2.1 Petroleum Products

There are four oil refineries and/or distribution facilities in Tacoma: Sound Refining Inc, (Hylebos Waterway), US Oil & Refining Company (Blair Waterway), ConocoPhillips Tacoma Terminal (Thea Foss Waterway) and Valero Logistics (Thea Foss Waterway). These four facilities, which comprise approximately 36.1 acres in the shoreline zone, are expected to remain in place throughout the study forecast period unless dislocated by other uses.

1.2.2.2 Crude Minerals

There are four terminals that receive and/or ship crude minerals. Glacier Northwest receives sand and gravel from its quarries in Puget Sound as an input to cement manufacture. Graymont Lime receives limestone from British Columbia as an input to its manufacture of lime product. G-P Gypsum receives gypsum from Mexico as an input to wallboard manufacture. Walrath Trucking moves aggregates by barge through its facility on the Hylebos Waterway. These four facilities account for 12.2 acres of City of Tacoma's shoreline. It is expected that these firms will remain in their present locations through the end of the study period or be moved to an alternative site if dislocated by terminal development or another water-dependent use.

1.2.2.3 Scrap & Ores

Scrap is handled at Schnitzer Steel, which receives and ships via a marine terminal, and Calbag Metals, which does not ship or receive by water. These firms account for 21.7 acres of the shoreline zone in the City of Tacoma. It is expected that these firms will remain in their present locations through the end of the study period.

1.2.2.4 Forest Products

Forest products are produced at Manke Lumber, Buffelen Woodworking and Simpson Tacoma, among other firms on the Tacoma Tideflats. Most of the outputs from these mills move into the domestic market or are shipped in containerized or breakbulk form to overseas markets. Manke Lumber and Simpson ship/receive by water but Buffelen Woodworking is not water-dependent, since it neither ships nor receives by water. Forest products manufacturers account for approximately 144.8 acres of the shoreline total. There has already been a significant shrinkage in the acreage associated with forest product processing and distribution systems in Tacoma as well as in other areas of the Pacific Northwest. BST Associates projects that the remaining firms will likely stay at their present locations.

1.2.2.5 Other Producers and Manufacturers

Other industrial users account for 110.3 acres. BST Associates projects that these firms will remain at their existing locations unless dislocated by other terminal or industrial uses. The Port also has 212 acres in industrial use (including right of ways).

1.2.3 Moorage and Related Sectors

1.2.3.1 Commercial Vessel Moorage

Moorage for commercial vessels is an important role for a large waterfront community such as Tacoma. Crowley Maritime Corporation services the US Ready Reserve Fleet along Ruston Way at Sperry Dock. American Construction (located on the Hylebos) moors company owned construction equipment. Foss and Crowley have moorage for company owned tugs and barges. Trident Seafood moors fishing vessels and the US Army moors vessels at the end of the Blair Hylebos peninsula.

Additional moorage of this type could be provided in the Hylebos Waterway from the Weyerhaeuser log dock past the Arkema property. However, water depth is limited in this area to 25 to 30 feet (allowing for underkeel clearance).

1.2.3.2 Boat Builders and Shipyards

There are also a number of firms engaged in building and repairing recreational and commercial boats in Tacoma. Nordlund Boat, Modutech, Metalcraft Marine, Aleutian Yachts and Northcoast Yachts et al manufacture recreational boats. Martinac Shipyard and Marine Industries Northwest build and repair commercial vessels.

Economic conditions affecting vessel acquisition (commercial and recreational) are unfavorable at the present time. This has lead to a reduction in the number of firms in this sector. Metalcraft Marine, Aleutian Yachts and Northcoast Yachts are considering their relocation plans as a result of dislocation from the YTTI Terminal. Metalcraft Marine will likely consolidate to its headquarters in California. The Port is working with the others to relocate to the East Thea Foss Waterway.

Firms engaged in ship and boat building and repair currently account for approximately 14.6 acres in the City of Tacoma's shoreline districts. BST Associates projects that 10 to 20 acres may be required to meet the needs of this sector by the year 2028. A portion of this demand can be accommodated at the Wattles property on the East Thea Foss.

1.2.3.3 Marinas

Tacoma has recently undergone resurgence in redevelopment of its marinas, with some new marinas developed and others rebuilt. Tacoma has approximately sixteen moorage facilities (for permanent and transient moorage). These marinas are well utilized (with a 96% occupancy rate) at the present time. There is a need to allow for additional development of transient and permanent wet moorage facilities. This should include replacing mooring buoys along Ruston Way. There is a need for improved facilities for hand launched and trailerable boats (up to 26 feet long). There is also a need to preserve and enhance recreational boating and upland support activities such as repair, retail and other services. Repair and retail services are provided by Commencement Bay Marine Services, Modutech, J&G Marine, Day Island Boatworks and Hyland Marine in the waterfront area as well as several others in the Greater Tacoma area.

1.3 Supply of Waterfront Land

The following section reviews the utilization of each shoreline zone.

1.3.1 S-1 Western Slope South

The main waterfront uses in S-1 are the recreational boating facilities provided at the Narrows Marina. There appear to be redevelopment opportunities in the uplands of the Narrows Marina (mixed-use development) that could enhance recreational boating facilities.

1.3.2 S-2 Western Slope Central

The main waterfront uses in this area are recreational boating facilities in Titlow Beach Park that are leased to the Tacoma Outboard Association. These uses may be enhanced but are not expected to change significantly in the future.

1.3.3 S-3 Western Slope North

There are no waterfront uses in this area. This is not expected to change.

1.3.4 S-4 Point Defiance Natural

The entire unit is included in Point Defiance Park. There are no waterfront facilities in this area.

1.3.5 S-5 Point Defiance Conservation

The western portion of Point Defiance Park is included in this district and includes Owens Beach, Point Defiance Boathouse Marina, Breakwater Marina, Tacoma Yacht Club, the Point Defiance boat ramp, and Point Defiance-Tahlequah Ferry terminal.

These facilities provide beach access, transportation, and pleasure boating supplies and rentals. The current SMP encourages the development of more access in this district. Tacoma Metro Parks is completing a plan for redevelopment that would enhance boating facilities in this area.

1.3.6 S-6 Ruston Way

The Town of Ruston is located between areas S-5 and S-6. The Point Ruston development, which is located in both the Town of Ruston and the City of Tacoma, may include additional recreational boating facilities.

Additional boating access in District S-6 includes facilities adjacent to commercial businesses (dock at Silver Cloud Hotel et al) and at public facilities (Old Town Dock). The current SMP encourages the development of more public waterfront access in this district.

1.3.7 S-7 Schuster Parkway

The two waterfront facilities in this area are the Sperry Dock and the Port of Tacoma grain elevator (leased to Cargill). The owner of Sperry Dock has proposed a plan to upgrade the facility and increase the number of Ready Reserve vessels that use the facility. There is a conflict, since the plan concerns neighbors. However, there are few (if any) places that this activity could be relocated to in the City of Tacoma.

The grain elevator has been well utilized since its inception. There are no anticipated changes to the grain elevator.

1.3.8 S-8 Thea Foss Waterway

The Thea Foss Waterway has water depths of 19 to 22 feet inside the East 11th Street bridge and 29 feet outside the East 11th Street bridge. The Wheeler Osgood waterway has a stated depth of approximately 2 feet at its mouth.

There are several marinas and support services (fuel, repair et al) along the Thea Foss Waterway. It is expected that there will be an increase in this activity on both the West and East sides of the waterway.

There are also several industrial operations including two petroleum products distributors, a manufacturer of marine floats and a shipyard. These uses are located on private property and will likely be there until the owner decides to change the use.

Other properties (Wattles, Petrich, BNSF, et al) may be redeveloped in the future. It is expected that the waterfront will accommodate waterfront uses (marinas, boat ramp and support facilities) and possibly office buildings transitioning to light/heavy industry, which could include for boat building, storage and repair.

Urban Waters (a laboratory and research facility) is planned for construction between the two petroleum distribution facilities on the east Thea Foss Waterway.

The east Thea Foss Waterway area is another site of conflict over land use, competing visions of industrial and mixed-use operations.

1.3.9 S-9 Puyallup River

The Puyallup River is not navigable by the general public and there are no waterfront facilities. The Puyallup River is used by the Puyallup Tribe fishermen for subsistence and other fisheries.

1.3.10 S-10 Port Industrial (Hylebos Creek)

The Port Industrial area is well utilized, primarily by water-dependent uses.

The Middle Waterway, which has water depth of around 12 to 15 feet at the outer end, is used for tug moorage, and by a log lift dock and a ship yard.

The St. Paul Waterway has water depth of between 2 feet and 23 feet and accommodates Simpson's barge dock.

The Sitcum Waterway, which has a depth of 51 feet, is fully utilized by Port of Tacoma container and breakbulk terminals.

The Blair Waterway, which also has a depth of 51 feet, is used by Port of Tacoma container terminals as well as several private terminals (Concrete Tech, GP Gypsum, Graymont Lime et al). There are plans to build two new container terminals on the Blair Waterway (one by the Port of Tacoma, one by the Puyallup Tribe and its partners SSA). This waterway is fully utilized. Expansions of marine terminals could dislocate other water-dependent uses.

The Hylebos Waterway, which has a controlling depth of 30 feet, is mainly used by private water-dependent firms (American Construction, Sound Refining, Modutech, Manke Lumber, Glacier Northwest, Schnitzer Steel et al) and marinas (Hylebos Marina). There are also several non-water-dependent uses (Calbag Metals, Buffelen Woodworking, et al). It is expected that if existing non-water dependent firms cease their use of a site, it be considered for water-dependent use.

Much of the Blair-Hylebos peninsula will be re-configured as a result of container terminal development by the Port of Tacoma and the Puyallup Tribe with their partner SSA.

There are a few vacant properties in this waterway (the 30-acre Pony Lumber site and the 5.9-acre Puyallup Tribe property at the end of the waterway), which could support water-dependent uses.

1.3.11 S-11 Marine View Drive South

Chinook Landing Marina, owned and operated by the Puyallup Tribe, and the adjacent Ole & Charlie's accommodate recreational boaters in this area. These uses are expected to continue throughout the study period.

1.3.12 S-12 Marine View Drive North

Tyee Marina and log storage occur in this area. These uses are also expected to continue throughout the study period.

1.3.13 Summary Conclusions

The City of Tacoma's shoreline area is well utilized. As shown in Table 1, there are 1,830.5 acres within the City's shoreline but only 128.1 acres are designated as vacant in the Pierce County Assessor's database.

Table 1 – City of Tacoma Acreage within Shoreline Districts

	Day Island to Titlow Park	Titlow Park to SR16	SR16 to Point Defiance	Point Defiance Undeveloped	Point Defiance Developed	Ruston Way	Old Tacoma to Thea Foss	Thea Foss Waterway	Puyallup River	Port	Outer Hylebos	Hylebos to Brown's Point	
Use	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**	**S9**	**S10**	**S11**	**S12**	**Total**
Commercial	0.5	0.2	0.4			43.6		5.8	1.4	6.3	0.4	1.7	60.3
Government								0.9		1.9			2.8
Ferry Terminal					29.3								29.3
Greenbelt											3.2		3.2
Industrial								42.2	19.4	348.3			409.9
Marina	15.7				17.3			17.8		10.9	73.2	23.4	158.3
Military										3.1			3.1
Museum								2.3					2.3
Park	2.4	67.8		91.9	40.8	22.6	3.6	6.6	7.2	0.9			243.8
Port							13.7		4.3	512.2			530.2
Residential	4.3	3.0	0.5	0.1				3.0		4.9	2.5	3.1	21.4
ROW/Utilities	1.1	17.4	32.2			23.8	23.6	9.5	23.3	2.8			133.7
Ship Moorage							5.0						5.0
Tidelands	1.6	16.5	8.2			8.2			28.6	7.6		15.7	86.4
Tribe									10.6	2.1			12.7
Vacant	0.3	0.1	24.9	-	-	8.5	7.7	9.5	14.1	0.7	5.1	57.2	128.1
Total	25.9	105.0	66.2	92.0	87.4	106.7	53.6	97.6	108.9	901.7	84.4	101.1	1,830.5
Vacant % of Total	1.2%	0.1%	37.6%	0.0%	0.0%	8.0%	14.4%	9.7%	12.9%	0.1%	6.0%	56.6%	7.0%

Source: BST Associates, RMI, Assessor's Database

Further observation of the vacant land reveals that 12.8 acres have steep slopes or other conditions affecting development. In addition, 44.4 vacant acres are located in areas that only allow residential or commercial but not industrial uses. For example, the 24.9 vacant acres in S-6 are part of the Point Ruston development. This leaves approximately 70.9 acres for industrial development, most of which is located on the area in the Thea Foss Waterway (9.5 acres), the area from the Middle Waterway to the Puyallup River (14.7 acres) and Hylebos Waterway (46.6 acres of industrial land).

Due to a lack of upland acreage and to potential conflicts with neighboring uses, it is unlikely that water-dependent uses (other than recreational boating and support facilities) will be placed in the shoreline, from the Narrows Marina at the south to the Sperry Dock at the north (i.e. District S1 through District S7). Similarly, steep slopes and lack of upland in Districts S11 and S12 are likely to prevent new water dependent uses. Finally, District S9 (Puyallup River) is not navigable. As a result, any future water dependent uses will most likely occur in District S8 or S10.

Along the City of Tacoma shoreline there are several parcels with non-water-dependent uses that could be utilized by water-dependent uses in the future, and which are located primarily in the Hylebos Waterway (District S10). Some of these parcels, such Buffelen Woodworking, are privately owned. Others are owned by the Port of Tacoma and leased to private firms, such as Carlisle Transportation and Calbag Metals in the Hylebos Waterway. A transition to water-dependent use should be evaluated if there is a change of use at these types of properties.

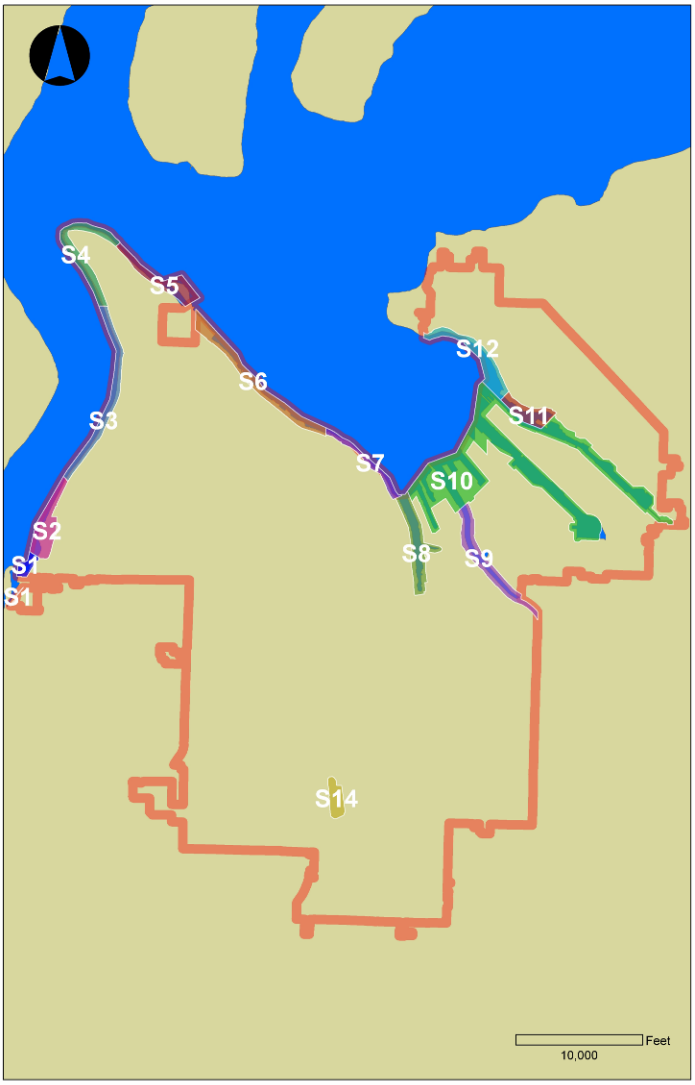
2 Inventory of Land Ownership and Use

2.1 General Location

The shoreline in the City of Tacoma is divided into 14 zones referred to as "S" (or shoreline) districts. Of these 14 districts, numbers S1 through S12 encompass the saltwater shoreline of the city, as well as the Puyallup River, Hylebos River, and the waterways in the downtown and Port areas. Zone S13 is deepwater in Commencement Bay, and S14 is Wapato Lake. This analysis focuses on Zones S1 through S12.

The area under consideration includes approximately 33.6 miles of marine shoreline (including portions of Puget Sound, the Narrows, and Commencement Bay), 2.7 miles of the Puyallup River (per bank), and 0.5 mile of Hylebos Creek (per bank).

Figure 1 - Overview of Shoreline Zones



2.1.1 S-1 Shoreline District – Western Slope South

The "S-1" Shoreline District is located along Tacoma Narrows, extending from the Tacoma City Limit (South 19th Street), north to 6th Avenue. It extends landward 200 feet above the ordinary high water mark of the Tacoma Narrows. The intent of the "S-1" Shoreline District is to retain the existing character of the area and prohibit development of uses which will have significant adverse impact on existing housing. This shoreline district is designated as an "urban" environment per Tacoma Municipal code. The following uses and development activities are permitted within this district: a) environmental remediation and habitat improvement; b) construction and maintenance of recreational marine facilities to include piers, wharves, docks, and floats; c) residential on upland areas; and d) construction of roads, railroad and underground utilities.

Figure 2 - Shoreline Zone S1

The major waterfront features of this zone include the Narrows Marina, the BNSF rail line, a portion of Titlow Beach Park, and a restaurant and tavern. In addition there are approximately 20 single-family residences and one small multi-family building.

The Narrows Marina[2] is a relatively large marina that offers the following amenities: wet moorage for approximately 500 boats, dry storage for around 275 boats (dry sheds), winter storage for 200 to 300 boats (in warehouses), bait and tackle store, convenience store with food, snacks, beverages and necessities, fuel dock (newly refurbished), boat trailer storage (for tenants only), RV Storage, public boat launch and park, picnic area and grocery store within walking distance.

Figure 3 – Narrows Marina

Source: BST Associates

Commercial uses (The Beach Tavern and Steamers Seafood Café) are also located in the S-1 area.

Figure 4 – Steamers Restaurant and Residences in S-1 Zone

Source: BST Associates

Titlow Park, which is located in both the S-1 and S-2 shoreline zones is owned and operated by Tacoma Metro Parks. It consists of 74.08 acres, 5.5 acres of which are maintained[3]. Titlow Beach Park is a signature community park. Titlow Pool and Titlow Lodge Community Center are the two primary facilities. Titlow Beach is popular for sunbathing, picnicking,

[2] Source: Personal conversation with Jennifer Derrick, Narrows Marina

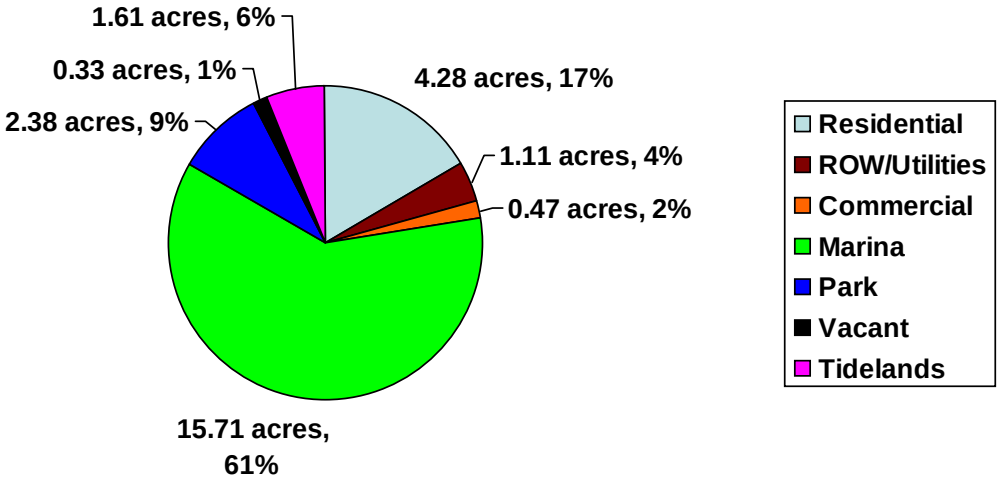
[3] Source: Metro Parks Table B-3 Park Land and Outdoor Facility Inventory: SW Planning Area.

launching kayaks and canoes and as an entry point for scuba diving. Adjacent to the beach there is a large covered picnic shelter with a fireplace and barbecues.

There are approximately 25.9 acres of land from the shoreline to the 200-foot mark in District S-1. As shown in Figure 5, most of the uplands in this area are utilized by the marina (15.7 acres or 61% of the total) and residences (4.3 acres or 17% of the total). The remaining used parcels are in park (2.4 acres of Titlow Park), tidelands (1.6 acres), right of way or utilities (1.1 acres), and commercial (.5 acres). There are approximately 0.3 acres of vacant land, which represents approximately 1% of the total land area. Some of the vacant land has been designated with major problems.

It is unlikely that the existing upland uses will change substantially in the S-1 Shoreline area during the forecast period.

Figure 5 – S-1 Shoreline Land Use Distribution



2.1.2 S-2 Shoreline District – Western Slope Central

The "S-2" Shoreline District is located along the shoreline of Tacoma Narrows, from 6th Avenue to the Tacoma Narrows Bridge. It extends 200 feet landward of the ordinary high water mark of the Tacoma Narrows. The "S-2" Shoreline District is designated as a "conservancy" environment per Tacoma Municipal code to encourage retention of the natural beach areas for their educational, recreational, and scenic value and to retain the steep slopes as a buffer between railroad and residential uses. Uses and development activities permitted within this district include: a) environmental remediation and habitat improvement; b) maintenance of existing structures or developments; c) underground utilities and road maintenance, however, new road construction shall be prohibited.

Figure 6 –Shoreline Zone S2

A small number of residential parcels are located along the water between Titlow Park, the rail line, and the Tacoma Outboard Association property. These residential parcels make up 3.0 acres or 3% of the total. There is also a small amount of land (.07 acres) used by a commercial business (Steamers parking on ROW). Finally, there is 0.17 acres of vacant residential land, some of which is considered with restrictions (steep slopes et al).

Figure 7 –House and Park in S-2 Zone

Source: BST Associates

Figure 8 –Titlow Park and Parking for Steamers Restaurant in S-2 Zone

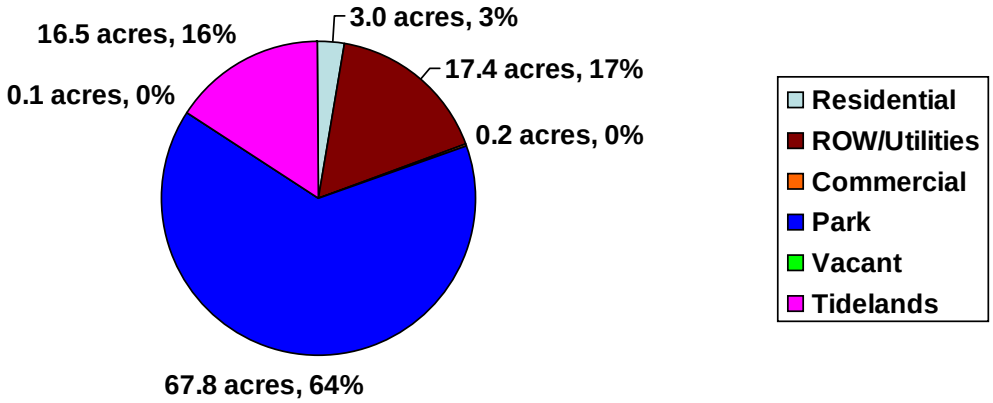
Source: BST Associates

The S2 area consists of 106.5 acres. Most of the S2 zone consists of Titlow Park (67.8 acres or 64% of the total). The Tacoma Outboard Association operates a two-lane boat ramp, clubhouse, and camping facilities on land leased from Metro Parks in Titlow Park.

