APPENDIX C: FUTURE LAND USE ANALYSIS DETAILS

Appendix C: Future Land Use Analysis

C.1. INTRODUCTION AND METHODOLOGY

C.1.1 Purpose

Federal law prohibits the construction of any bridge across the navigable waters of the U.S