Right of way and utilities (the BNSF rail line, and a Tacoma Public Utilities sewage facility) account for 17.4 acres or 17% of the total. Tidelands account for 16.5 acres or 16% of the total.

It is unlikely that the existing upland uses will change substantially in the S-2 Shoreline area during the forecast period.

Figure 9 – S-2 Shoreline Land Use Distribution



S-3 Shoreline District – Western Slope North

The "S-3" Shoreline District is located along the Tacoma Narrows between the Tacoma Narrows Bridge and the south edge of Point Defiance Park, and extends 200 feet landward from the ordinary high water mark of the Tacoma Narrows. The intent of the "S-3" Shoreline District is to generally conserve the entire area in its natural state, which will allow the continuation of the residential community of Salmon Beach, which is a historic area of the City. The area of steep slope above the railroad shall be retained in vegetative cover to reduce siltation of the beach areas and to serve as a noise reducer between the railroad and housing areas.

Figure 10 –Shoreline Zone S-3

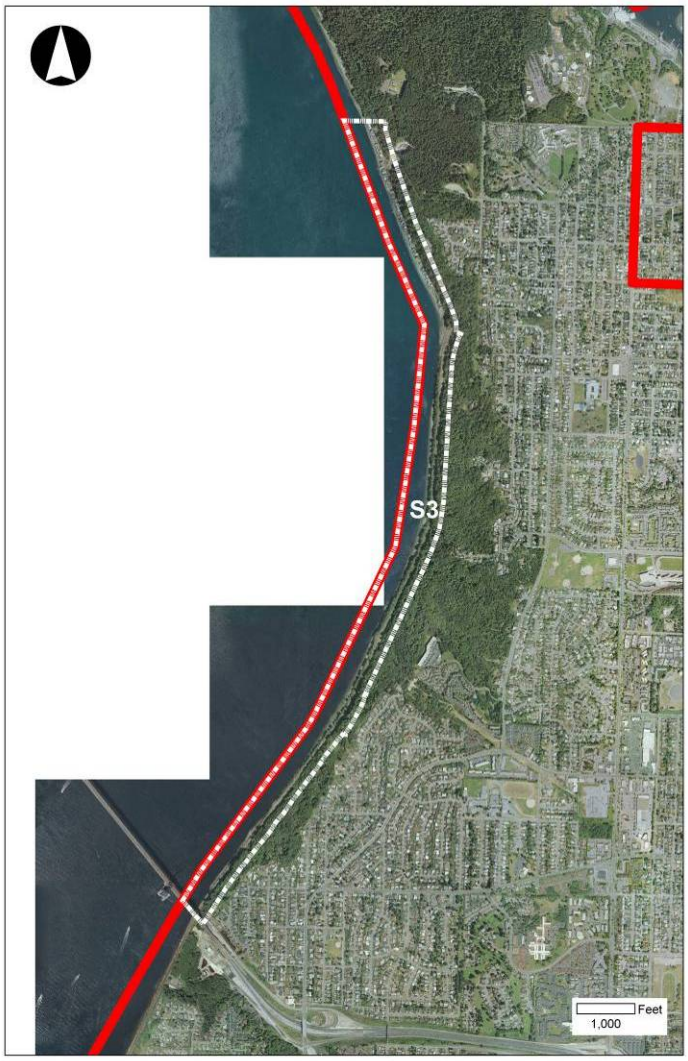
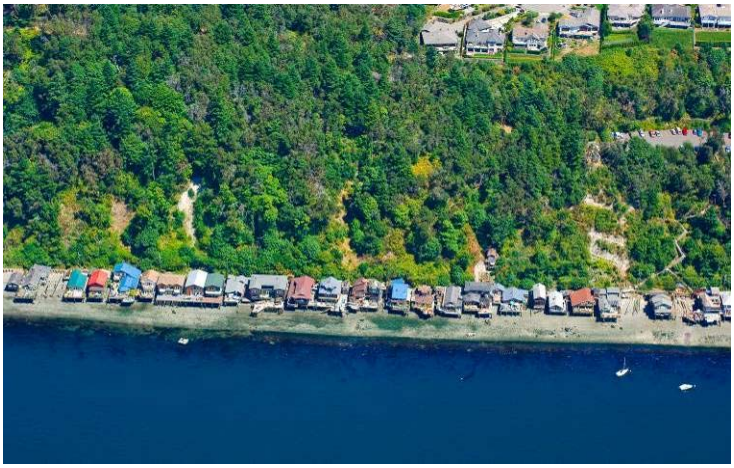


Figure 11 – Residences along Salmon Beach

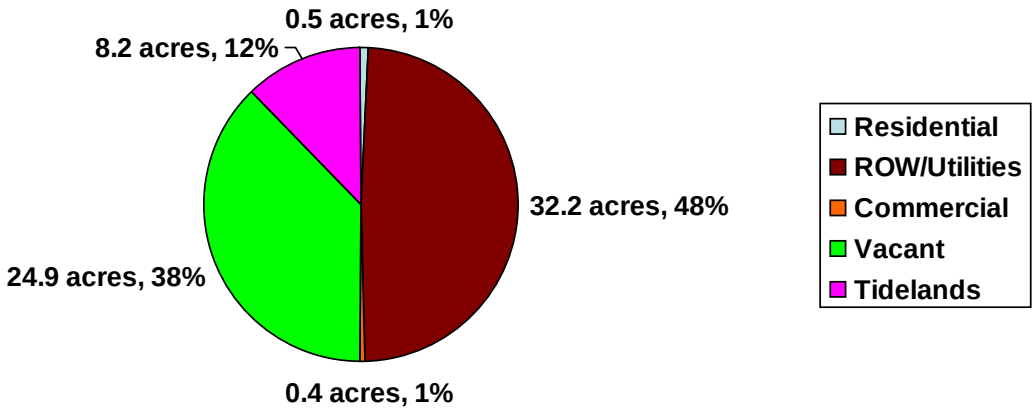


Source: Washington State Department of Ecology

There are approximately 66.3 acres of land from the shoreline to the 200-foot mark in area S-3. As shown in Figure 12, most of the uplands in this area are utilized by rights of way and utilities (32.2 acres or 48% of total). Approximately 25.0 acres are vacant residential parcels (38% of the total). Approximately 8.2 acres are in tidelands (12% of total). There are also small parcels used for parks (0.45 acres) and residential uses (0.5 acres).

It is unlikely that the existing upland uses will change substantially in the S-3 Shoreline area during the forecast period.

Figure 12 – S-3 Shoreline Land Use Distribution



2.1.3 S-4 Shoreline District – Point Defiance – Natural

The "S-4" Shoreline District lies almost entirely within Tacoma Narrows Park, encompassing the west and north shorelines of the park. Point Defiance Park straddles the S-4 and S-5 Shoreline districts.

The 702-acre Park is a popular destination, serving approximately two million people each year[4]. The Park offers natural forest, saltwater beaches and spectacular views offer numerous possibilities for recreation, education and communing with nature, including the following programs and facilities: gardens and Old Growth forest, Point Defiance Zoo & Aquarium, Five Mile Drive, hiking and running trails, Pagoda, Lodge, Owen Beach, Fort Nisqually, Boathouse Marina, Art in the Park, Anthony's Restaurant, Go-Karts and batting cages, Camp 6 Logging Museum, among others.

Figure 13 –Shoreline District S-4

Source: RMI, Inc.

The intent of the "S-4" Shoreline District is to protect the existing natural environment of the area, provide for perpetual utilization for park purposes, and permit the creation and improvement of view areas and trail systems.

[4] Source: Tacoma Metro Parks

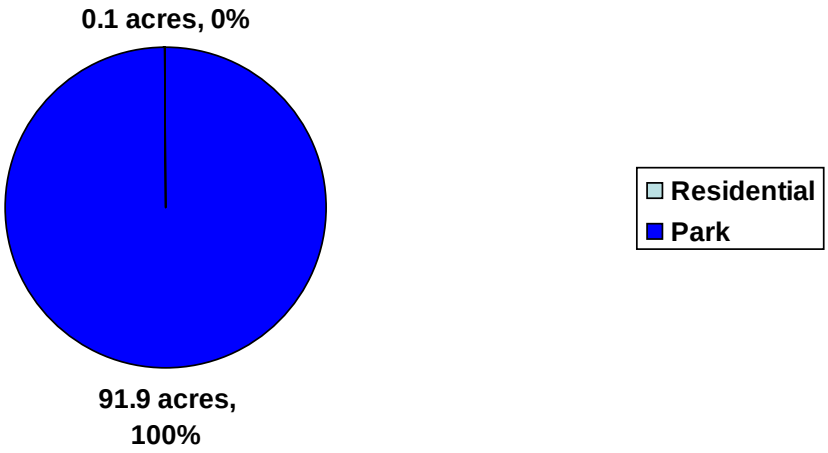
Figure 14 –Typical Shoreline in Zone S-4

Source: Washington State Department of Ecology

This area includes 92.0 acres in the shoreline area (i.e., within 200 feet of shoreline) nearly all of which is in Point Defiance Park (91.9 acres) and with 0.11 acres of residential land.

It is unlikely that uses will change in this district.

Figure 15 – S-4 Shoreline Land Use Distribution



2.1.4 S-5 Shoreline District – Point Defiance – Conservation

The "S-5" Shoreline District is located along Commencement Bay in Point Defiance Park, between the S-4 district and the Town of Ruston. The intent of the "S-5" Shoreline District is to provide for perpetual utilization for park and recreational uses and permit the creation and enhancement of view areas and trail systems and allow development of marinas, boat launch facilities, and other water-oriented commercial uses.

Figure 16 –Shoreline District S5

Source: RMI, Inc.

Unlike the S-4 district, which is undeveloped, the S-5 district contains a variety of commercial and government uses, including the Point Defiance Boathouse, Anthony's Homeport restaurant, a Washington State Ferry terminal, a boat ramp, the Tacoma Yacht Club, and the Breakwater Marina.

The Point Defiance Boathouse offers a public fishing pier, boat and motor rentals, a bait and tackle shop, a fuel dock and a souvenir/gift shop. The Marina has dry storage facilities for approximately 300 vessels up to 17 feet long. According to the operator, there is an apparent demand for storage for longer vessels (up to 23 feet[5]). The Marina also has a public boat launch

[5] Source: Personal conversation with Tim Hartman, manager Point Defiance Marina

with a three-lane launch ramp, located next to the Vashon Ferry Terminal at Point Defiance Park. Vehicle/trailer parking is available in the upper parking lot. Guest moorage is available next to the launch ramp area with stays limited to a maximum of 72 hours.

As part of the Point Defiance Park planning process[6], Tacoma Metro Parks is considering creating a Maritime Village concept wit retail shops and restaurants by the Pont Defiance Marina and Ferry Terminal. The draft plan also calls for more parking and expanded boat moorage facilities, as well as an enhanced boat ramp.

Figure 17 – Point Defiance Boathouse

Source: flickr

WSF's Point Defiance ferry terminal is also located in the S-4 area. The Point Defiance-Tahlequah route is a 1.5 nautical mile auto ferry route that connects north Tacoma with south Vashon Island with a 15 minute crossing. This route has the lowest ridership in the system and there are no weekday or weekend boat delays[7].

The Breakwater Marina, which is located at the edge of the S-4 area, is a full service marina with approximately 150 wet moorage slips for boats from 20 to 50 feet in length. The marina also offers yacht sales, repair services and fuel[8].

The Tacoma Yacht Club[9] is located adjacent to the Breakwater Marina. The Yacht Club has approximately 320 slips with a clubhouse, restaurant and meeting rooms. Club Facilities can accommodate up to around 250 people.

The draft plan for Point Defiance also calls for development of a Peninsula Park on the peninsula adjacent to the Breakwater Marina, which would offer a pedestrian promenade and venues for outside concerts.

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[6] Source: Tacoma Metro Parks http://www.metroparkstacoma.org/files/library/84d7ea108b1639ed.pdf

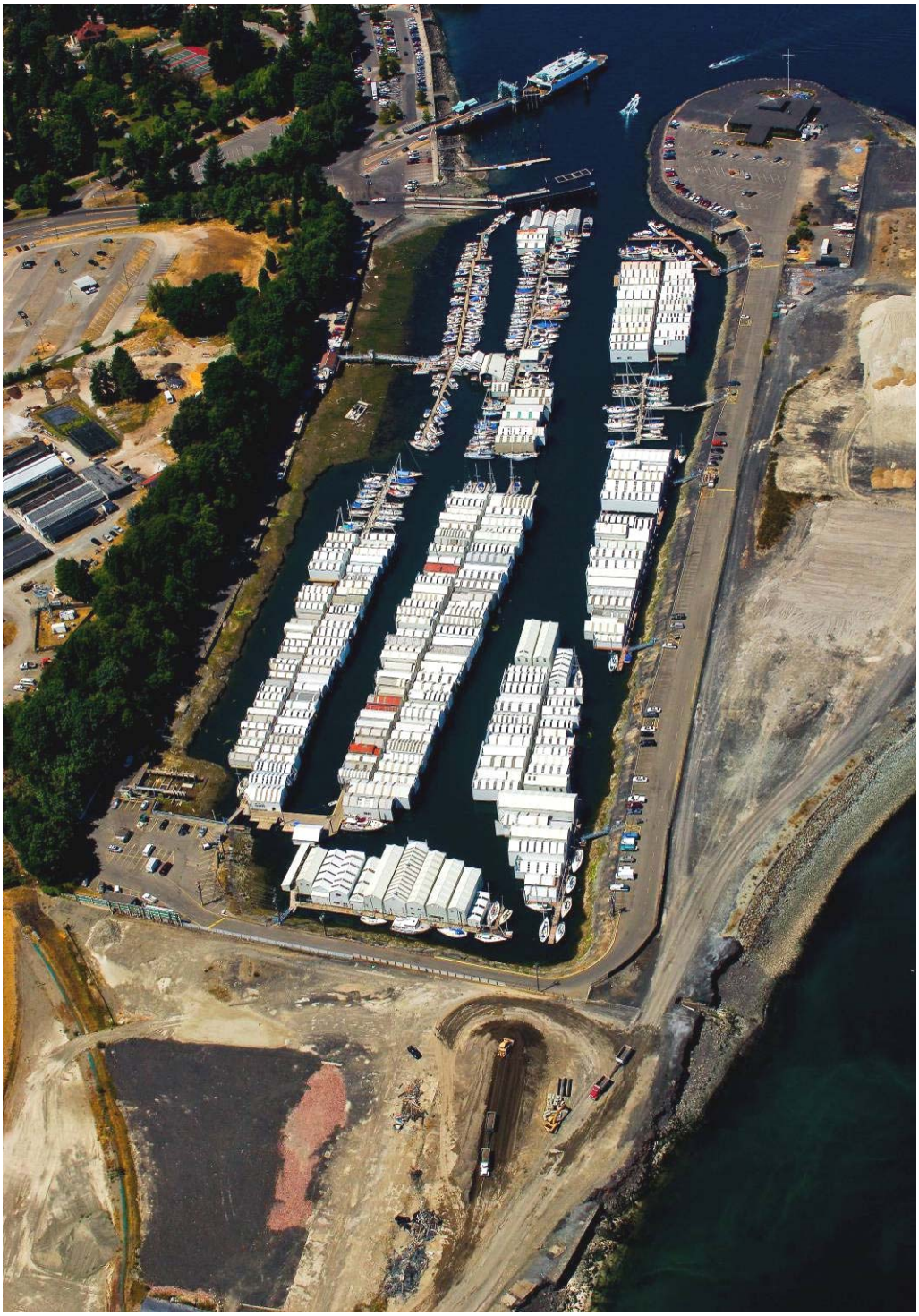
[7] Source: CMS System Performance Report at: http://www.psrc.org/projects/cms/st-ferry.htm

[8] Source: Breakwater Marina

[9] Source: Tacoma Yacht Club

The Draft park plan also calls for additional parking (up to approximately 1,000 cars below grade) and possibly a conference center and retail shops in the area between the Breakwater Marina and the Point Ruston mixed-use development.

Figure 18 – Breakwater Marina, Tacoma Yacht Club, and WSF Ferry Dock



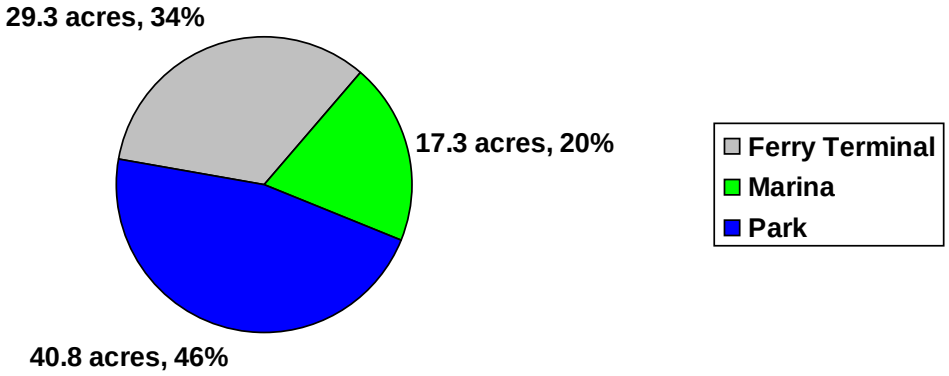
Source: Breakwater Marina, Inc.

Figure 19 –Ferry Terminal and Boat Ramp at Point Defiance

Source: BST Associates

There are approximately 87.4 acres of land from the shoreline to the 200-foot mark. As shown in Figure 20, 40.8 acres is in Point Defiance Park (46% of the total). The WSDOT Ferry Terminal comprises 29.3 acres (34% of the total). The marinas account for the remaining 17.3 acres (20% of the total), a substantial portion of which is the peninsula which is designated for a park.

Figure 20 – S-5 Shoreline Land Use Distribution



Town of Ruston

The shoreline of Tacoma is interrupted in one location by a separate jurisdiction, the Town of Ruston. The Town of Ruston is located on Commencement Bay south of Point Defiance Park, between the Tacoma Shoreline areas S-5 and S-6. It is bordered on one side by Commencement Bay and on all other sides by the city of Tacoma.

Figure 21 –Town of Ruston

Source: RMI, Inc.

Ruston was incorporated in 1906 as a company town for employees of the primary industry in town, the ASARCO copper smelting plant. Since 1990 that plant has been closed and the plant property has been undergoing cleanup as a federal Superfund site. This cleanup is nearing completion, and the land is being redeveloped as a mixed-use residential and commercial center.

The planned development on the Ruston waterfront is called Point Ruston. This development, which is located partially in Ruston and partially in Tacoma, is expected to have around 1,000 new residences, consisting of waterfront condominiums, town homes and single-family homes. There are plans underway to build a hotel (Silver Cloud), restaurants and retail space (approximately 120,000 square feet of space including dining, boutiques, specialty stores,

health and wellness, apparel, galleries and fine art, home décor and furnishings, and a local market) and commercial office space (100,000 to 125,000 square feet of Class A office space). This development will also offer park space and public access, including approximately 50 acres of public open space and a mile-long extension of the Ruston Way pedestrian pathway that will link the existing path with Point Defiance Park.

There has been consideration of building a marina on the shoreline fronting the development.

Figure 22 – Construction at Point Ruston

Source: BST Associates

Figure 18 – Artist Rendering of Point Ruston[10]

[10] Source: Point Ruston

2.1.5 S-6 Shoreline District – Ruston Way.

The "S-6" Shoreline District runs along the Commencement Bay shoreline for approximately 2.5 miles, between the southern edge of the Town of Ruston and Garfield Park in Tacoma. The intent of the "S-6" Shoreline District is to encourage development of a coordinated plan of mixed public and private water-oriented use activities, including commercial, recreational, and open space development, which will prohibit development of new industrial use activities.

Figure 23 –Shoreline District S-6

Source: RMI, Inc.

A signature feature of this area is Ruston Way Park, which consists of 43.8 acres and offers 14,085 feet of hard surfaced trails and 557 feet of soft surfaced trails[11]. This park straddles the S-6 and S-7 areas. In addition, there are several other parks in the S-6 area including: Les Davis Pier and Marine Park, Commencement Park, Dickman Mill Park, and Hamilton Park.

There are numerous commercial businesses in this area, including: hotels (the Silver Cloud Inn), office space (Ruston Way Plaza, Harbor Place Office Building, Holman Building,

[11] Source: Metro Parks Table B-1 Park Land and Outdoor Facility Inventory: NW Planning Area.

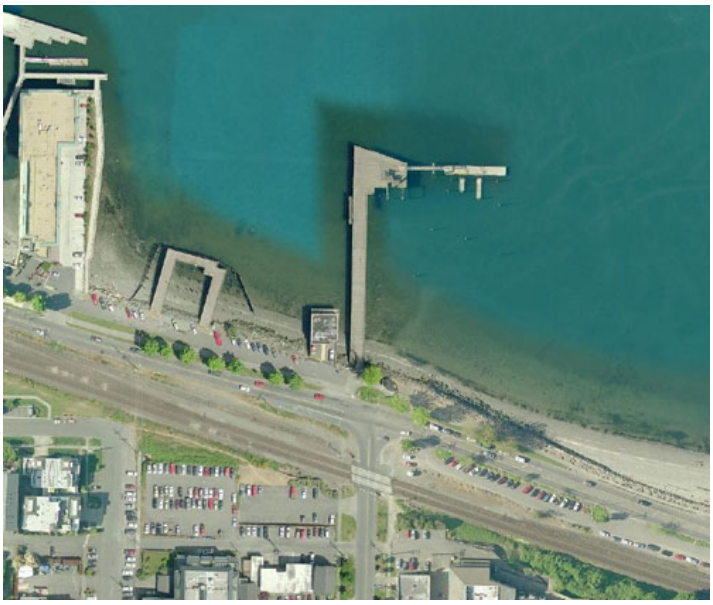
McCarver Square, and several independent offices such as those housing Raymond James Financial and attorney's offices), restaurants (Duke's Chowder House, Lobster Shop Restaurant, Harbor Lights Restaurant, Ram American Fish and Grillhouse, CI Shenanigans, Katie Downs Tavern et al) and retail shops (Ocean Fish Company, Johnny's Seafood). In addition, a portion of the Point Ruston mixed-use development is located in this area.

Figure 24 – Silver Cloud Hotel & CI Shenanigans

Source: Silver Cloud Hotel, flickr

Old Town Dock is owned by the City of Tacoma and maintained by Metro Parks Tacoma. However, a recent inspection of the dock by the City's Public Works Department identified several structural concerns. As a result, its use will be limited until it is repaired. The dock is in the City's 2008-2013 Capital Facilities Plan but the project has not started and remains largely unfunded.

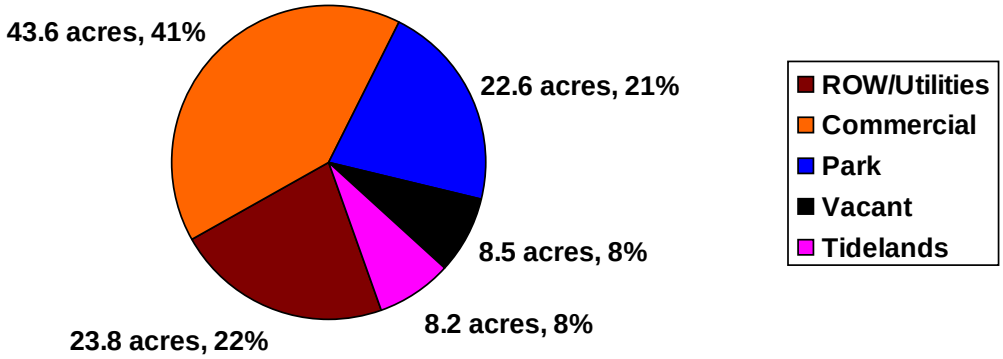
Figure 25 – Old Town Dock



Source: The Tacoma Sun

Commercial uses account for 43.6 acres (41% of the total in this area). Rights of way and utilities account for 23.8 acres (22% of the total), most of which consists of the Burlington Northern Sante Fe railroad right of way. Parks account for 22.6 acres (21% of the total). Tidelands account for 8.2 acres (8% of the total). There are 8.5 acres of vacant land, consisting mainly of commercial lands.

Figure 26 – S-6 Shoreline Land Use Distribution



2.1.6 S-7 Shoreline District – Schuster Parkway

The "S-7" Shoreline District generally runs between Old Tacoma (starting near North Starr Street) and the entrance to the Thea Foss Waterway (adjacent to Thea's Park). It encompasses the land between the ordinary high water mark of Commencement Bay and a line extending 200 feet inward. The intent of the "S-7" Shoreline District is to allow development of deep water terminal and light industrial facilities, but to preserve the character and quality of life in adjoining residential areas, school and park properties.

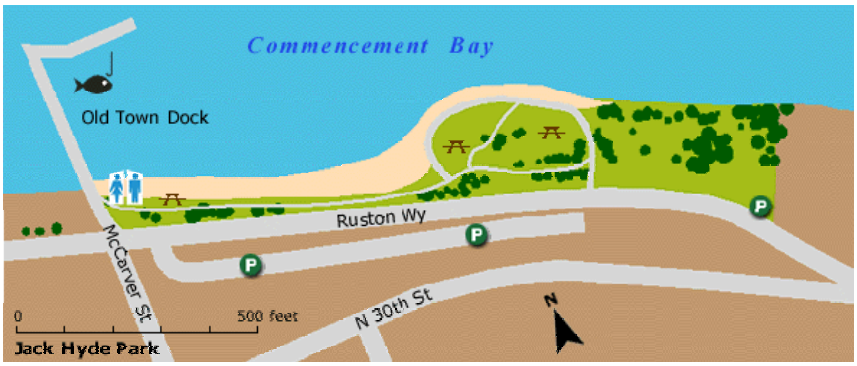
Figure 27 –Shoreline District S-7

Source: RMI, Inc.

Jack Hyde Park, which is located in this area, is approximately three acres. "In 1976 the City bought three acres along Ruston Way. This was the site of the Tacoma Boatbuilding company. Originally known as Old Town Beach Park it was later renamed Commencement Park. (In 2002 it was renamed Jack Hyde Park at Commencement Bay.) The funds for this purchase came from a community development grant from the federal government. Commencement Park was opened to the public in 1978.[12]"

[12] Source: Tacoma Metro Parks

Figure 28 – Jack Hyde Park



Source: outthereimages.com

Chinese Reconciliation Park, which is approximately 4-acres in size, was built "to commemorate the forced expulsion of Chinese immigrants from Tacoma in November 1885. A mob that included the mayor, a city councilman, the sheriff and a judge forced people out and burned their homes.[13]"

Figure 29 - Chinese Reconciliation Park

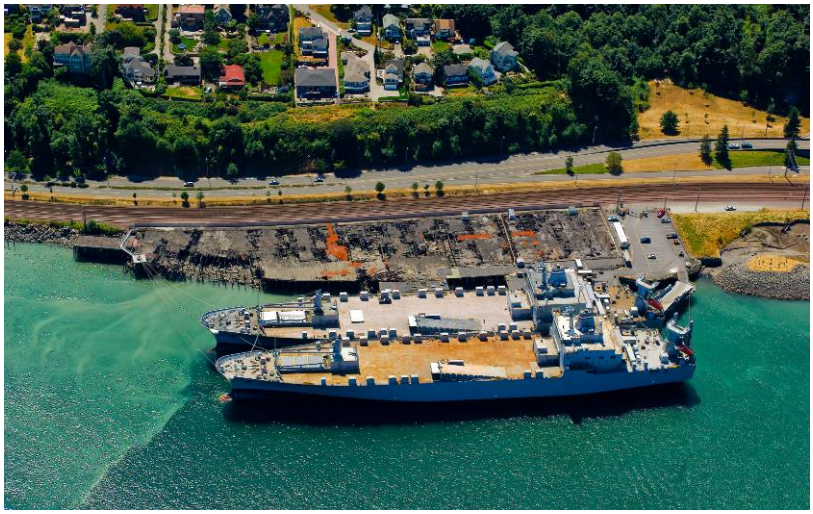
Source: City of Tacoma

The US Department of Transportation's Maritime Administration (MARAD) activated 13 Ready Reserve Force (RRF) ships on 24 January 2003 to support Operation Enduring Freedom. The activations follow orders received from the US Navy's Military Sealift Command. Two of these large pre-positioned MSC ships are assigned to Tacoma and are moored in the S7 area (Cape Intrepid and Cape Island)[14]. These vessels are approximately 685 feet long, beam of 102 feet and a maximum draft of 32 feet. Crowley Liner Services administers the ships (in Tacoma and elsewhere) under a contract with the Ready Reserve.

[13] Source: Tacoma News Tribune

[14] Source: http://www.globalsecurity.org/military/agency/dot/rrf.htm

Figure 30 - Cape Intrepid and Cape Island



The owner of Sperry Dock sought to improve the dock and allow for docking of additional ready reserve vessels. These vessels have a loaded draft of 34 feet, which can be accommodated at this site.

This proposal was (what is final status of this issue)

Source: Washington State Department of Ecology

Cargill, one of the world's largest grain trading and food processing companies, leases and operates the Port's 11-acre, 3 million bushel-capacity grain terminal.

Figure 31 –Cargill Grain Terminal Tacoma

Approximately 6 million short tons of grain were exported through the facility during each of the past four years. Most of the grain exported at the terminal is No. 2 Yellow Corn, which is used for livestock feed[15]. The water depth at this terminal is approximately 73 feet below mean lower low water (MLLW), which is more than sufficient to accommodate any vessels carrying grain and related products.

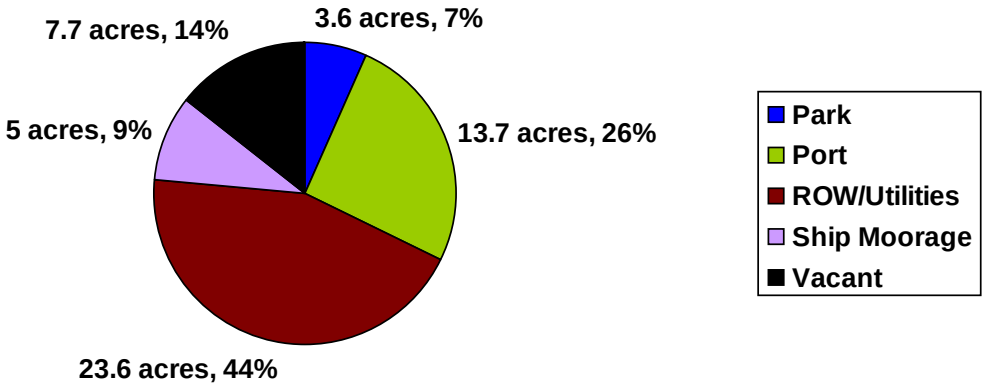
Source: Washington State Department of Ecology

[15] Source: http://www.portoftacoma.com/Page.aspx?cid=592

There are approximately 53.6 acres of land from the shoreline to the 200-foot mark in area S7. As shown in Figure 29, 23.6 acres are in BNSF railroad right of way (44% of total). The Port grain terminal accounts for 13.7 acres (26% of the total). The Sperry Dock, utilized for Ready Reserve Fleet idle moorage accounts for approximately 5 acres (9% of the total). Parks account for 3.6 acres (7% of the total). There are approximately 7.7 acres of vacant land, 14% of the total land area.

It is unlikely that upland uses will change significantly in this area.

Figure 32 – S-7 Shoreline Land Use Distribution



2.1.7 S-8 Shoreline District – Thea Foss Waterway.

The "S-8" Shoreline District includes all of the land inside the Thea Foss Waterway, from the ordinary high water mark 200 feet inland. Included in this, also, are the Wheeler Osgood Waterway and its 200 foot boundary. The intent of the "S-8" Shoreline District is to improve the environmental quality of Thea Foss Waterway; provide continuous public access to the Waterway; encourage the reuse and redevelopment of the area for mixed-use pedestrian-oriented development, cultural facilities, marinas and related facilities, water-oriented commercial uses, maritime activities, water-oriented public parks and public facilities, residential development, and waterborne transportation; and to encourage existing industrial and terminal uses to continue their current operations and leases to industrial tenants.

Figure 33 –Shoreline District S-8

Source: RMI, Inc.

The Thea Foss Waterway is approximately 1.5 miles long with an authorized channel of 29 feet from deep water to the 11th Street Bridge, 22 feet from the bridge to 14th street and 19 feet (from 14th Street to the end of the waterway). The actual depths range from 9 feet to 24 feet in this area, and the depths outside the bridge can accommodate small commercial vessels (small

parcel tankers and barges) while the area inside the bridges can accommodate recreational and other small commercial craft (medium sized fishing boats and like craft)[16].

The Thea Foss Waterway has been under-going a major transformation from industrial to mixed-use with public access on the west side of the waterway. Plans for the east-side of the waterway are still under development. The Wheeler-Osgood Waterway is approximately 0.3 miles long, runs east to west, entering the Thea Foss Waterway approximately halfway down the east shoreline just south of the 11th Avenue Bridge and north of J.M. Martinac Shipbuilding. The Wheeler-Osgood Waterway is relatively shallow, except near the Thea Foss Waterway.

Figure 34 – Thea's Park

Source: Tacoma Metro Parks

Thea's Park, which is located at South 4th and Dock Street; consists of a linear park comprised of 3.4 acres, 1.8 of which are maintained. Thea's Park provides 1,337 feet of hard surfaced trail.

There are approximately 1,200 lineal feet of transient moorage north of Balfour Dock building to Thea's Park, owned by FWDA.

Figure 35 – Foss Waterway Seaport

Source: Foss Waterway Development Company

At the northwestern end of the Thea Foss Waterway, the Foss Waterway Seaport (developer), Foss Waterway Development Authority (building owner) and partners (City of Tacoma et al) are developing the Foss Waterway Seaport. The first phase of a planned $24 million overhaul of the 108-year-old Balfour Dock structure has been completed. When finished in 2011, the building will serve as a museum, classroom, conference center and heritage boat-building shop.

[16] Source> Port Series Handbook Number 35, revised 2003, US Army Corps of Engineers for the Ports of Tacoma, Olympia and Grays Harbor Washington.

This facility was used by the recent Tall Ships 2008 festival to moor the U.S. Coast Guard Eagle[17]. In addition, there is a plan to develop 165 feet of permanent floats for transient boater use, two ADA ramps and a pumpout facility in front of the facility. There are 185 feet of transient lineal moorage at Pier A (south end of the Balfour Dock building wharf).

Immediately south is the Foss Harbor Marina, which offers 414 slips for boats and boat houses ranging in size from 26 feet to 96 feet. Slips have electrical service, water, and access to set-up phone and cable service. The Marina also has 96 garage-sized upland storage lockers that are available for rent. There are both covered and open slips at the marina. The Marina also offers: a fuel dock, sewage pump-out station, oil and hazardous waste recycling facilities, potable water, pressure washer rental, tool rental, and vessel assist, among other services.

A tenant, Quinn's Boats offers yacht brokerage and full service engine and outdrive repair. FW Development LLC is redeveloping the Foss Waterway Marina as a mixed-use project. Market-rate condominiums and/or office space with marine-related retail are anticipated for this $50 million project. The marina improvements have been substantially completed.

Figure 36 – Foss Harbor Marina

Source: Washington State Department of Ecology

[17] Source: Tacoma News Tribune, Partially restored Balfour Dock building will serve as Tall Ships venue by Jason Hagey, published: June 21st, 2008

Figure 37 shows the land uses and marinas located from the middle to the end of the Thea Foss Waterway.

In the upper left side of the figure is Dock Street Marina. There are permanent and guest moorage slips at Dock Street Marina at 1817 Dock Street, which is owned by the FWDA. Slips range in length from 36 feet to 60 feet with end ties up to 120 feet. The FWDA Board defined transient moorage in the Foss as not to exceed 7 continuous days. This was due to the limited number of slips. There is an apparent need for additional guest moorage slips in this area.

On the right side of the figure from the bottom are Foss Landing, Johnny's Dock and Delin Docks

Figure 37 – Thea Foss Waterway Marinas

Source: Washington State Department of Ecology

Foss Landing is located at the Southeast end of the Thea Foss[18]. Foss Landing includes a dry storage facility (in a heated and ventilated building that is 6 stories high) that offers approximately 180 spaces for boats from 18 feet up to 38 feet. The facility is fully occupied and has a waitlist. Services include: free launching on demand, full service launching and retrieval, assistance from docking to catering, boat rinse and engine flushing after every haul out, and holding tank pumpout on request. There are also indoor storage lockers available on site. In addition, there are 10 slips (75 feet in length). The facility is gated and secure with private parking and offers cable T.V., phone and internet access; two 50 amp/250 volt power outlets per slip and a holding tank pump out at each slip.

Figure 38 – Foss Landing

Source: Foss Landing

Figure 39 – Johnny's Dock

Source: waymarking.com

North of Foss Landing on the east side of the waterway is Johnny's Dock, a popular restaurant with 60 permanent moorage slips for boats up to 55 feet long[19].

[18] Source: Foss Landing

[19] Source: Johnny's Dock

Figure 40 – 15th Street Moorage & Delin Docks (in upper right of photo)

Source: waymarking.com

There is also 220 lineal feet of moorage at 15th Street (fronting Johnny's Seafood), owned by the City of Tacoma. The Point Ruston Ferry is currently berthed at that location. The FWDA provides management of this facility[20].

Delin Docks, located just north of Johnny's Dock, has 150 permanent moorage slips for boats between 36 and 60 feet long. This facility is owned by FWDA and managed by Elliot Bay Marina[21]. The docks have 30- and 50-amp power, water, restrooms, showers, and Broadband Xpress wireless Internet access.

The J.M. Martinac Shipbuilding Corporation ship yard is located on the east side of the Thea Foss Waterway just south of the Wheeler Osgood Waterway. The ship yard was founded in 1924 and specializes in the design and construction of vessels up to 250 feet long (i.e., tuna seiners, harbor and oceangoing tugs, factory trawlers, ferries, yachts, U.S. Coast Guard patrol

[20] Source: City of Tacoma

[21] Source: Elliot Bay Marina

boats, and a research sailing vessel et al). Collectively, Martinac has delivered over 300 vessels to date. The ship yard is situated on a six-acre site with two fully enclosed construction ways accommodating vessels up to 260 feet long and 48 feet wide. Each building is served by two 10-ton overhead cranes to facilitate material handling. The outfitting dock is equipped with a 22-ton tower crane and can accommodate vessels up to 400 feet long and 20 feet deep. Three mobile cranes provide additional support for construction and repair work[22].

Figure 41 – Martinac Shipyard & BNSF Vacant Land

Source: Martinac Shipyard

Figure 42 – Marine Floats

Source: Marine Floats Corporation

Marine Floats, which produces floating docks is located on the Wheeler Osgood Waterway. The location allows most projects to be delivered by water, saving substantial onsite construction time. Marine Floats has delivered floats for numerous local marinas, including: Tacoma Yacht Club, Delin Docks Marina, Foss Harbor Marina, Foss Landing Marina, Johnny's Dock Marina and the Harborview Marina[23].

[22] Source: Martinac website: http://www.martinacship.com/contact_us.htm

[23] Source: Marine Floats

Petrich Marine Dock, located next to the East 11th Street Bridge is a one-stop provider of supplies and services for boating, marine and water sports needs. Derek's Marine Services also operates from the Petrich Marine Dock, on the East side of the Thea Foss south of the 11th Street Bridge. Derek has a tugboat available for small tows or to clear log jams in Commencement Bay and provide a variety of services for sailboats (lifelines, rigging, furlers, cable rails, spars and sails et al)[24].

The Port of Tacoma bought the Wattles property (20.5 acres) located near the intersection of the Foss and the Wheeler-Osgood waterways in November 2004. The Port intends to keep the property to safeguard their redevelopment as a transition buffer between active waterfront amenities and the industrial area.

Figure 43 – Petrich Marine Dock

Source: Washington State Department of Ecology

The City of Tacoma owns and operates a fireboat station just outside the 11th Street Bridge. At present, the station is operated on a part-time basis but the Fire Department's strategic plan calls for evaluating a restoration to daily fire boat service[25]. The dock is approximately 70 feet long and 10 feet wide and has a water depth of 20 feet. Two fire boats have been docked at this facility (Defiance and Commencement).

[24] Source: Petrich Marine Dock and Derek's Marine Services company websites

[25] Source: Tacoma Fire Department Strategic Plan 2008-2012, Page 11.

Figure 44 – City of Tacoma Fire Boat

Source: Ben Cody

The Olympic Chemical Corporation previously operated a chemical distribution facility at a site just north of the City of Tacoma fire station. This facility is inactive at the present time but has been used to moor tugs owned by Crowley Marine Services[26].

Figure 45 - Commencement Bay Marine Services & Olympic Chemical Corporation

Source: Washington State Department of Ecology

Commencement Bay Marine Services Inc. is located at 820 East "D" Street. Commencement Bay Marine Services provides haulout services up to boats 45' long or weighing 20 ton. In addition, they provide repair services, including: pressure washes, anti fouling bottom painting, sanding and preparing boat hulls, painting stern drives or outboards, zinc installation, minor fiberglass repairs and gel coat repairs. Commencement Bay also operates the Tacoma Fuel Dock.

[26] Source: Port Series Handbook Number 35, revised 2003, US Army Corps of Engineers.

ConocoPhillips operates a bulk petroleum storage, distribution, and blending facility (previously known as the Tosco Terminal) "with a normal safe-fill height storage capacity of approximately 158 thousand barrels (6.7 million gallons). The terminal handles gasoline, diesel fuel, bulk ethanol, and gasoline additives. The annual facility throughput is approximately 180,000,000 gallons per year. Product is received by pipeline and tank trucks and shipped by tank trucks. All pipelines are located aboveground, including those located between the tank farm and truck loading rack"[27]. The terminal has a marine dock approximately 100 feet long with water depth of 24 to 30 feet[28].

Figure 46 – ConocoPhillips

Source: Washington State Department of Ecology

[27] Source: Washington State Department of Ecology

[28] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

Valero Logistics operates a petroleum and chemical bulk terminal at the end of the east side of the Thea Foss Waterway. "The facility is located on 5.3 acres and consists of tank farms, marine loading/unloading dock, and two (2) truck loading racks. Total storage capacity is three hundred fifty thousand (364,000) barrels. The majority of product is received by pipeline and shipped by truck. However, some product is off-loaded from barges, and a rail spur can be used for loading or off-loading. On a monthly average basis, the terminal has averaged throughput of approximately 16 million gallons of petroleum products. Because this terminal is for hire, a wide range of chemical products can be handled. Products include gasoline, diesel, ethanol, aviation gasoline, and gasoline additives."[29] The terminal has a marine dock approximately 200 feet long with water depth of 26 feet[30].

Figure 47 – Valero Logistics

Source: Washington State Department of Ecology

[29] Source: Washington State Department of Ecology

[30] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

There was a plan to build a mixed-use development (Crosswater Condominiums) in the East Thea Foss between the oil distribution facilities on a three acre waterfront site. However, a coalition of business and commercial forces sought to restrict residential structures to the western side of the waterway. In early 2007, the City of Tacoma approved a resolution to purchase the property on the east side of the Thea Foss Waterway located at 302, 303, 306 and 326 East "D" Street.

The plan for redevelopment includes a lab for the City's Public Works Department, Urban Waters marine research center, space for use by the University of Washington Tacoma, and other governmental use may be developed on the site, as well as facilities for private non-profit marine research.

"The Center for Urban Waters will primarily house staff from the City's Environmental Services analytical laboratories and Science and Engineering Division. These units have outgrown their current facilities and are working in temporary trailers. The new facility will provide for work efficiencies and improve communication among staff members. The University of Washington Tacoma will lease a small portion of the new facility for marine research being conducted by the Port of Tacoma Chair and research staff. Dr. Joel Baker, who was selected as the first Port of Tacoma Chair, is the scientific adviser for the Urban Waters marine research center. The initial research interests of the center are: (Ballast water and invasive species, Urban water runoff and marine biotechnology and Aquaculture). This development would be part of a larger effort included in a proposed urban waters innovation zone."[31]

Figure 48 - Center for Urban Waters[32]

The anticipated completion date is 2009 for this proposed 50,000 square foot facility (located on a 94,000 square foot site). The cost to construct is estimated at $23 million.

[31] Source: City of Tacoma

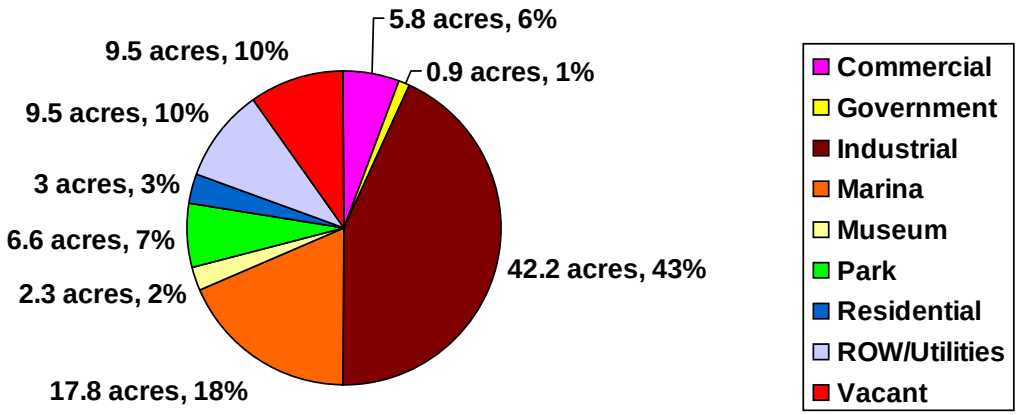
[32] Source: AIA Seattle

There are approximately 97.8 acres of land from the shoreline to the 200-foot mark in area S8. As shown in Figure 44, 42.2 acres are in industrial use (43% of total). The next largest use is marinas accounting for 17.8 acres (18% of the total), followed by 9.5 acres vacant (10% of total), 9.5 acres in ROW/utilities (10% of total), 6.6 acres in Park (Thea's Park and the Foss Waterway Esplanade account for 7% of total), 5.8 acres in commercial uses (Johnny's Dock, The Dock Building and Thea's Landing account for 6% of the total land), 3 acres residential (Albers Mill and Thea's Landing account for 3% of the total), 2.3 acres in museum (Museum of Glass accounts for 2% of the total) and 0.9 acres in government use (1% of total).

This area is in transition. On the western side of the waterway and substantial portions of the eastern side inside the 11th Street Bridge, redevelopment is occurring with enhanced public access, mixed-use buildings and marinas. The area around the Wheeler-Osgood Waterway is still in transition, particularly the area bordering the Thea Foss Waterway. The Port of Tacoma recently purchased the Waddell property and has plans to develop that parcel for industrial and commercial use. The Port is currently discussing relocation of boat builders from the Blair-Hylebos project to the Waddell property. This would require an improved boat launch, which may also serve trailerable. There may also be a marina and commercial office buildings along the shoreline.

The stretch of the east portion of the Thea Foss outside of the East 11th Street bridge will likely remain in government and/or industrial use for the foreseeable future.

Figure 49 – S-8 Shoreline Land Use Distribution

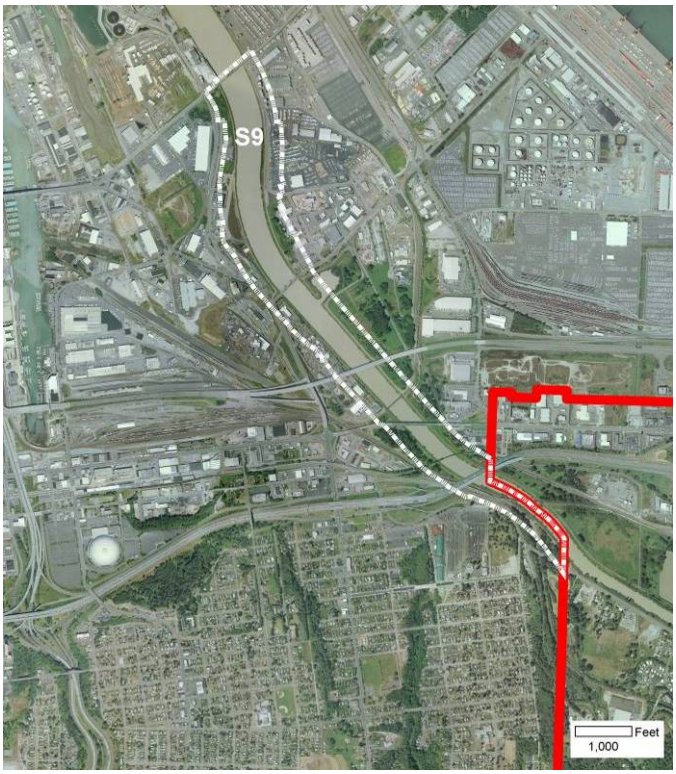


2.1.8 S-9 Shoreline District – Puyallup River

The "S-9" Shoreline District primarily includes the land within 200 feet of the levee along the Puyallup River, between East 11th Street and the Tacoma City Limit. Also included is the area within 200 feet of the portions of Clear Creek which experience tidal influence and any wetlands associated with the Creek. The intent of the "S-9" Shoreline District is to permit recreational development of the riverfront while allowing industrial development of adjacent upland areas, and to encourage continued preservation of Clear Creek, its associated wetlands, and related ecosystems.

The Puyallup River is a shoreline of statewide significance. Primary consideration shall be given to the effects of proposed development on the statutory preferred uses of such shorelines.

Figure 50 –Shoreline District S-9



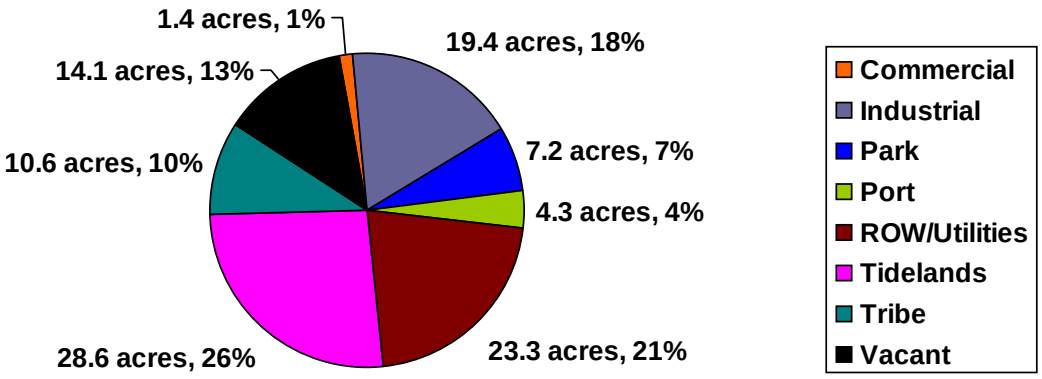
Source: RMI, Inc.

While much of the land in District S-9 is industrial, the waterfront is not used for waterborne transportation or access. The river channel is not maintained for navigation, and a series of fixed-span bridges cross the channel make it unsuitable for ship or barge traffic.

According to parcel information for the district, nearly half of the 109 acres are in uses that preclude industrial development, including 28.6 acres of tidelands and 23.3 acres of right of way or utilities. An additional 7.2 acres or 7% is park. Of the remainder, the largest share of land is industrial. Industrial space accounts for 19.4 acres, or 18% of the total in district S-9, while commercial land accounts for 1.4%.

The Puyallup Tribe controls 10.6 acres, or 13% of the total, and 14.1 acres, or 13% of the total parcel acreage, are vacant. The remaining 4.3 acres are in Port use.

Figure 51 – S-9 Shoreline Land Use Distribution



One of the key facilities in the S-9 District is the City of Tacoma Central Treatment Plant (CTP). This facility was originally constructed in 1952 and has undergone a number of expansions since then. Treated effluent from the CTP is no longer discharged to the Puyallup River but is instead discharged to the deep waters of Commencement Bay via a 3-mile overland pipeline and deep marine outfall and diffuser. The CTP now provides wastewater service to much of Tacoma, as well as all or portions of Fircrest, Fife, Milton, Lakehaven Utility District, unincorporated Pierce County (Dash Point, Browns Point, Fife Heights), and unincorporated King County. The CTP currently has a permitted maximum monthly flow of 38 million gallons per day (mgd) and a permitted peak hydraulic capacity of 78 mgd. Currently under expansion, the CTP will eventually have maximum monthly flow of 60 mgd and a permitted peak hydraulic capacity of 150 mgd.

Figure 52 – Central Treatment Plant

Source: Google Earth

One of the largest industrial users in S-9 is McFarland Cascade, which has both its company headquarters and a large wood treatment facility across the river and downstream of the Central Treatment Plant. The company has a total of 43 acres at the site, of which 6.6 acres fall within shoreline jurisdiction.

Another key use of the S-9 district is environmental remediation. To make up for industrial developments on the Tideflats, the Port of Tacoma restores habitat sites for salmon and other wildlife. The Port also recognizes the need for natural buffers between industrial areas and residential neighborhoods. At the Gog-le-hi-te 9-acre wetlands, directly across the river from the Central Treatment Plant, the Port cleaned up a former city landfill to create the wetlands. The man-made wetlands support a healthy ecosystem with thousands of plants, more than 100 types of birds and a variety of mammals, fish, reptiles and amphibians. A large share of this wetland is located within the shoreline zone.

2.1.9 S-10 Shoreline District – Port Industrial.

The "S-10" Shoreline District contains most of the Port of Tacoma marine terminals, and is encompasses most of the Hylebos Waterway, all of the Blair Waterway, all of the Sitcum Waterway, and the Puyallup River downstream of East 11th Street. The intent of the "S-10" Shoreline District is to allow the continued development of the Port Industrial Area, with an increase in the intensity of development and a greater emphasis on terminal facilities within the City.

Figure 53 –Shoreline District S-10

Source: RMI, Inc.

Years of marine terminal construction have significantly altered the shoreline in district S-10, to the point that delineated high water line is sometimes significantly inland from the actual waterline due to filling of tidelands, and is sometimes located in the water due to cutting back of the shoreline (see illustration). Because of this, summarizing the amount of parcel acreage in the shoreline is not straightforward.

There are three main waterfront facilities on the Middle Waterway.

Figure 54 – View of the Middle Waterway

Source: Washington State Department of Ecology

Foss Maritime Company has a dock for moorage of company owned tugs located 3,000 feet below the inner end of the Middle Waterway. Additional storage for barges is available at a mooring buoy at the outer end of the Middle Waterway[33].

Marine Industries Northwest, Inc. is located at 313 East F Street, on the west side of the Middle Waterway. This facility is a full service shipyard capable of performing new construction, dockside repairs, conversions, and overhauls among other activities. MINI has a 3,000 ton dry dock, a 600 ton marine railway, and a dock 800 feet long with water depth of 12 to 15 feet. According to company website, MINI averages more than 100 jobs per year. MINI

[33] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

services the needs of the commercial freight industry (e.g., Western Pioneer of Seattle), fishing industry (e.g., several new constructions and repairs), tug and barge industry (e.g., Foss Maritime and Crowley Maritime et al) and dockside repairs and alterations to Washington State Ferries, and vessels of the US Navy, Army and Coast Guard[34].

Simpson has a kraft mill and lumber mill in this area and is planning to develop a cogeneration facility.

Figure 55 – Simpson Kraft and Lumber Mills

Source: Washington State Department of Ecology

The Simpson Tacoma Kraft mill is located at 801 Portland Avenue. The mill is situated on a peninsula bordered by the mouth of the Puyallup River on the northeast, Inner Commencement Bay on the northwest, and the St. Paul Waterway on the southwest. The mill manufactures bleached and unbleached kraft pulp and linerboard and specializes in white top linerboard, which is primarily used as the clean, printable outer surface of corrugated boxes. Total production at the mill is approximately 1,500 air dry tons/day. Simpson does not anticipate making significant changes in production rate. The mill operates continuously with the exception of infrequent down periods for maintenance. There are approximately 400 employees at the mill[35]. Simpson has spent more than $400 million in upgrading the mill since its acquisition from Champion in 1986.

[34] Sources: company website and US Army Corps of Engineers, Port Series No 35, Revised 2003

[35] Sources: company website, Washington State Department of Ecology

The Simpson Tacoma sawmill, built in 2002, consists of an 180,000 square foot facility on a 73 acre site adjacent Commencement Bay in Tacoma. The mill's annual production capacity is in excess of 250 million board feet (MMBF), making it one of the largest greenfield sawmill project in the U.S. in the past decade. The mill construction cost was between $50 and $70 million. According to Simpson officials, the mill's output makes it the largest single line production sawmill in existence. The mill produces lumber in five widths, from 2x4-12, and in nine lengths, from 8-24 ft[36]. Due to the housing slowdown, production has been reduced. It will ramp up along with the housing market.

The Simpson log haul-out facility is located on the eastside of the mouth of the Middle Waterway. The facility consists of a ramp and rails extending from the Waterway to the base of the haul road, and a 300-foot long floating dock 125 feet north of the ramp, parallel to the shoreline. A fabricated gangway spans from the shoreline to the floating dock. The dock is fixed to a series of steel pile along the eastern extent of the log rafting area. An additional line of steel pile spaced approximately 40 feet apart runs parallel to the float 6 feet to the water ward side. These pile extend 300 feet northward beyond the end of the float. Immediately south (landward) of the dock is a line of four pile running perpendicular to shore that mark the southern extent of the facility[37]. Simpson also has a barge unloading dock near the entrance of the St Paul Waterway. It is 136 feet by 40 feet in dimensions and has water depth of 23 feet[38].

Simpson is planning to build a co-generation plant at the paper mill, which will use biomass fuels from its mill operations and from other lumber mills. Simpson will create steam for its paper-making processes. The new plant's electrical output, sold to an outside company, will be enough to power 44,000 urban homes. Tacoma Power is building a substation installation that will connect the co-generation plant to the regional power grid. The first power from the plant is expected to be available in the second half of 2009[39].

The Sitcum Waterway is approximately one half mile long (2,700 feet) and has a water depth of minus 51 feet below MLLW.

The area between the Puyallup River and the Sitcum Waterway is used by APM Terminals under a long-term lease from the Port of Tacoma. "Maersk and Sea-Land came to the Port of Tacoma as two separate companies in 1985. The two shipping lines merged in 1999 to become Maersk Sealand. A division of A.P. Moller Group, Maersk Sealand is based in Denmark and operates a fleet of more than 200 vessels. Maersk Pacific Ltd. Leases and operates a 135-acre container terminal on the Port's Sitcum Waterway. This facility has two berths totaling 2,200 feet with a water depth of minus 51 feet at mean lower low water (MLLW)[40]". The facility also accommodates Horizon lines, which provides domestic container service to Alaska. Rail service is provided by the adjacent South Intermodal Yard (SIM), which is served by BNSF and UP railroads, and consists of 32 acres.

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[36] Source: Timber Processing

[37] Source: Grette Associates technical memorandum, dated May 22 2007

[38] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

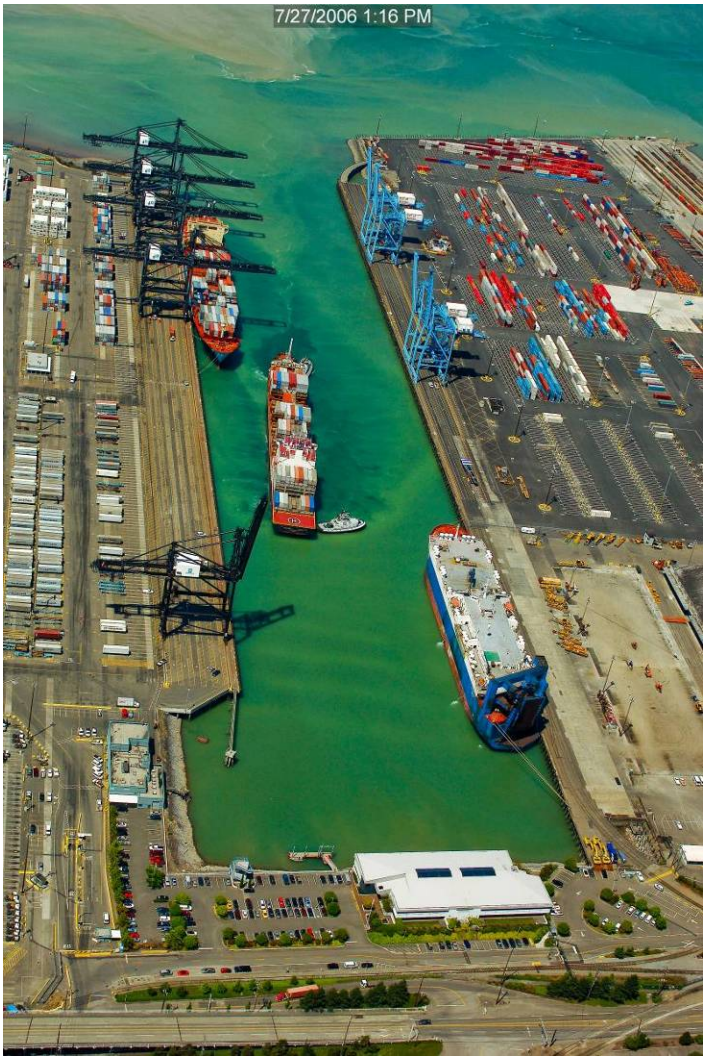
[39] Source: Energy and Utilities

[40] Source: Port of Tacoma

The east side of Sitcum Waterway is utilized by Terminal 7, devoted to breakbulk operations, and the Olympic Container Terminal.

The Olympic Container Terminal (OCT) opened in July 2005 at Terminal 7 and is operated by Ports America Group. Yang Ming Line provides weekly service at Terminal 7 as a part of the CKYH Alliance (represented by COSCO, "K" Line, Yang Ming and Hanjin). The terminal is 54 acres and has rail service via on-dock access to the North Intermodal Yard (NIM, which consists of 26 acres). The terminal has one berth with a length of 1,100 feet and water depth of minus 51 feet M.L.L.W[41].

Figure 56 – Sitcum Waterway & APM Terminal, Terminal 7 and Olympic Container Terminal



Source: Washington State Department of Ecology

Terminal 7 handles breakbulk and RO/RO cargoes, including automobiles and a wide range of tracked and wheeled heavy equipment. The terminal consists of 25 acres, with three

[41] Source: Port of Tacoma

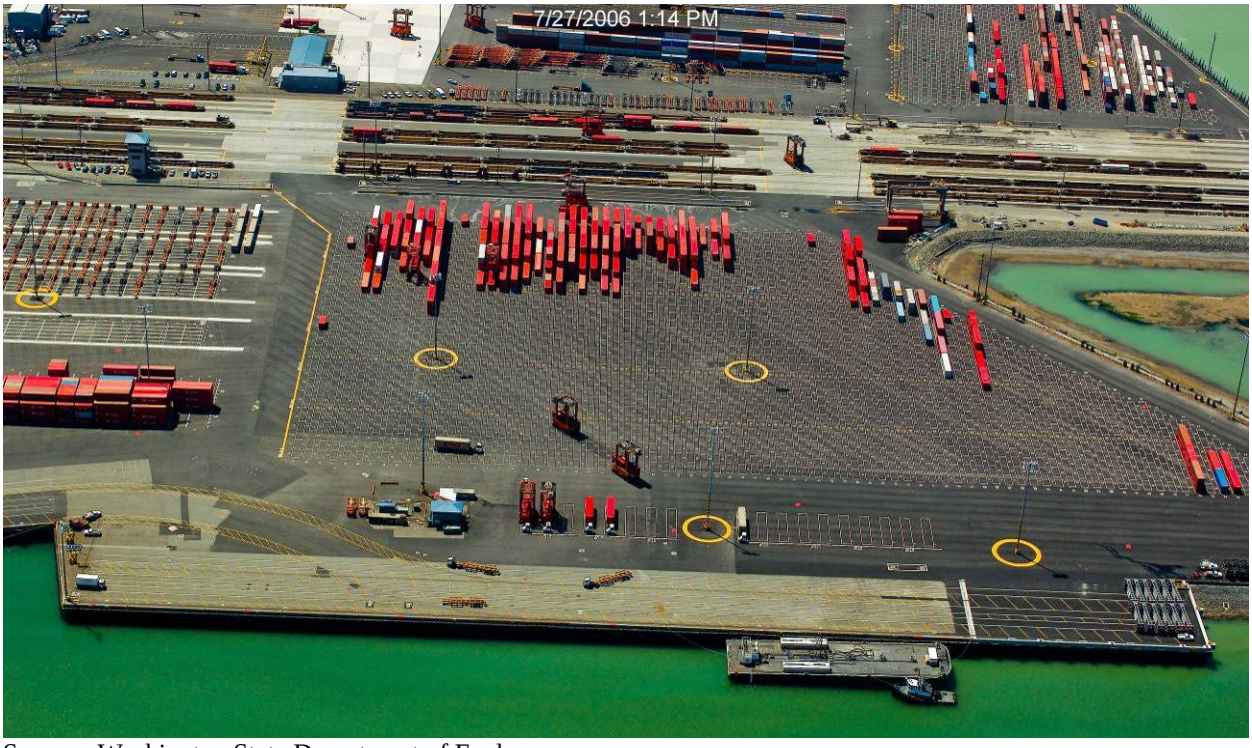
berths (i.e., 2,700 feet of berth space) and a water depth of minus 51 feet MLLW. There is also a dockside warehouse with 100,000 square foot of space. Rail Access consists of two on-dock rail spurs with boxcar loading capability with easy access to North Intermodal Yard and service by BNSF and Union Pacific railroads.

The Blair Waterway, which is approximately 2.5 miles long, has been dredged to minus 51 feet below MLLW to accommodate the post-Panamax container vessels. Other improvements on the Blair Waterway include:

- The removal of the narrow drawbridge that crossed the waterway at East 11th Street,
- Widening the waterway at the site of the bridge,
- Another widening is planned on the east side of the waterway enabling the Port to berth container ships on each side while another containership passes down the middle of the waterway., and
- Expansion of the turning basin at the head of the Blair, which has been enlarged to a 1,700-foot diameter.

The Husky Terminal (Terminal 4) is located at western mouth of the Blair Waterway, opened in June 2005. Husky has been a Port customer since 1983 but needed additional space after securing "K" Line as a customer in 1988. "K" Line provides weekly service at Husky Terminal and is a member of the CKYH Alliance (COSCO, "K" Line, Yang Ming and Hanjin). The terminal consists of 93 acres (37.6 hectares) and two berths totaling 2,700 feet at a water depth of minus 51 feet MLLW. Rail service is provided at the adjacent North Intermodal Yard (NIM), served by BNSF and UP railroads.

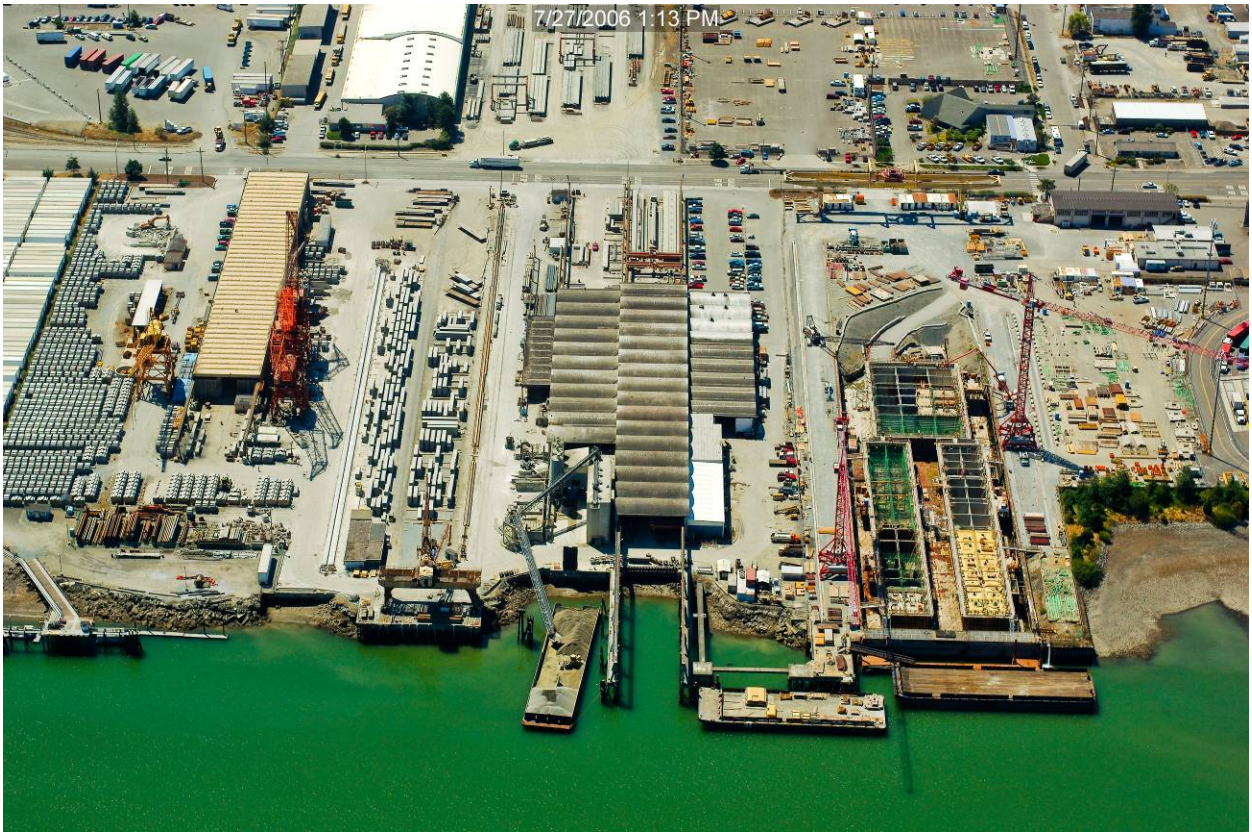
Figure 57 - Husky Terminal



Source: Washington State Department of Ecology

Concrete Technology Corporation, a privately owned facility, is located adjacent to Husky Terminal on the west side of the Blair Waterway. Concrete Technology's facility is a 30-acre plant including more than 120,000 square feet of enclosed production facilities; a state-of-the-art batch plant; welding, rebar, and carpentry fabrication shops; bridge, gantry, and mobile cranes; and shipping by truck, rail, and barge. Concrete Tech produces prestressed elements for construction, including bridges, buildings, piers, tanks, floats and other structures throughout the Pacific Northwest and Alaska have been built with Concrete Tech products[42].

Figure 58 - Concrete Technology Corporation



Source: Washington State Department of Ecology

Concrete Tech has several waterfront facilities, including a main bay slip and barge docks. These facilities have nearly 400 feet of mooring space with water depths up to 40 feet.

There is also a graving dock that supports construction of long members such as floating bridge spans. In addition, there is a pier with a whirley crane that can accommodate loads up to 22.5 tons.

[42] Source: Concrete Technology Corporation

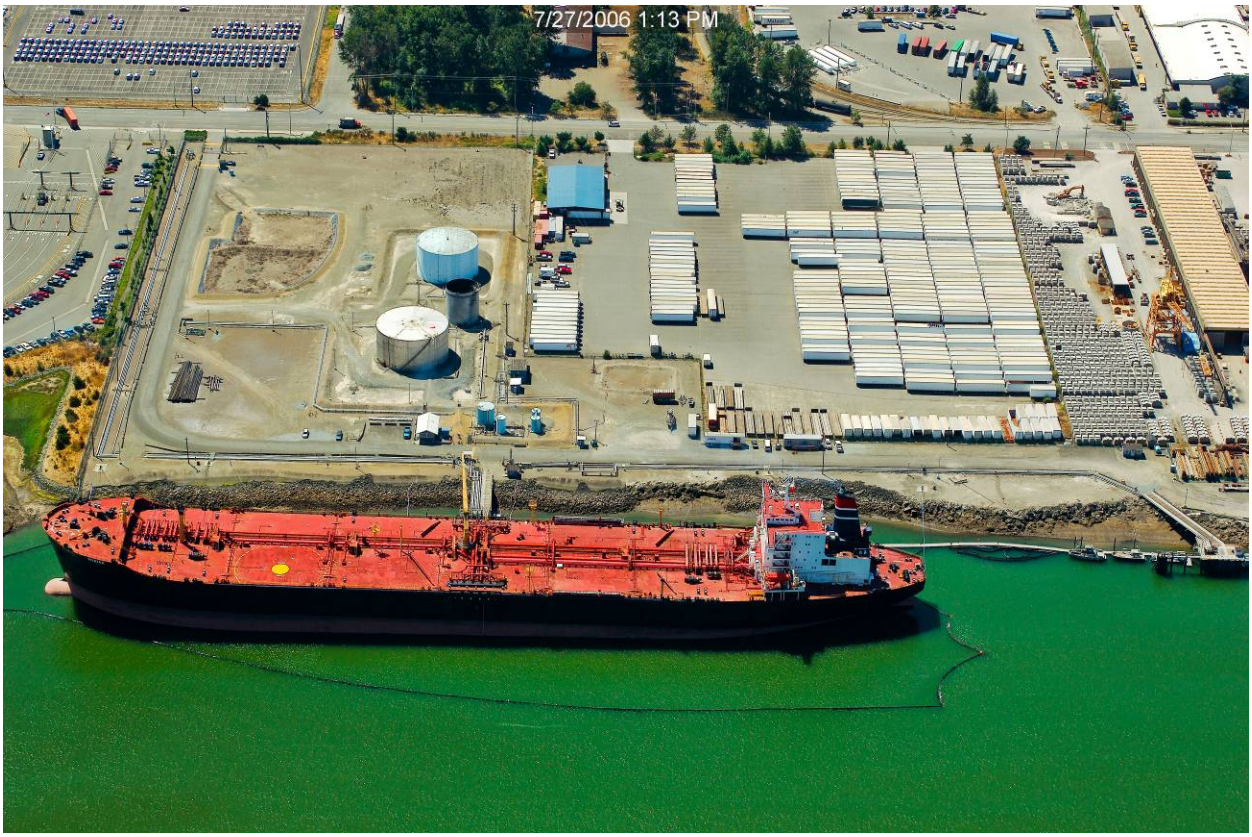
US Oil & Refining Company (USOR) operates an oil terminal and refinery on the Blair Waterway, next to Concrete Tech.

USOR produces motor, aviation and marine fuels and asphalt for the Puget Sound market. The USOR terminal has refining capacity in excess of 35,000 barrels per day and storage capacity exceeding two million barrels (located across Port of Tacoma Road).

The main source of crude oil has historically been from tankers delivering oil from Alaska's North Slope; however, crude oils from international sources are also processed. The refinery separates crude oil into its various component parts. At the present time, there are about 165 employees.

There are two docks. Dock #1 handles ships and barges, while Dock #2 handles only barges. Dock #1 has mooring and fendering capacity for 125,000 DWT vessels. However restrictions to the draft, tankage and offloading rate combine at present to limit vessels larger than 70,000 DWT to less than full cargo[43].

Figure 59 – US Oil & Refining Company



Source: Washington State Department of Ecology

[43] Source: US Oil & Refining website

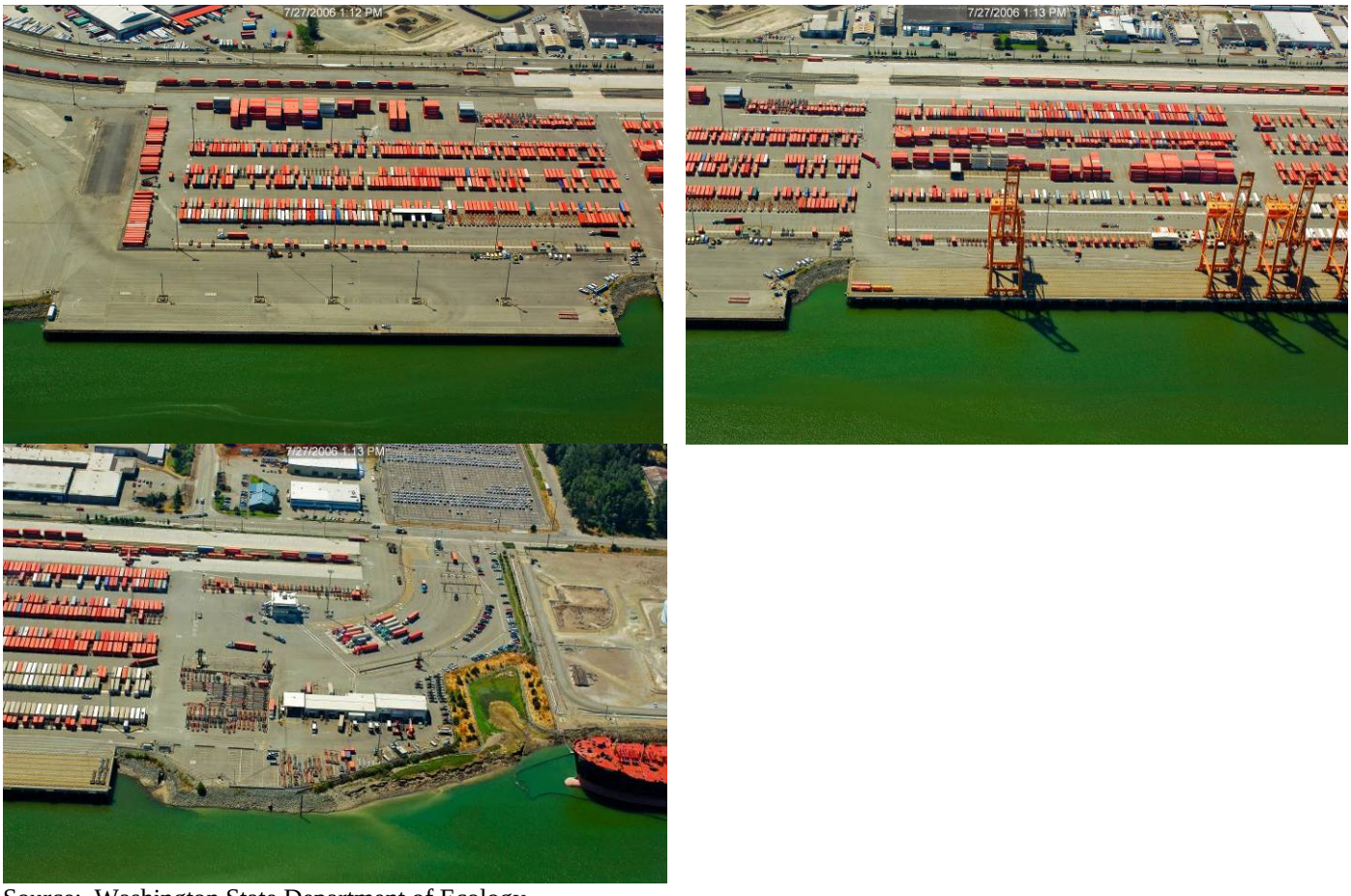
Washington United Terminals (WUT), which opened in 1999, is an independently-operated terminal services company that is wholly-owned by Hyundai Merchant Marine America. WUT has two vessel berths with four post-Panamax 70-ton ship-to-shore container cranes. WUT is a full-service marine terminal company with integrated on dock rail. The terminal serves Hyundai, MOL and APL.

The rail capacity is equivalent to two fully-laden double-stack trains. All terminal stevedoring and terminal services are under the management of one dedicated management team of WUT employees. Hyundai Merchant Marine, MOL and APL are members of The New World Alliance (TNWA).

The WUT terminal consists of 102 acres, including an on-dock intermodal railyard, Hyundai Intermodal Yard (HIM), which is 35 acres. The terminal has two berths totaling 2,000 feet at minus 51 feet at MLLW.

The Port and WUT are currently in the permitting process to extend the berth from its existing length of 2,000 feet to 2,600 feet. The wharf extension will be completed by removing the north 600 feet of the Blair Dock and building onto the south end of the WUT wharf. This improvement will allow WUT to accommodate newer larger container ships.

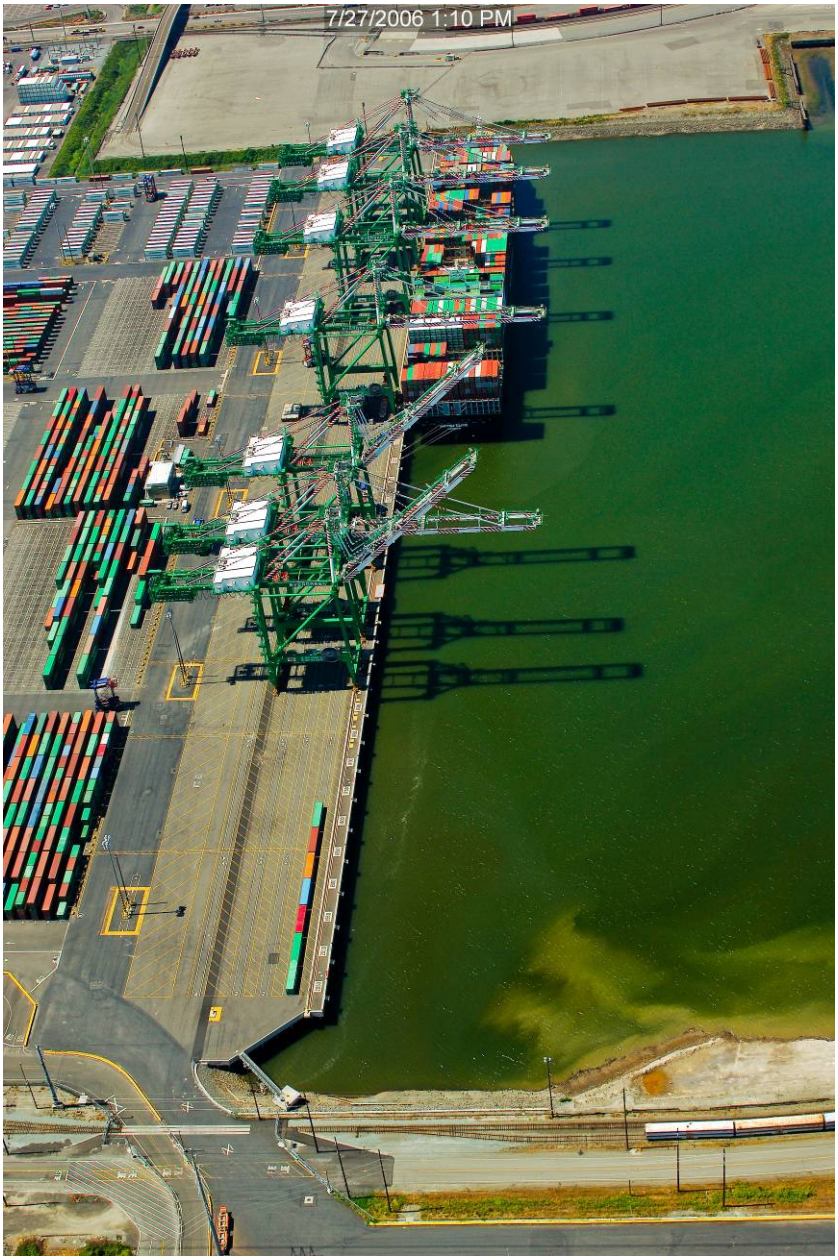
Figure 60 – Washington United Terminal



Source: Washington State Department of Ecology

Pierce County Terminal (PCT) opened in January 2005. The terminal is operated by Ports America Group for Evergreen Marine Corporation. The terminal consists of 141 acres, including PCT Intermodal Yard (PIM), which is 30 acres. PIM is served by the BNSF. The terminal has two berths totaling 2,260 feet with a water depth of minus 51 feet (MLLW).

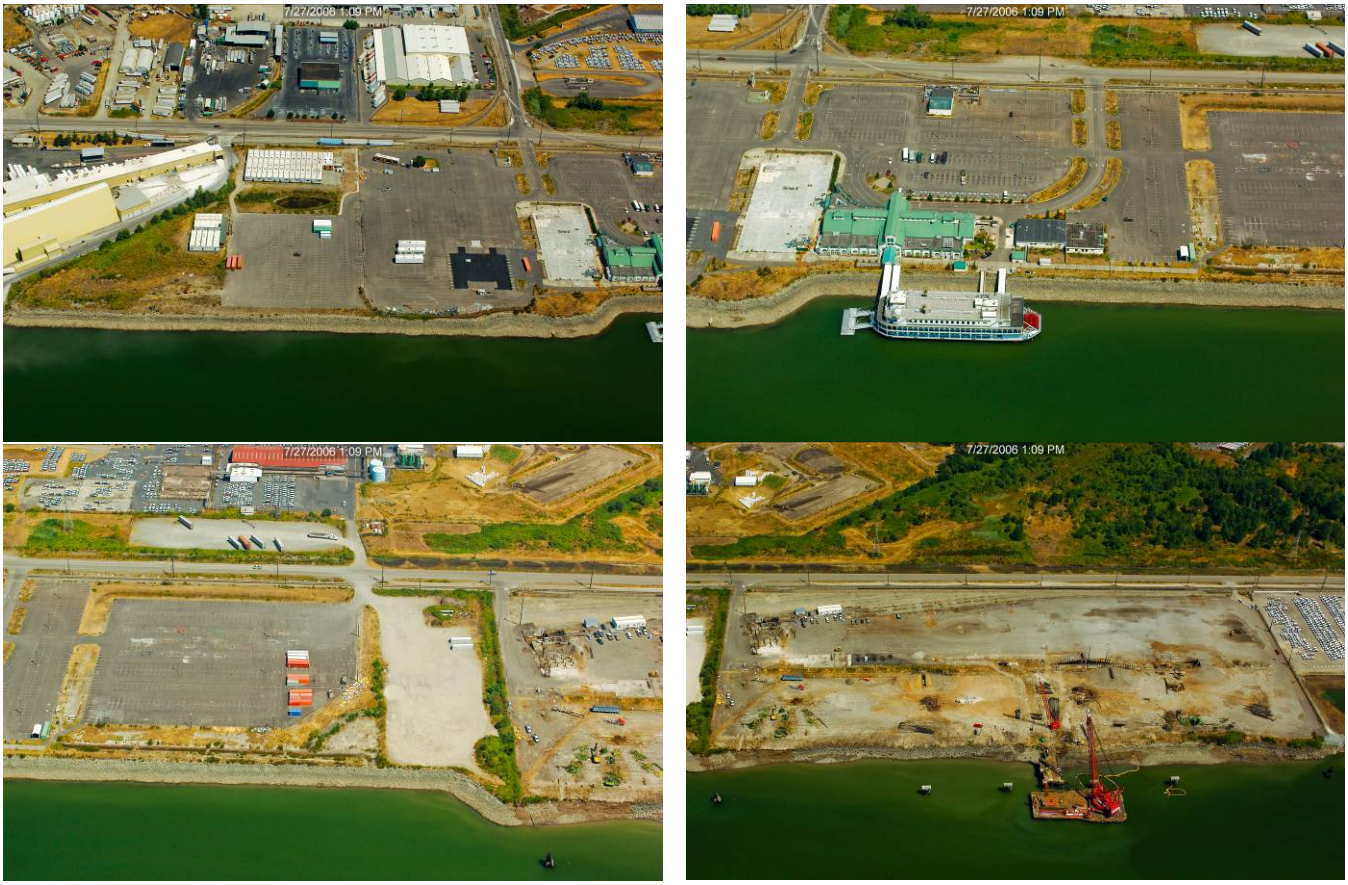
Figure 61 - Pierce County Terminal



Source: Washington State Department of Ecology

The Puyallup Tribe and its partner SSA have agreed to build a 180-acre, two-berth container terminal on Tribal property, which will cost approximately $300 million. The Port of Tacoma, the Puyallup Tribe of Indians and SSA Marine have agreed to cooperate on development of the east Blair Waterway on Tacoma's Tideflats for shipping terminals. This terminal is scheduled to be completed around 2014 or 2015.

Figure 62 – Puyallup Property (Proposed Container Terminal)



Source: Washington State Department of Ecology

The agreements included[44]:

- Purchase and Sale Agreement with the Port and Puyallup Tribe of Indians: The Port and Tribe agree to exchange land to improve the overall layout of the current footprint of future Tribe/SSA terminal and future Port terminal developments. The Port will transfer about 19 acres (7.7 hectares) to the Tribe, and the Tribe will transfer about 12.5 acres (5.1 hectares) to the Port.
- Agreement Regarding Widening of the Blair Waterway (Blair Cutback Agreement): All parties agree to cooperate in the cutback of the Blair Waterway along 3,300 feet (1,006 meters) of Tribal land to a minimum of 850 feet (259

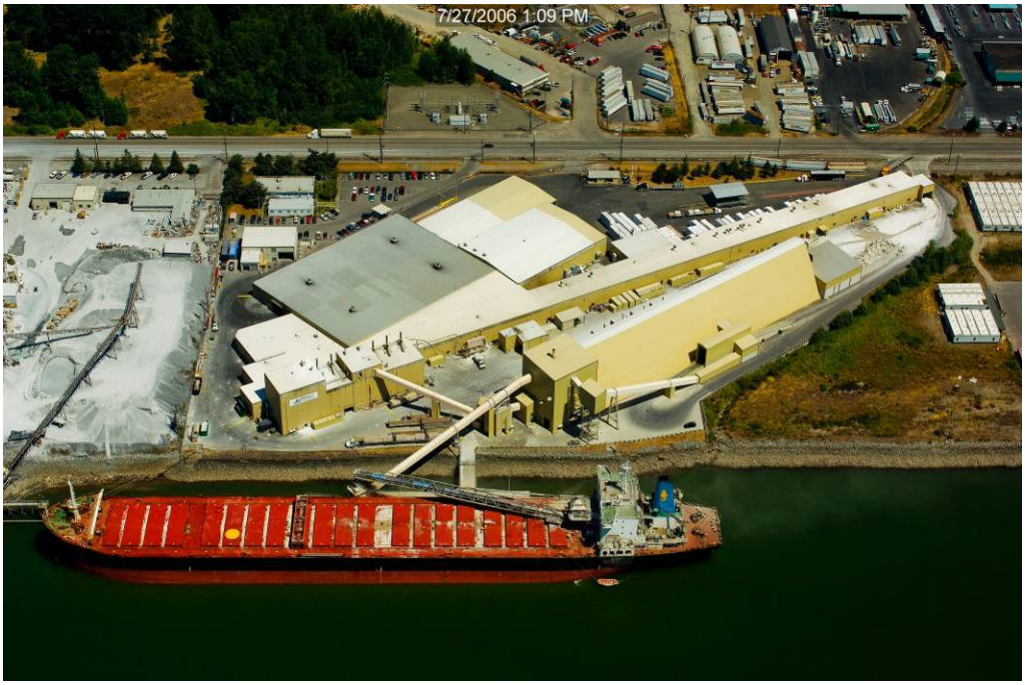
[44] Source: Tacoma News Tribune

meters) fender-to-fender between terminals. Channel depth will be maintained at -51 feet (-15.5 meters) MLLW (mean lower low water). SSA Containers will undertake and manage the project, and the Port will reimburse a portion of the dredge and disposal cost.

- Lease Agreement between the Port and SSA Containers Inc.: SSA will lease from the Port 1,200-feet (366 meters) of berth plus backup area, totaling approximately 23 acres (9.3 hectares) currently under construction on the east side of the Blair Waterway.
- Cooperation Agreement between the Port, Tribe, Marine View Ventures and SSA Containers Inc.: The Port and SSA Containers will cooperate on the following: terminal developments, intermodal rail facilities, road infrastructure and future cooperation, as required

The GP Gypsum plant is located adjacent to the Puyallup Tribe's property on land leased from the Port. GP Gypsum manufactures gypsum wallboard products at this plant, which has the capacity to produce 400 million square feet per year[45]. The GP property comprises approximately 15.5 acres, and includes a deepwater dock located approximately 0.4 mile above East 11th Street. This dock has berthing space of 700 with a depth alongside of 35 feet MLLW. One steel frame, 42,500-square-foot, covered storage building in rear has capacity for approximately 32,000 tons of gypsum rock[46].

Figure 63 – GP Gypsum Plant



Source: Washington State Department of Ecology

[45] Source: GP Gypsum

[46] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

The Graymont Lime Tacoma plant, which is located adjacent to the GP Gypsum plant on the Blair Waterway, produces precipitated calcium carbonate (PCC) and a full range of quicklime and hydrated lime products in both bags and bulk. Limestone is barged to the plant from Texada Island in Canada. The plant has a capacity of 280 tons per day and is capable of burning pulverized coal and natural gas for the manufacturing process. Bagging facilities, bin-bag loading and bulk storage are available for both quicklime and hydrated lime products. These products are loaded into trucks, railcars or sea containers at the plant. Finished lime and PCC products can be shipped by truck, rail or barge[47].

The Graymont marine terminal has a total berthing space of 335 feet and a depth alongside of 32 feet. It is used for waterborne receipt of limestone; occasional shipment of calcium carbonate slurry. The facility has an open storage area in rear with a capacity for approximately 15,000 tons of limestone; and an additional 1,900 tons of lime can be stored in 6 silos at plant in rear. There is one 6-inch pipeline for slurry extends to wharf from 7 steel storage tanks in rear, with a total capacity 1,385,000 gallons[48].

Figure 64 – Graymont Lime Tacoma Plant

Source: Graymont Lime

[47] Source: Graymont Lime

[48] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

Jesse Engineering, which builds a variety of fabricated metal products from heavy steel bridge girders to sophisticated radar antennas, has two plants in the Tacoma Tideflats, one in the Blair Waterway and one in the Hylebos Waterway. The Blair terminal, which is shown in this figure adjacent to the Graymont Lime, is used for shipment of fabricated steel products; handling construction materials, supplies, and equipment. The berth face is 290 feet long with a depth alongside of 20 feet.

This facility will be dislocated when the Port of Tacoma builds the YTTI Terminal, described below. Jesse Engineering will relocate its staff to its other Tacoma facility.

Figure 65 – Jesse Engineering

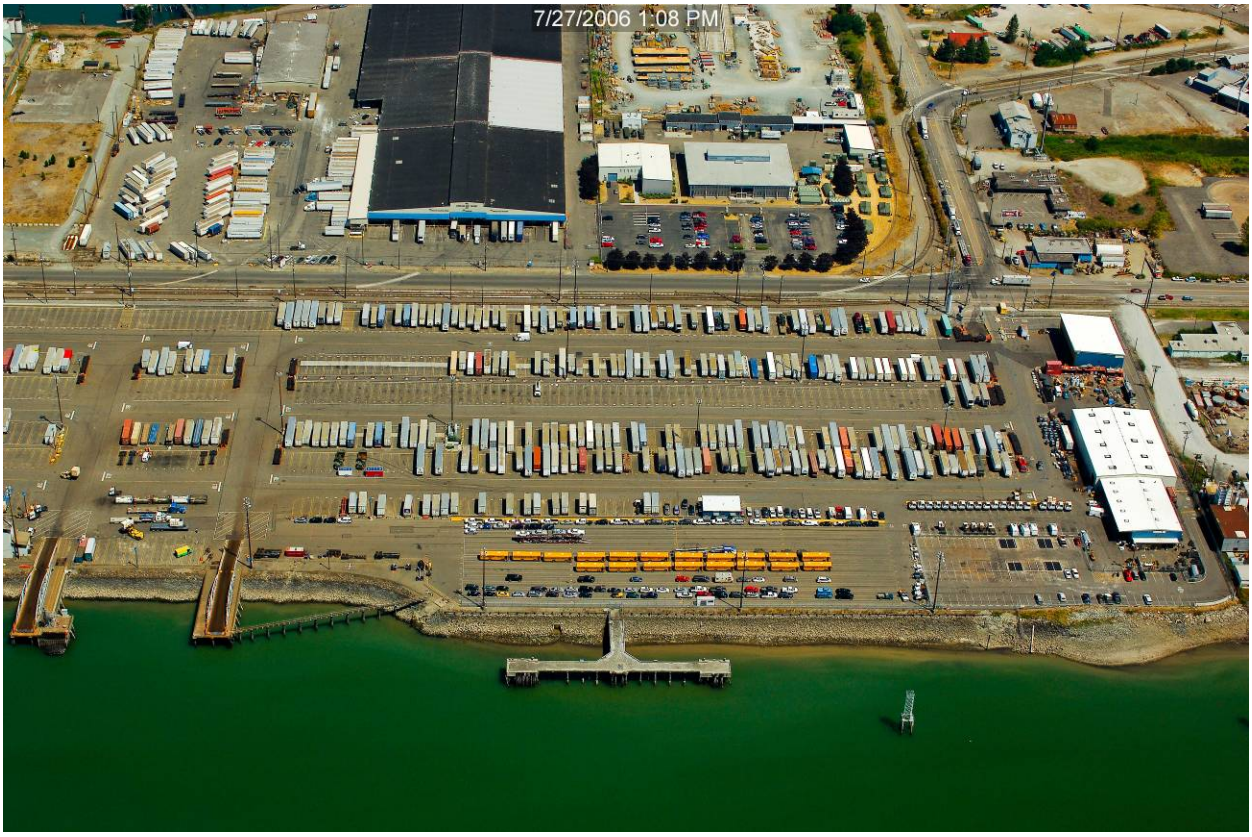
Source: Washington State Department of Ecology

The Totem Ocean Trailer Express (TOTE) Terminal is located near the mouth of the Blair Waterway and adjacent to Jesse Engineering. This RO/RO facility, which is owned by the Port of Tacoma and leased to TOTE, has a connection to ramps on each vessel to move trailers and vehicles between the terminal and ship. TOTE has served Alaska since 1975, and came to Tacoma in 1976. The Port invested $12 million in the facility in 2003 to accommodate TOTE's two new Orca-class vessels. The existing facility is approximately 47 acres.

The berth includes two dolphin piers, one of which is an operating berth and the other is a lay-up berth. The berths have a water depth of minus 50 feet (MLLW)

This facility will also be dislocated when the YTTI facility is constructed. The Port Commission has approved a new lease with Totem Ocean Trailer Express, Inc. (TOTE) that calls for a redeveloped Blair Waterway terminal for TOTE's Alaska cargo business. Under the lease, which runs through 2034, the port will redevelop the TOTE terminal that will be up to 72 acres in size, allowing TOTE to meet the growing Alaska market.

Figure 66 – TOTE Terminal



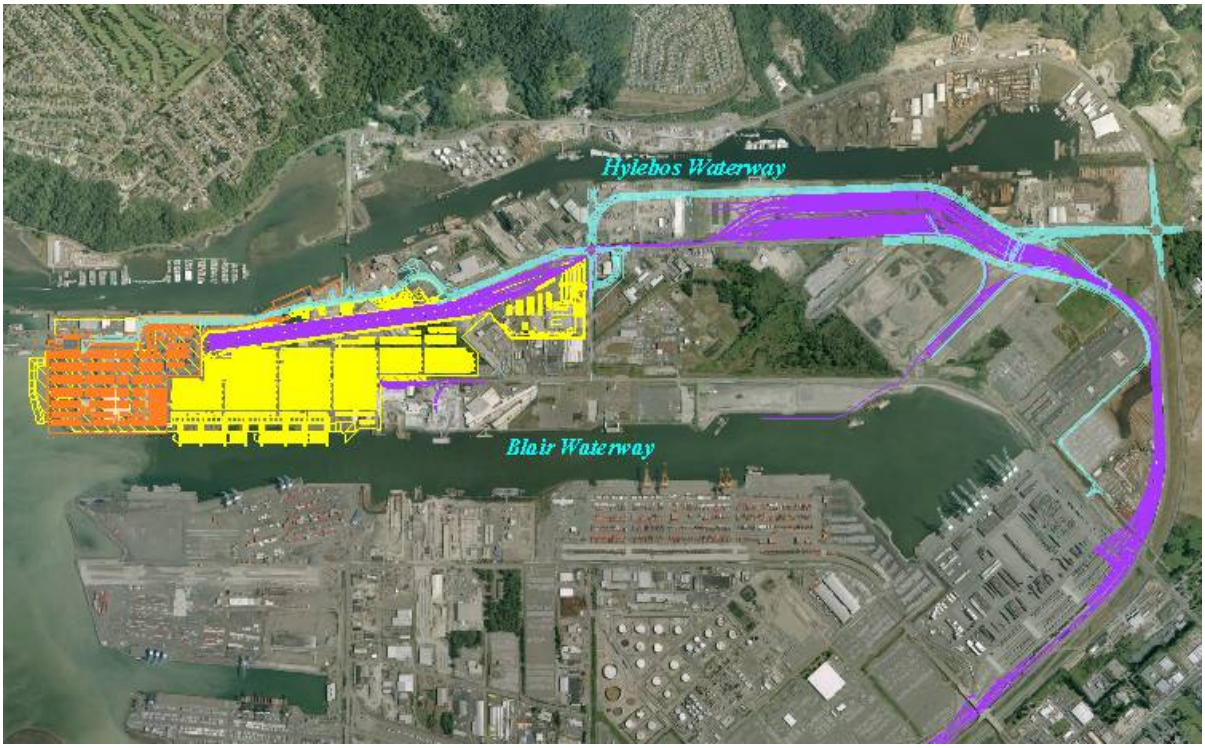
Source: Washington State Department of Ecology

As shown in Figure 63, the new TOTE Terminal will be located at the end of the Blair Hylebos peninsula (shown in orange in the figure).

The Yusen Terminal Tacoma Inc. (YTTI) Terminal will consist of a 168-acre facility for YTTI, a wholly-owned subsidiary of NYK Line. This facility will have an expected capacity of 1.4 million TEUs (shown in yellow in the figure). The terminal will have two berths, and will serve vessels with average lengths of 1,050 to 1,150 feet. As in other Port of Tacoma terminals, intermodal traffic is expected to dominate with 70% or more of imports moving by intermodal rail. An extensive array of road and rail infrastructure will serve the terminal (shown in purple in the figure). This includes development of a 24-acre on dock rail yard. The YTTI terminal is expected to open in 2012.

Phase 2 of the YTTI development, which could triggered before 2020, would add upland acres and an extension of the berth. If triggered, the phase 2 berth expansion would displace Graymont Lime and GP Gypsum.

Figure 67 – Proposed YTTI Terminal & New TOTE Terminal

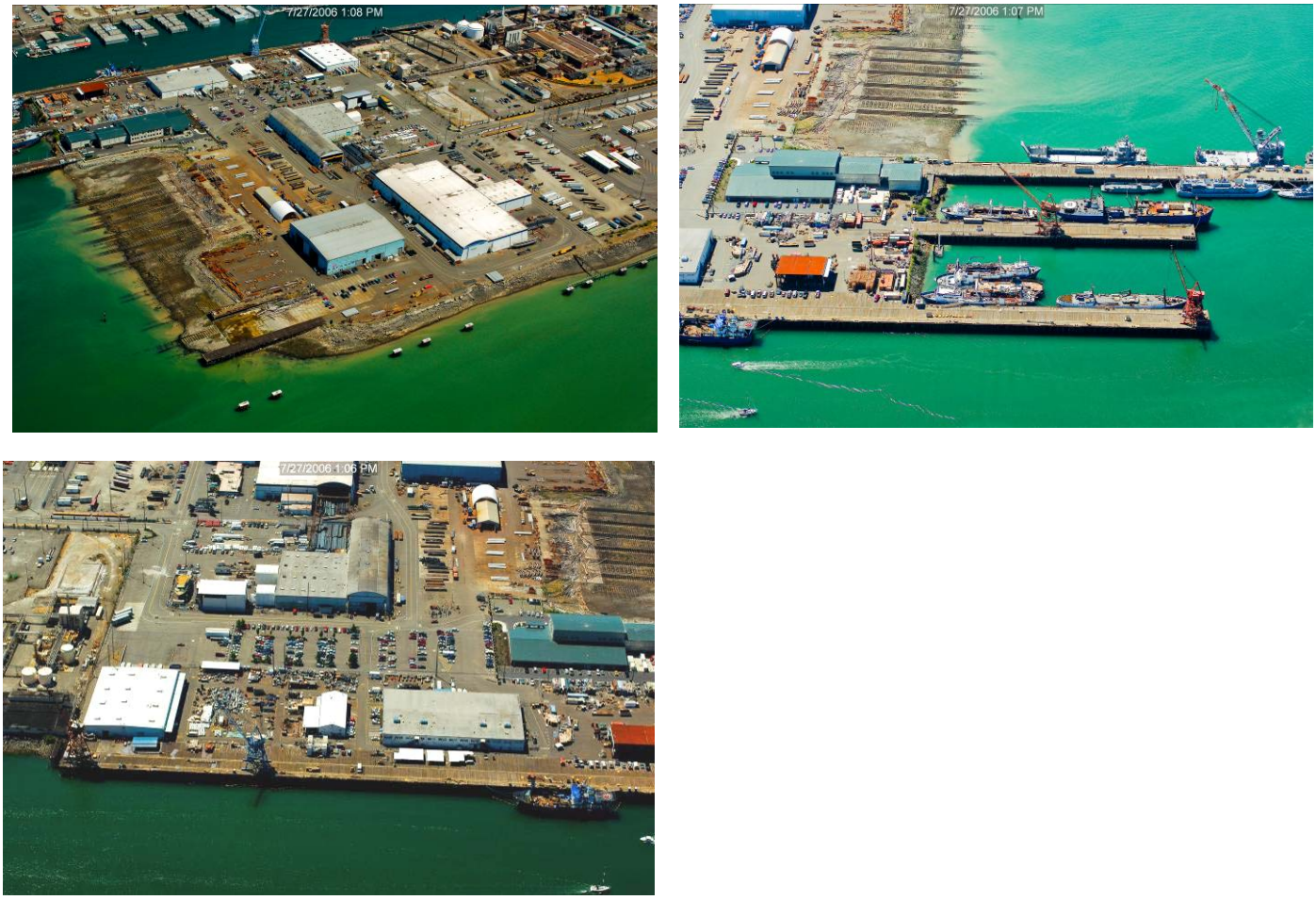


Source: Washington State Department of Ecology

The Earley Business Center (EBC) is a Port-owned, 50-acre marine-oriented industrial complex at the north end of Alexander Avenue on Commencement Bay, named in honor of former Port Tacoma Commissioner Robert G. Earley. EBC facilities include piers and moorage designed for vessel lay-up, outfitting, maintenance and repair, as well as rail-served manufacturing buildings and yard areas with overhead cranes.

The new TOTE Terminal will displace several existing users in the Earley Business Center, including Harris Rebar, North Coast Yachts, Aleutian Yachts, and Metal Craft Marine, among others. The Port is working closely with impacted firms to find new sites. As mentioned above, the Port is working with North Coast Yachts and Aleutian Yachts to evaluate the Wattles property on the Thea Foss Waterway.

Figure 68 – Port of Tacoma Earley Business Center



Source: Washington State Department of Ecology

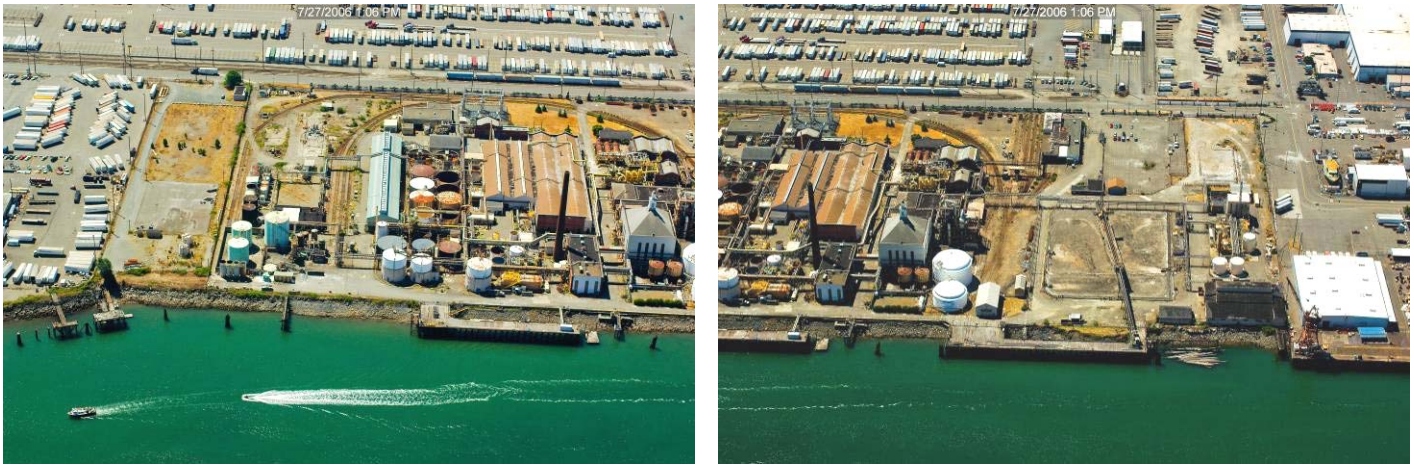
Some users will not be affected. For example, the Port of Tacoma is home to approximately 40 of Trident Seafoods' fishing and processing vessels. The Seattle-based company harvests, processes and distributes seafood from the waters of Alaska, Oregon and Washington. At the 33-acre Tacoma facility, Trident maintains and repairs boats and equipment, and outfits the vessels for fishing voyages. The US Army also moors vessels at the outer end of the peninsula. These uses will not be dislocated with terminal development. Berth space on the Hylebos Waterway will also be available for moorage of vessels.

The Hylebos Waterway is approximately three miles long. Its authorized depth is minus 30 feet below MLLW but the operating depth is between 20 and 30 feet. The bottom width of the channel ranges from 200 to 300 feet. Most of the land on Blair/Hylebos peninsula is now owned by the Port of Tacoma. Most of the land on the other side of the Hylebos Waterway (adjacent to Marine View Drive) is privately owned.

Adjacent to the Earley Business Center on the Hylebos Waterway is a vacant property, which once housed a chemical plant (Pioneer Occidental Corporation). On December 22, 2005, Pioneer Americas LLC, the U.S. operating subsidiary of Pioneer Companies, Inc., entered into an Asset Purchase and Sale Agreement with Mariana Properties, Inc., an affiliate of Occidental Chemical Corporation ("OCC"), providing for the sale of a site in Tacoma, Washington. This site was previously used by Pioneer Americas as a terminal and chlor-alkali manufacturing facility. In March 2002, Pioneer had terminated the site's use as a chlor-alkali manufacturing facility because of increased power costs, combined with declining regional demand for chlorine and caustic soda. In accordance with the terms of the Agreement, the sale of the site was closed on December 29, 2005[49].

This area will also house a portion of the new TOTE Terminal.

Figure 69 – Pioneer Chemical Plant Site



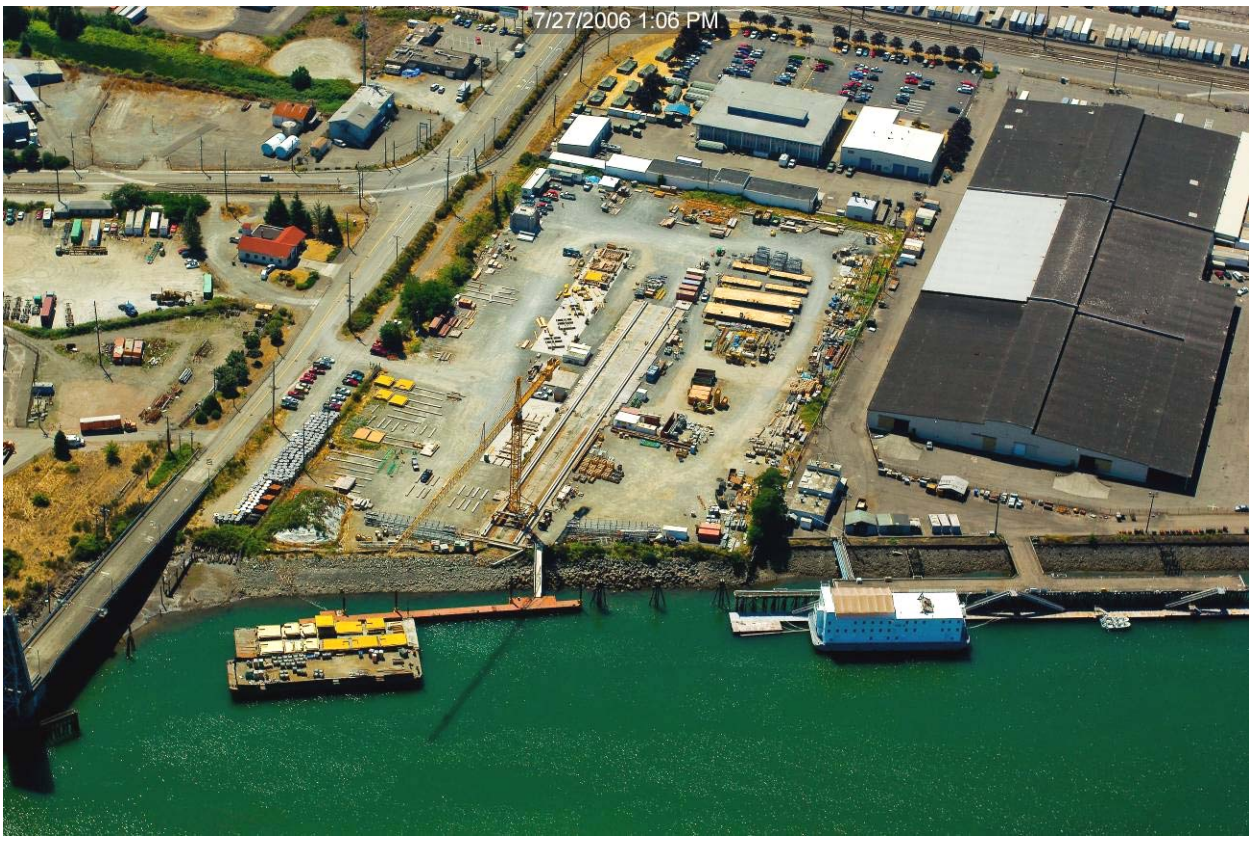
Source: Washington State Department of Ecology

[49] Source: SEC Information for Pioneer Companies Inc

In 2005, Navy-Marine Corps Reserve Center Tacoma was designated for closure under the authority of the Defense Base Closure and Realignment Act of 1990, Public Law 101–510, as amended (the Act). Pursuant to this designation, on January 23, 2006, land and facilities at this installation were declared excess to the Department of Navy (Navy) and available to other Department of Defense components and other Federal agencies. This included improved and unimproved land, buildings, garage and shops and berthing pier facilities (390 foot wharf face with 30 feet of water depth MLLW) that provide access to the Hylebos Waterway, among other facilities. This area located on the right side of the figure, will be available for other users.

This property is now owned by the Port of Tacoma. The large warehouse in the figure is used by several freight related companies. This property will be included in the YTTI terminal project.

Figure 70 – US Navy Reserve Pier, Atlas Warehouse &



Source: Washington State Department of Ecology

Steam Plant No. 2 (SP2) was a coal and oil, then refuse-derived fuel (RDF) and coal-burning electrical generating plant. It was originally constructed in the 1930s, and was located on the south side of the Hylebos Waterway, along the east side of the East 11th Street Bridge. The plant was operated by Tacoma Power through 1999, at which point it was leased to the City of Tacoma, Department of Public Works. Public Works' efforts to repower and repermit the plant were terminated in 2005 and the plant was turned back to Tacoma Power in February of 2006[50].

It was decided that SP2 was no longer necessary. Plant operations have been terminated and all plant facilities and equipment were surplused. After conducting an evaluation of the facility, staff concluded it was in the best interest to the Utility and its customers to sell SP2 properties by a negotiated sale. The facility has a total berthing space of 250 feet and a depth alongside of 30 feet MLLW. The power plant at rear was fueled by a blend of coal, hogged fuel, and RDF (refuse derived fuel). Open storage area located at rear has capacity for approximately 12,000 tons of coal[51].

The Port now owns the Steam Plant property, which will also be utilized in the YTTI terminal development

Figure 71 – Tacoma Steam Plant Site

Source: Washington State Department of Ecology

[50] Source: City of Tacoma minutes

[51] Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

American Construction Co, Inc. is located on the Hylebos Waterway adjacent to Steam Plant 2. American Construction relocated to Tacoma from Everett. The company provides the following marine construction services:

- Construction
- Dredging
- Estimates
- Pile Driving

Figure 72 – American Construction

Source: Washington State Department of Ecology

Joseph Simon & Sons, Inc owns a vacant lot on the Hylebos adjacent to American Construction. The Joseph Simon & Sons property is a vacant 5.8 acre lot along the southern shore of the Hylebos Waterway at 1515 Taylor Way. This parcel was purchased by Sound Refining. It is linked by a pipeline to the Sound Refining terminal, which allows product to transfer from the marine terminal under the Hylebos Waterway to be loaded on rail[52].

Nordlund Boat is also located at this site as well as another site in the Hylebos (see below).

The unused Cenex Grain elevator is located next to Nordlund Boat. This facility was originally constructed by the Washington Cooperative Farmers Association's as a feed mill in the in the late 1940's. The facility was designed for moving product to and from truck and rail, and does not have a dock. This parcel could be redeveloped.

A number of firms (All Purpose Truck Repair, Tripac et al) are located next to the Joseph Simon & Sons property, on the site of the former feed mill.

Buffelen Woodworking is located next to this All Purpose Truck Repair. Buffelen manufactures a variety of wood and metal products, including: stile & rail wooden doors aluminum rail, metal rail, steel rail, rails, grating, billets, ingots, honeycomb core, structural products, braid, structural materials and basic shapes, angles, bar, beams, channels, coil, foil,

[52] Source: Thea Foss/ Wheeler-Osgood Waterway Transloading Facility Siting Evaluation and Design/Performance Standard Analysis October 17, 2002

profiles, rod, strip, piling, post, shafting, plate, sheet, drain hole screen, gear motors, screens and feeding equipment. Buffelen does not use waterfront access.

Adjacent to Buffelen is a 3.1 acre site owned by the Port of Tacoma and currently leased to several tenants. This building will be demolished as a part of the YTTI terminal development

Also adjacent to Buffelen is Carlile Transportation Systems Inc., which operates a transportation facility. This facility is situated on 16.2 acres on the Hylebos Waterway, and has a 50,000-square-foot cross-dock warehouse and 80 dock doors. It is a U.S. Customs bonded facility and has a rail spur for loading/unloading rail boxcars or flat cars.

The realigned road serving the YTTI Terminal will bisect the property near the water's edge. This will limit the future use of this property as a terminal but could allow a dock for idle vessel moorage. It should be noted that there is no dock at the present time.

Figure 73 – Carlile Transportation

Source: Washington State Department of Ecology

The Arkema (formerly Atofina Chemical) Log Yard Site is located at 3009 Taylor Way, adjacent to Carlile Transportation. It sits between Taylor Way and the Hylebos Waterway. This was a contaminated site that is now owned by the Port of Tacoma. The site was used as a log sort yard until the mid 1980's, and it was contaminated with wood waste and heavy metals. Slag from the former Asarco smelter in North Tacoma was used to build the road bed for the log sort yard, and this slag leached heavy metals such as arsenic, copper, lead and zinc into the soil.

Former owners included Dunlap Towing Co., Echo Lumber Co., and Arkema Chemical Inc. In 2007, the site was sold to the Port of Tacoma with two other properties, and now the Port is now the main Potentially Liable Person (PLP) responsible for cleanup.

In 1992, Arkema's parent company, Pennwalt Chemicals, created a landfill for the contaminated soils, wood waste, and slag, under a Consent Decree with the Department of Ecology. This landfill was covered over and lined to keep contaminants from escaping. However the landfill is very close to the waters of Commencement Bay.

Port of Tacoma bought the property in May 2007. This site will be used by rail infrastructure supporting the proposed YTTI terminal development. Idle moorage could also occur at this property.

Figure 74 – Atofina Chemical Site

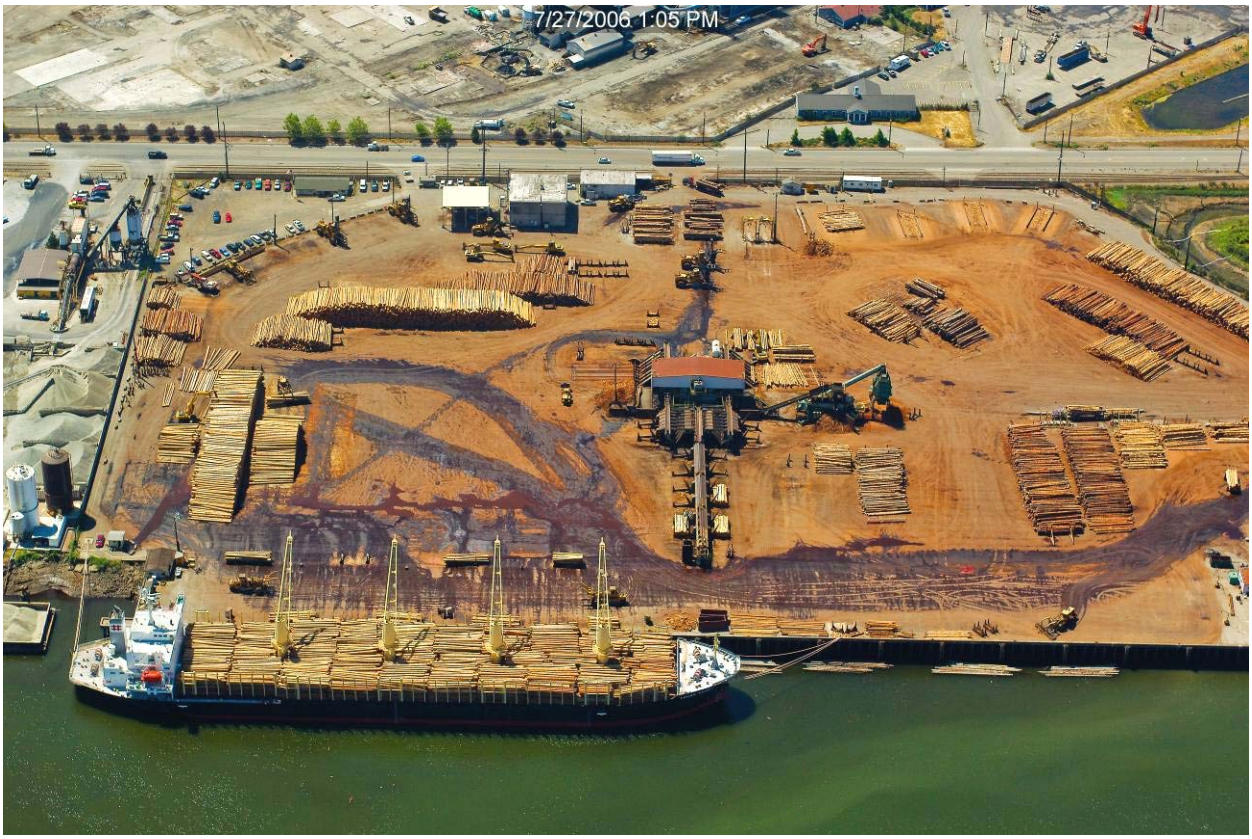
Source: Washington State Department of Ecology

The next facility along the Hylebos waterway is the former Weyerhaeuser log export dock. Weyerhaeuser operated the Tacoma Export Facility (TEF) on property located at 3401 Taylor Way in Tacoma, Washington from 1971 until recently. The company signed a five-year lease with the Port of Olympia in 2005. At that time, Weyerhaeuser expected to begin export operations after relocating from Tacoma by summer 2006. Due to lawsuits, Weyerhaeuser is just beginning to export logs via Olympia.

The Port of Tacoma purchased this property in December 2007, and it will also be used by rail infrastructure supporting the proposed YTTI terminal development.

However, the existing dock on the property may still be used to moor vessels. Its dimensions are total berthing space of 1,100 feet with depth alongside of 39 feet. There are approximately 9 acres of land next to the dock that could be used by water-dependent firms.

Figure 75 – Weyerhaeuser Log Export Dock



Source: Washington State Department of Ecology

Adjacent to the former Weyerhaeuser site Glacier Northwest operates the Tacoma Ready Mix Plant on privately owned property at 3601 Taylor Way. Products include: exposed aggregate mixes, colored concrete, controlled density fill (CDF), high strength concrete, fiber concrete, shrinkage reduction concrete mixes, waterproof concrete, and pervious concrete.

Figure 76 – Glacier Northwest

Source: Washington State Department of Ecology

The Glacier Northwest operation is water-dependent. The facility has a dock with total berthing space of 200 feet and depth alongside of 12 feet. According to the US Army Corps of Engineers, there is a 13,500-ton-capacity (7 acre) open storage area and concrete batch plant are located in rear. Glacier sources the aggregates from its quarries in Dupont and Maury Island, and transports these products by barge.

Pony Lumber Company purchased the Louisiana Pacific Corporation lumber mill next to Glacier Northwest from in 2002. The mill continued to operate until 2006 when it was closed permanently due to market conditions. This 30 acre site at the southeast corner of the Hylebos Waterway is now owned by the Port of Tacoma. This site has a log lift consisting of an inclined railway set in the bank. This property could serve water-dependent firms if a dock were built.

Calbag Metals, located at 1602 Marine View Drive buys, recycles and trades recycled nonferrous metals. Calbag leases a portion of this 13.7 acre site from the Port of Tacoma, and operates from a warehouse in the site that is owned by the Port of Tacoma. Calbag does not use water access. In addition to Calbag Metals, the Port also uses a portion of this site for parking imported automobiles.

Along the east side of the Hylebos Waterway most parcels are either privately owned or Tribe-owned.

The first of these private parcels is adjacent to Calbag Metals, and houses Nordlund Yacht (dba Nordlund Boat Company. Inc.) at 1626 Marine View Drive. Nordlund manufactures and repairs fiberglass boats and related systems. Nordlund builds custom yachts from 83 to 114 feet in length. Nordlund is a water-dependent industry, and the parcel includes a dock for the firm's Marine Travelift.

ABB Turbochargers, located next to Nordlund at 1640B Marine View Drive, is an international firm that engineers and develops power products and systems, among other products. It does not use water access.

Streich Brothers, located at 1650 Marine View Drive specializes in structural steel, company breakdowns, heavy equipment repair and industrial maintenance. They are one of the largest industrial maintenance facilities in the Tacoma area, with fifty employees. Their facility includes a 35,450 square foot machine shop and fabrication facility, situated on approximately four acres on the Hylebos waterways. The site includes 275 feet of waterfront with a marine barge loading pier.

Figure 77 – Calbag Metals, Nordlund Yachts, ABB Turbocharger, Streich Brothers

Source: Washington State Department of Ecology

Adjacent to Streich Brothers, at the northeast corner of the Hylebos, is a 5.9 acre vacant site that is owned by the Puyallup Tribe.

The 2.4 acre privately owned parcel to the west of the Puyallup parcel houses a marine repair facility operated by Hyland Marine. This facility is water-dependent, with several docks alongside and a marine rail for moving vessel into and out of the water.

Figure 78 – Hyland Marine, Puyallup Parcel, Streich Brothers, ABB Turbocharger, Nordlund Yachts

Source: Washington State Department of Ecology

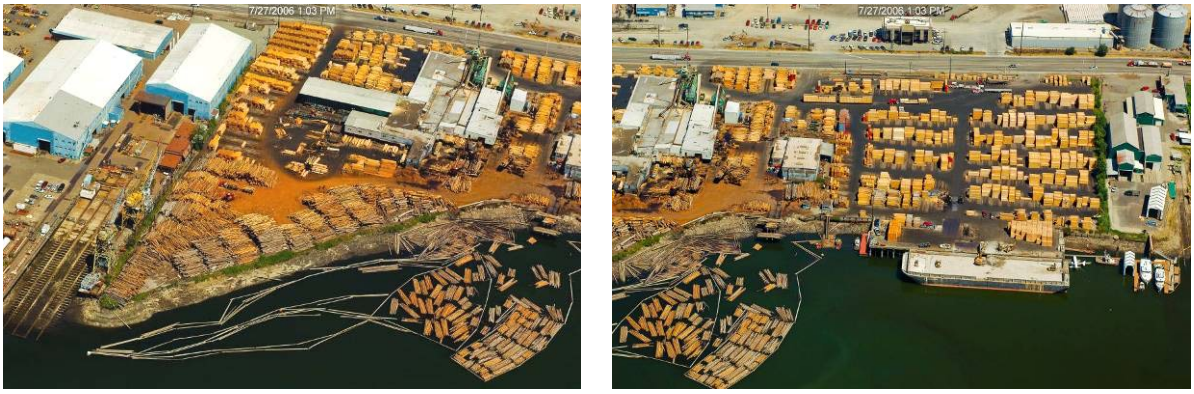
The next three parcels are owned by the Manke Timber Company. These parcels total nearly 15 acres. The company operates a lumber mill here that produces up to 160 million board feet per year of 2", 3", 4", and 6" thick lumber, as well as custom timbers up to 12" x 16". The facility is water-dependent, moving material by log raft and barge, as well as by truck and rail.

The Manke Lumber dock has a total berthing space of 320 feet with a depth alongside of minus 30 feet at MLLW.

The dock also provides access to tankers and barges serving the Pacific Northwest Terminal, which ships tallow from a terminal located adjacent to the Manke terminal. There are two 8-inch pipelines that extend to the wharf from 40 steel storage tanks at terminal in rear, total capacity 21,360 tons[53].

[53] Source: Source: US Army Corps of Engineers, Port Series No 35, Revised 2003

Figure 79 – Manke Lumber



Source: Washington State Department of Ecology

To the north of Manke is a 14-acre parcel owned by Jesse Investments. This parcel has two users on, including the second site of Jesse Engineering, mentioned previously, and SeaTac Marine Services. This parcel has a 630 foot dock with 30 feet of depth along side. There is also a marine rail system with two sets of tracks for handling large vessels.

Figure 80 – Jesse Engineering, SeaTac Marine Industries

Source: Washington State Department of Ecology

Schnitzer Steel operates one of the largest sites on the Hylebos; a 32-acre site that combines five parcels that houses the firm's metal recycling operation. Materials accepted include both ferrous and nonferrous metals. Special equipment at the site includes fixed and mobile shears, cranes, material handlers, loaders, as well as the firm's largest shredder, a d 7,000 horsepower mega shredder. This property includes several docks that total 950 feet in length, with depth alongside of 38 feet. The docks are used for moving scrap steel into and out of the facility, by both barge and ship. Material is also moved by truck and rail.

Figure 81 – Schnitzer Steel

Source: Washington State Department of Ecology

The next facility to the outside of Schnitzer Steel is the Hylebos Marina. This facility includes three tax parcels totaling 15.2 acres. This marina has 144 moorage slips, including both open slips and boathouses. Hyatt's Harbor service is also located on the property. The site has several haul-out options, including two Travelift docks and both 35-ton and 75-ton Travelifts. Additional amenities include a marine supply store, boatyard, repairs and dry storage.

Modutech Marine Inc. is located next to the Hylebos Marina. Modutech provides boat repair services and manufactures custom built boats. Modutech Marine offers a complete line of custom built boats, for charter, commercial fishing, sport fishing, pleasure or work boats. Modutech builds fiberglass vessels up to 100 feet, and also works in steel and aluminum. For moving boats into and out of the water Modutech has several lifts, including a marine rail with 85-ton capacity. Modutech also offers services to non-marine industries.

Adjacent to Modutech are three parcels owned by TE Walrath trucking that together total 6.4 acres. This property is used for staging construction materials and for mooring construction barges. The property also has several ramps for driving heavy equipment on and off barges.

Figure 82 – TE Walrath Trucking and Modutech

Source: Washington State Department of Ecology

Adjacent to the Walrath Trucking site is a 7.6 acre parcel owned by Edman Holdings and used by Edman as a log sorting yard. The facility was constructed in 1997 and contains a variety of machines used for sorting logs, wood chips, and related products. The property does not have a dock, but it does appear that logs are rafted in and lifted from the water.

Sound Refining operates an oil distribution facility adjacent to the Edman log yard. This facility combines five tax parcels into one 18-acre site, and which includes a dock and mooring dolphins with a combined berthing length of 700 feet, with 32 of depth alongside. Sound Refining serves commercial suppliers, distributors, and the industrial market in the greater Pacific Northwest, and is also a distributor of ultra-low sulfur diesel, biodiesel and biodiesel blends. The firm's Hylebos site contains above ground storage tanks with total capacity of 690,000 barrels and ranging in size from 200 to 61,000 barrels.

Figure 83 – Sound Refining

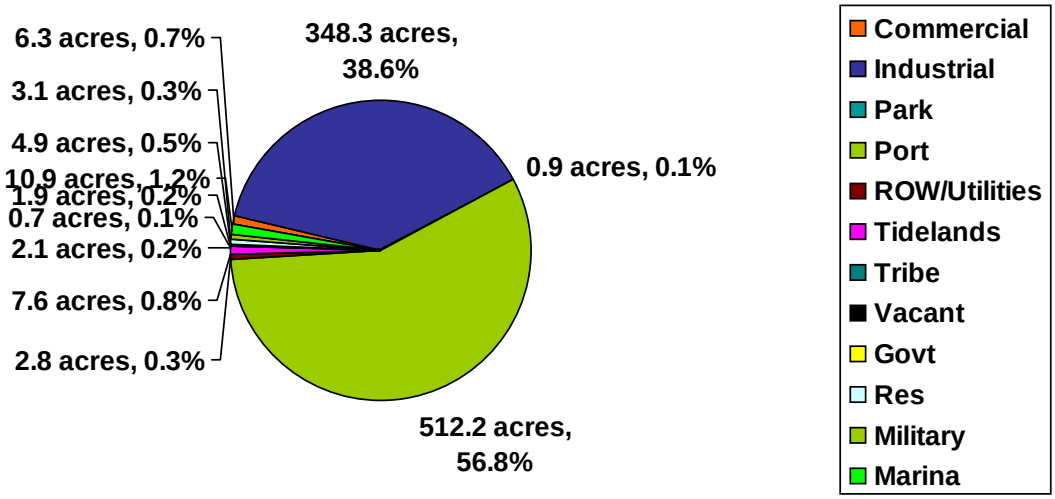
Source: Washington State Department of Ecology

Between Sound Refining and 11th Street the Port of Tacoma owns a 23 acre parcel that primarily contains of tidelands are used for tying up log rafts. The property also has frontage on Marine View Drive, but the upland portion also has a stream running through it.

Between the Port property, 11th Street, and Marine View Drive are a number of non-water dependent parcels that contain a variety of commercial and industrial uses. The Port Deli Mart is located at the corner of Marine View Drive and 11th Street. The City of Tacoma Water Department owns the adjacent half-acre site,

According to parcel information for the district, approximately 512 acres are owned by the Port of Tacoma (57% of the district total). The next largest category is industrial with 348 acres (39% of total). A variety of other uses also occur in the district, but all are less than 11 acres in size.

Figure 84 – S-10 Shoreline Land Use Distribution



2.1.10 S-11 Shoreline District – Marine View Drive South.

The "S-11" Shoreline District runs along the northeast side of the Hylebos Waterway, beginning at East 11th Street and running 3,900 feet to the northeast, from the high water mark to a line running 200 feet inward from the high water mark.

The intent of the "S-11" Shoreline District is to permit the development of water-related parks, open space, and recreation facilities, and to allow development of marinas and related facilities, water-oriented commercial uses, and residential uses.

The primary features of this district are two marinas, the Chinook Landing Marina, owned and operated by the Puyallup Tribe, and the adjacent Ole & Charlie's.

Chinook Landing Marina is owned and operated by Marine View Ventures, Inc., the economic development arm of the Puyallup tribe. The marina is 100% occupied, with a waiting

list for all size slips. Chinook Landing is currently working to secure permits for a new fuel dock. This marina is located on a 65 acre parcel, the majority of which consists of Tideflats.

Figure 85 – Chinook Landing Marina

Source: Washington State Department of Ecology

Ole & Charlie's is a full service marina offering boathouses, covered moorage, dry storage, boat launching, and other boat services. Ole & Charlie's was recently purchased by the Port of Tacoma and is being sold to the Puyallup tribe. This sale by the Port contained restrictions on residential development on the site, which had been a permitted use. It is believed that the Tribe will rehabilitate the marina and tie its operations with Chinook Landing Marina.

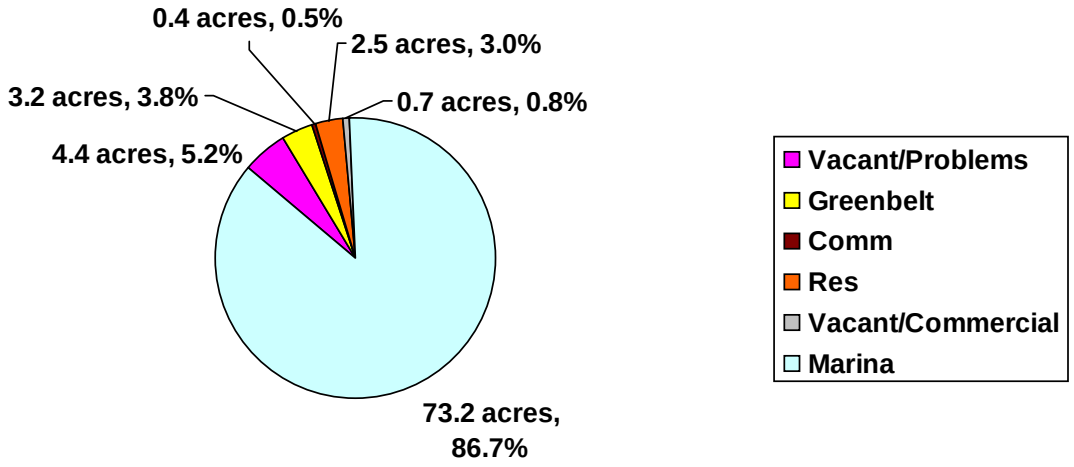
Figure 86 – Ole & Charlie's Tacoma

Source: Washington State Department of Ecology

The marinas in District S-11 account for 73.2 acres, or 86.7% of the shoreline parcel acreage. A large share of the remaining parcel acreage is unlikely to be suitable for developable, and consists of greenbelt (3.2 acres, or 3.8% of parcel total) and steep slopes ("Vacant/Problems), which accounts for 4.4 acres, or 5.2% of the total. Commercial and vacant commercial parcels account for slightly more than one acre, and the remaining 2.5 acres are contained in one large residential parcel.

In addition to the parcel acreages, the right of way for Marine View Drive and East 11th Street lie within the S-11 zone.

Figure 87 – S-11 Shoreline Land Use Distribution



S-12 Shoreline District – Marine View Drive North.

The "S-12" Shoreline District includes the shoreline and land 200 feet inward, between the S-11 district and the Tacoma city boundary with Browns' Point. The intent of the "S-12" Shoreline District is to permit the development of water-related parks, open space, and recreation facilities, and allow development of marinas and related facilities, water-oriented commercial uses, and residential uses.

Figure 88 –Shoreline District S-12

Source: RMI, Inc.

The S-12 district primarily consists of marina and tidelands, with a small number of residential and commercial parcels interspersed along the shoreline.

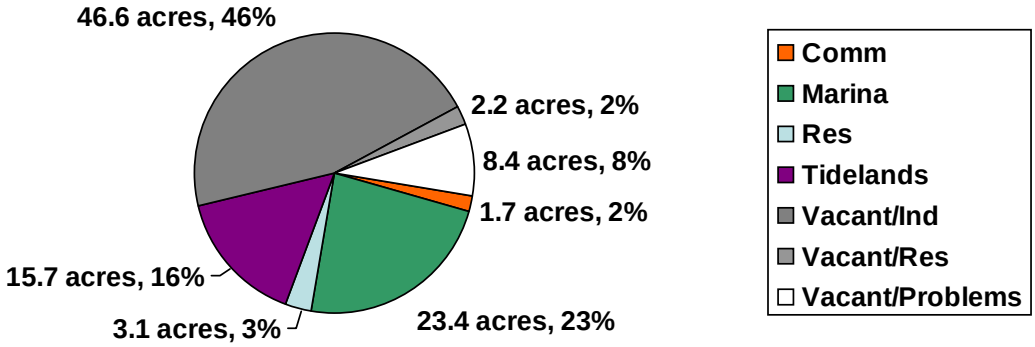
The marina in District S-12 is the Tyee Marina, located near the northwest end of the district. The Tyee Marina features 750 slips ranging between 20 feet and 50 feet in length.

Between the Tyee Marina and Ole & Charlie's Marina most of the parcel acreage on the water side of Marine View Drive consists of tideland owned by either the Port of Tacoma or the Puyallup Tribe. There are also a number of residential parcels along the shoreline of this stretch.

The S-12 District contains two commercial parcels that are adjacent to each other and which contain the Cliff House restaurant and its parking lot.

The S-12 district contains a total of 101 shoreline acres, according to parcel records. Nearly half of this space is classified as Vacant Industrial. However, nearly all of the Vacant Industrial acreage is comprised of Tideflats used for tying up log rafts, and the portions that are above the high water line are almost entirely road right of way or steep slope. In addition to the vacant industrial land, there are two acres of vacant residential land and 8.4 acres of vacant land with problems for development (due primarily to steep slopes). Marinas are the second largest land use, accounting for 23.4 acres, or 23% of the total. Tidelands account for another 15.7 acres, or 16%. Along Marine View Drive southeast of the marina there are also a number of residential parcels with waterfront houses. These residential parcels account for 3.1 acres, or 3% of the total acreage.

Figure 89 – S-12 Shoreline Land Use Distribution



3 Demand by waterfront uses

This section provides an estimate of demand for waterfront uses focusing on marine terminals, commercial boat manufacturing and moorage and recreational boat moorage and related services (repair, retail and like amenities).

3.1 Overview

3.2 Marine terminals

Marine terminals, owned by the Port of Tacoma and by private firms, represent a long-established use of the waterfront from the Thea Foss Waterway around to the mouth of the Hylebos Waterway.

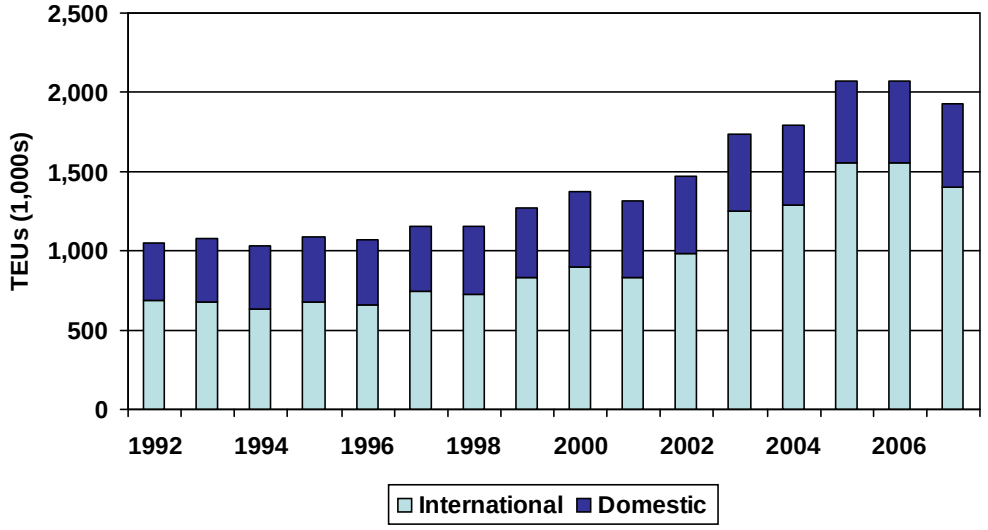
3.2.1 General cargo and grain terminals

3.2.1.1 Container terminals

The Port currently has 6 existing container terminals (APM Terminals, Husky Terminal, Evergreen Pierce County Terminal, TOTE Terminal, Washington United Terminals and Olympic Container Terminal. The Port has developed on-dock railyards to provide service for all of its terminals.

Container traffic increased from around 1 million TEUs from 1992 through 1996 to approximately 2 million TEUs (twenty foot equivalents). The Port of Tacoma experienced a significant increase in volumes in 2005 due to logistics problems in Southern California. Volumes fell in 2007 as some of this cargo shifted back to Southern California.

Figure 1 – Port of Tacoma Container Trends (1,000 TEUs)



Despite the slowdown in economic growth and competition from other regions, there is expected to be a continuing growth in containerized traffic. The Port has an excellent

opportunity to grow due to its infrastructure (deep water, road, rail et al) plus its ability to offer mega-terminals (over 125 acres) which are required to meet the needs of the larger container ships calling in North America. Future volumes are expected to grow at higher rates than the recent past.

The Port is currently designing a new terminal for YTTI (approximately 168 acres), which is expected to open in 2012. It will be located near the outside end of the Blair Waterway, where the TOTE Terminal is currently located. TOTE will be relocated to the outside end of the Blair Waterway, where the Earley Business Center is located. As a part of the Blair Hylebos redevelopment project, the berth of the Washington United Terminal will also be lengthened to accommodate larger vessels. Approximately 70% of the Port's imports are railed to inland destinations in North America. As a result, another critical part of this plan is the development of extensive supporting rail, road and related infrastructure (RRI). Much of the RRI development will occur near the shoreline area of the Hylebos Waterway.

In addition, the Puyallup Tribe and its partner SSA are currently planning another mega-terminal at private property along the Blair Waterway. This terminal is currently planned to be approximately 180 acres with two berths and come on line around 2015.

Total container traffic at the Port of Tacoma is projected to reach nearly 4 million TEUs by 2012 after completion of the YTTI terminal[54]. BST Associates projects that Port of Tacoma container traffic could reach approximately 8 million TEUs by 2025. This forecast assumes that the Port of Tacoma maintains market share in the US container market, which is expected to grow at average annual rate of 5% during this period.

The productivity of container terminals is expected to increase from an average rate of around 3,300 TEUs per acre per year in the US Pacific Northwest at the present time to more than 7,000 TEUs per acre per year by 2028.

3.2.1.2 Breakbulk terminal

Breakbulk cargoes are handled at Terminal 7 (25-acres), located on the Sitcum Waterway next to the Olympic Container Terminal. This facility accommodates heavy lift and project cargoes, as well as a wide range of RO/RO cargoes. In addition, the Port has been designated a National Strategic Port to serve breakbulk cargo needs of nearby Fort Lewis.

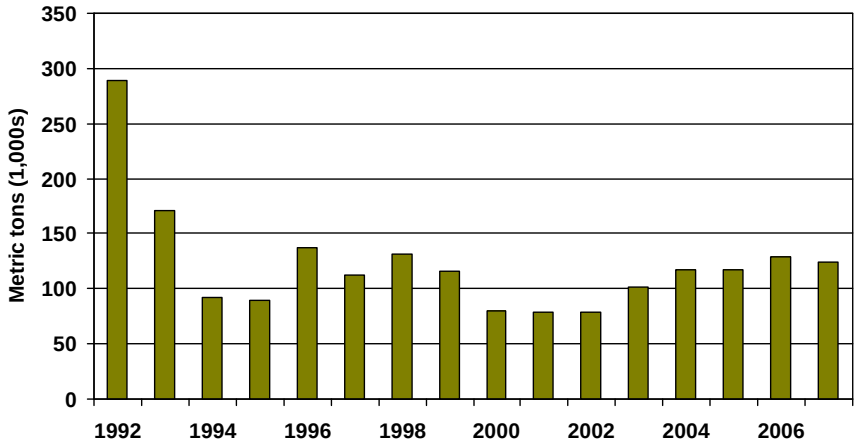
The Port has experienced continuing growth in breakbulk cargoes from 79,000 tons in 2002 to 124,000 tons in 2007. However, in prior year (1992 and before), breakbulk volumes were around 300,000 tons. The advent of containerization diverted cargoes that were capable being containerized into containers. The majority of the Port's breakbulk cargoes include manufacturing equipment, factory components, power equipment such as generators and wind mills, military equipment and like cargoes.

While not expected to grow as rapidly as containerized cargo, breakbulk cargoes are expected to see continued growth at 1% to 3% per year, depending on the commodity group. The Port's 2009 budget projects breakbulk tonnage will increase from 124,000 tons in 2007 to 153,000 tons in 2012 (at 3.5% per year). BST Associates projects that breakbulk tonnage could reach 195,000 tons by 2028, which amounts to growth of 1.5% per year between 2012 and 2028.

[54] Source: Port of Tacoma 2009 Budget

Terminal 7, which is the primary source for breakbulk activity, is around 25 acres with a three berth (2,700 feet). The demand for breakbulk terminal space could reach 55 acres.

Figure 2 – Port of Tacoma Breakbulk Trends (1,000 metric tons)

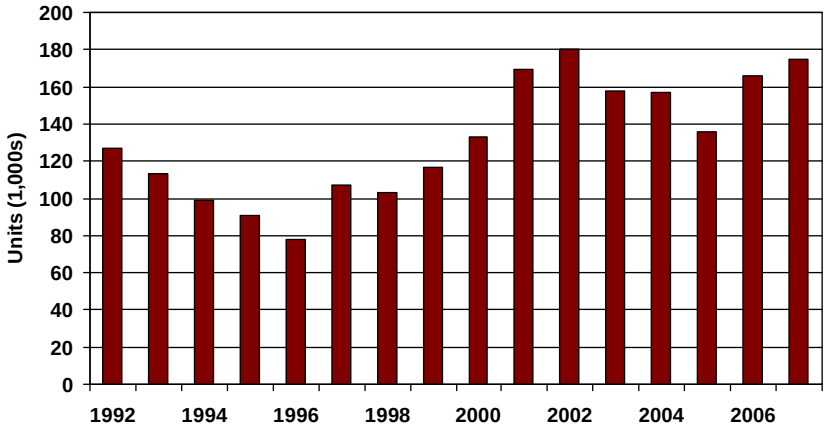


3.2.1.3 Auto terminal

Auto imports are accommodated via the new Marshall Avenue Auto Facility (146-acres). Auto ships call at the Blair Auto Dock, which is connected to Marshall Avenue yard by a dedicated overpass. The Auto Facility is directly served by BNSF Railway and Union Pacific Railroad. Including all space for autos, the total facility area is 165 acres which includes a total building area (office space, vehicle maintenance, wash, etc.) of 148,000 square feet. More than 25,000 automobiles can be stored and processed a time.

The Port has experienced a substantial growth in automobile imports, from 103,000 units in 1998 to 175,000 units in 2007. The Port's 2009 budget projects auto imports will increase from 177,000 units in 2007 to 203,000 units in 2012 (at 2.7% per year). BST Associates projects that auto imports could reach 280,000 units by 2028, which amounts to growth of 2.0% per year between 2012 and 2028. The demand for auto terminal space could reach 250 acres.

Figure 3 – Port of Tacoma Breakbulk Trends (1,000s of units)



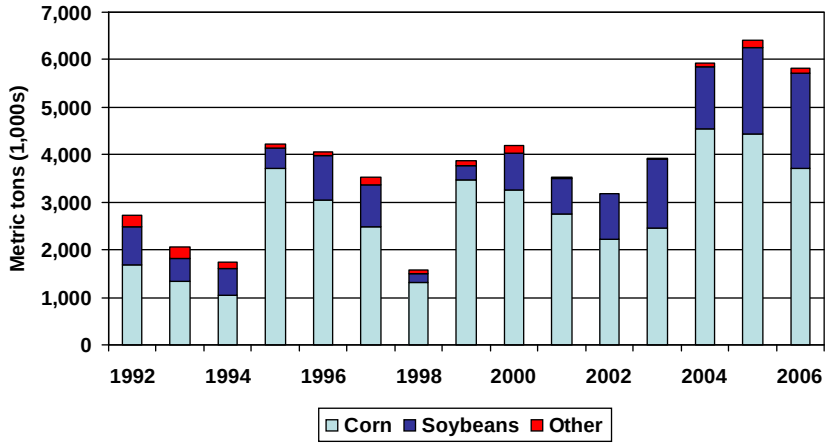
3.2.1.4 Grain elevator

Grain is exported from an 11-acre (4.5-hectare), 3 million bushel capacity terminal owned by the Port and operated by Cargill (TEMCO), a world leader in agricultural commodities.

The TEMCO terminal has exported approximately 6 million + tons of grain each year since 2004. Most of the products (primarily corn and soybeans) come from the US Midwest. Rising incomes in Asian countries, the low vale of the US dollar and favorable transportation costs relative to the US Gulf have contributed to the increase in grain exports via the Pacific Northwest.

These conditions are expected to continued, with grain exports ranging from 4 to 6 million tons per year.

Figure 4 – Port of Tacoma Breakbulk Trends



3.2.2 Other bulk terminals

Other (mainly private) marine terminals handle a variety of products including petroleum products, crude minerals (mainly used in the construction industry), scrap and ores, forest products and other uses such as marine construction, moorage of commercial vessels and like activities.

3.2.2.1 Petroleum Products

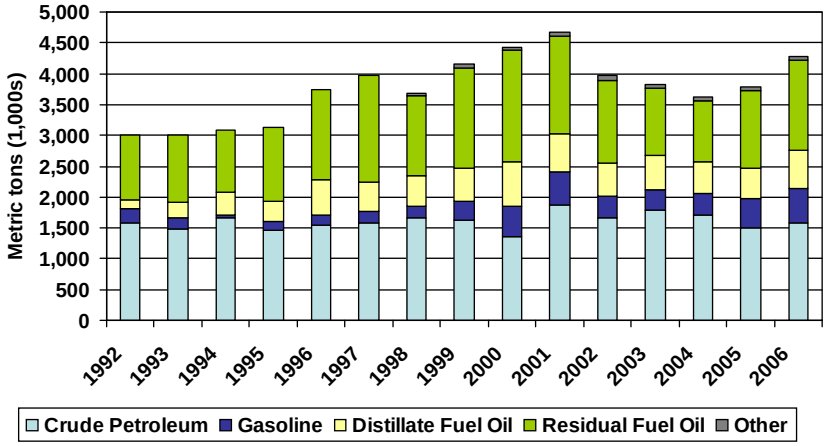
There are four oil refineries and/or distribution facilities in Tacoma: Sound Refining Inc, (Hylebos Waterway), US Oil & Refining Company (Blair Waterway), ConocoPhillips Tacoma Terminal (Thea Foss Waterway) and Valero Logistics (Thea Foss Waterway).

The terminals in the Tacoma harbor have shipped and/or received 3.5 to 4.5 million tons of crude oil and petroleum products annually since 1996. It is expected to remain in this range throughout the study period.

These four facilities, which comprise approximately 36.1 acres in the shoreline zone, are expected to remain in place throughout the study forecast period unless dislocated by other water-dependent industrial or terminal use. They currently have several advantages to their locations. Water access provides lower transportation costs and other required modes of

transportation are already in place (pipelines, rail and truck systems). In addition, it is extremely difficult to find new sites to permit these activities.

Figure 5 – Petroleum Product Trends

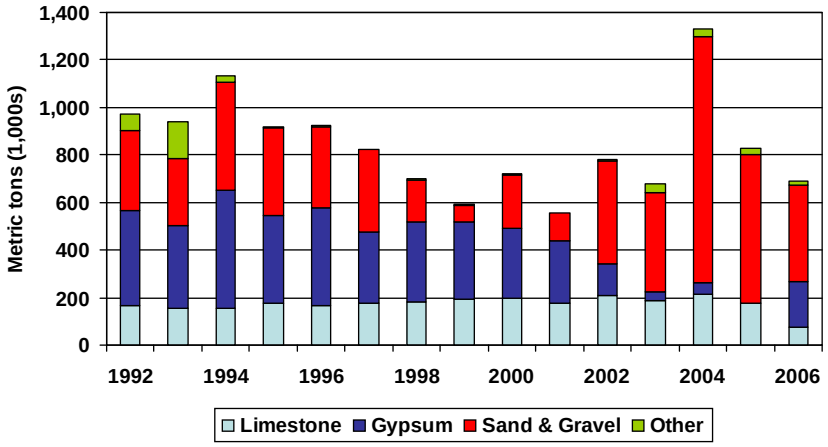


3.2.2.2 Crude Minerals

There are three terminals that receive and/or ship crude minerals. Glacier Northwest receives sand and gravel as an input to cement manufacture. Graymont Lime receives limestone from British Columbia as an input to its manufacture of lime product. G-P Gypsum receives gypsum from Mexico as an input to wallboard manufacture. These three facilities take up 12.2 acres of City of Tacoma's shoreline.

Volumes of these products typically range from 600,000 to 800,000 tons per year, although volumes have exceeded the range on occasional years. Water access is an important asset for these manufacturers because transport of low valued product inputs is less expensive by water. These facilities provide key inputs to the construction and other (agricultural and processing) industries.

Figure 6 – Crude Mineral Trends



It is expected that these firms will remain in their present locations through the end of the study period or be moved to an alternative site if impacted by terminal development or other water-dependent use.

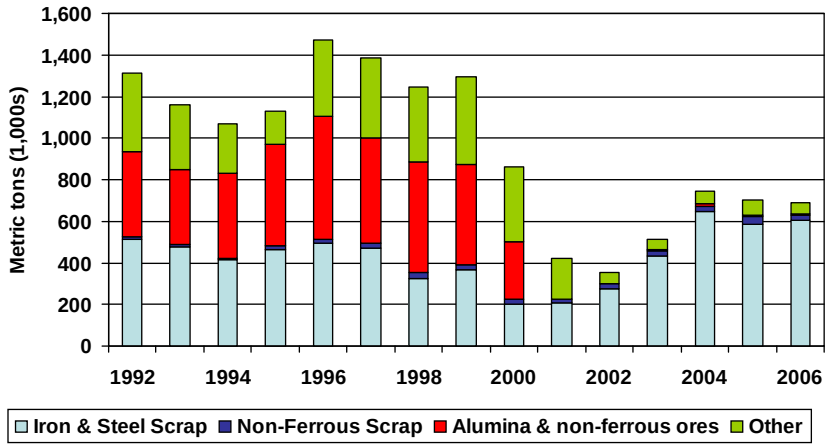
3.2.2.3 Scrap & Ores

Most ore imports (alumina and bauxite) that moved through the Tacoma harbor were associated with the Kaiser Aluminum smelter operations in Tacoma and Mead. The Kaiser Tacoma facility was dissolved in 2001 and the ore imports that were bound for Mead were shifted to a terminal in the Columbia River. The Port also handled some copper exports in bulk form but these exports shifted to terminals in the Columbia River.

Scrap volumes have increased from 400,000 to 500,000 tons between 1992 and 1999 and have exceeded 600,000 tons in the past three years. Scrap is handled at Schnitzer Steel and Calbag Metals (by land only). These firms account for 21.7 acres of the shoreline zone in the City of Tacoma.

It is expected that these firms will remain in their present locations through the end of the study period.

Figure 7 – Ore and Scrap Trends



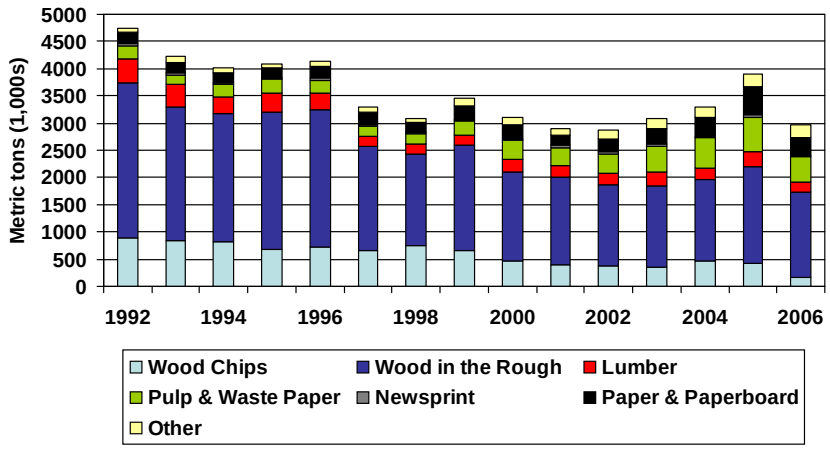
3.2.2.4 Forest Products

Wood chips and log shipments by water declined significantly during the 20 years. The Port of Tacoma bought out the lease of Weyerhaeuser's wood chip terminal to allow for container terminal expansion related to the Pierce County Terminal. Weyerhaeuser subsequently decided to shift its log export operation from Tacoma to Olympia. Log exports via the Port of Tacoma Blair terminal ceased in 2003. It is unlikely that wood chips and logs will disappear completely since they are inputs to other manufacturing processes. However, the likely volumes will be very small.

Forest products are still produced at Manke Lumber, Buffelen Woodworking and Simpson Tacoma, among other firms on the Tacoma Tideflats. Most of the outputs from these mills move into the domestic market or are shipped in containerized or breakbulk form to overseas markets. These firms account for 144.8 acres of the shoreline total.

There has already been a significant shrinkage in the acreage associated with forest product processing and distribution systems in Tacoma as well as in other areas of the Pacific Northwest. BST Associates projects that the remaining firms will likely stay at their present locations unless impacted by another water-dependent use.

Figure 8 – Forest Product Trends



3.2.2.5 Other Producers and Manufacturers

In addition to the above listed firms, there are other firms that ship/receive smaller volumes of products or that provide moorage to commercial vessels. As an example, Pacific Northwest Terminals, located at the end of the Hylebos (by Manke) ships tallow and animal fats. Examples of vessel moorage include Sperry Dock (serving the Ready Reserve fleet), Foss Maritime (moorage of company owned equipment), US Army Reserve (moorage of military at the end of the Blair Peninsula) and Trident Seafoods (moorage of fishing boats at the end of the Blair Peninsula).

There are also a number of other firms that produce various fabricated metal and concrete products in the Tacoma Tideflats, including Jesse Engineering, Streich Brothers and Concrete Technology, among others. These firms occasionally receive inputs or ship products by water. Volumes moving by water are relatively small but water access is considered an important feature of their current sites.

In total, these industrial users account for 110.3 acres. BST Associates projects that these firms will remain at their existing locations unless dislocated by other terminal or industrial uses. The Port also has 212 acres in industrial use (including right of ways).

3.2.3 Commercial Boat and Vessel Moorage

Other firms are engaged in moorage of boats and vessels. For example, Crowley Maritime Corporation services the US Ready Reserve Fleet along Ruston Way. American Construction (located on the Hylebos) moors company owned construction equipment.

3.2.3.1 Boat Builders and Shipyards

There are also a number of firms engaged in building and repairing recreational and commercial boats in Tacoma. Nordlund Boat, Modutech, Metalcraft Marine, Aleutian Yachts

and Northcoast Yachts et al manufacture recreational boats. Martinac Shipyard and Marine Industries Northwest build and repair commercial vessels.

Firms in both sub-sectors (ship building/repair and boat building) have both performed well during the past 13 years. According to the Washington State Department of Revenue, gross business incomes increased on a real (inflation adjusted) average annual basis of 4.5% for ship building/repair and 9.3% for boat builders.

Table 2 – Gross Business Income of Ship and Boat Builders in Washington State ($millions)

Year	Ship Building & Repair	Boat Building	Total
1994	$168	$289	$458
1995	$201	$368	$569
1996	$225	$392	$617
1997	$220	$421	$641
1998	$193	$446	$640
1999	$270	$523	$793
2000	$270	$571	$841
2001	$240	$503	$743
2002	$274	$587	$861
2003	$260	$670	$930
2004	$333	$1,085	$1,418
2005	$427	$1,019	$1,446
2006	$349	$1,184	$1,533
2007	$420	$1,294	$1,714
CAGR 94-07	7.3%	12.2%	10.7%
Inflation	2.9%	2.9%	2.9%
Real growth	4.3%	9.3%	7.7%

Source: Washington State Department of Revenue

Economic conditions affecting vessel acquisition (commercial and recreational) are unfavorable at the present time. This has lead to a reduction in the number of firms in this sector. Some of these firms in the Tacoma area are also being affected by container terminal expansion at the Port of Tacoma. Metalcraft Marine, Aleutian Yachts and Northcoast Yachts are considering their relocation plans as a result of dislocation from the YTTI Terminal. Metalcraft Marine will likely consolidate to its headquarters in California. The Port is working with the others to relocate to the East Thea Foss Waterway.

Firms engaged in ship and boat building and repair currently account for approximately 14.6 acres in the City of Tacoma's shoreline districts (excluding the firms located in the Earley Business Center). BST Associates projects that 10 to 20 acres may be required to meet the needs of this sector by the year 2028. A portion of this demand can be accommodated at the Wattles property on the East Thea Foss.

3.2.3.2 Marinas

Tacoma has recently undergone a resurgence in redevelopment of its marinas with some new marinas developed and others rebuilt. Tacoma has approximately sixteen moorage facilities (for permanent and transient moorage), including: Delin Docks, Dock Street Marina, Foss

Harbor Marina, Foss Landing Marina & Boat Storage, Point Defiance Boat House, Breakwater Marina, Tacoma Yacht Club, Chinook Landing Marina, Commencement Bay Marine Services/Youth Marine Center, Crow's Nest Marina, Narrows Marina, Old Town Dock, 15th Street Dock, Johnny's Dock Marina, Hylebos Marina and Tyee Marina.

The marina industry is facing difficulties due to current economic conditions (reductions in discretionary income, difficulties in obtaining credit, higher operating costs, especially fuel and reduced fishing opportunities). However, Tacoma's marinas are functioning well. Interviews with operators indicate that these marinas are well utilized (with a 96% occupancy rate) at the present time.

In addition, Pierce County has experienced a sustained growth in boat registrations. Across all boat types and lengths, the number of registered boats grew at 1.4% per year between 1990 and 2007. This was slightly lower than the population rate in Pierce County at 1.8% between 1990 and 2007. However, boats requiring wet moorage (generally over 26 feet in length) grew very rapidly:

- 21' to 30' – grew at 1.9% per year,
- 31' to 40' – grew at 1.5% per year,
- 41' to 50' – grew at 3.4% per year,
- 51' to 60' – grew at 5.9% per year,
- Over 60' – grew at 9.7% per year.

In addition, there has been strong growth in the number of hand-powered craft (kayaks, canoes etc), which are not registered with the State Department of Licensing. These boats have grown at 7.6% per year.

This trend is similar to that experienced in other Puget Sound counties, with growth accelerating along with the size of the boat and in non-registered hand-powered boats. The forecast calls for continued growth but at a slightly slower rate. BST Associates projects that demand for wet moorage could increase by as many as 500 slips by 2025.

There is a need to allow for additional development of transient and permanent wet moorage facilities. This should include replacing mooring buoys along Ruston Way.

Foss Landing, a dry stack operation that provides moorage for boats up to 38 feet, has also flourished. It is full and has a waitlist. In addition, there is a need for improved facilities for hand launched and trailerable boats (up to 26 feet long).

There is also a need to preserve and enhance recreational boating and upland support activities such as repair, retail and other services. Repair and retail services are provided by Commencement Bay Marine Services, Modutech, J&G Marine and Hyland Marine in the waterfront area as well as several others in the Greater Tacoma area.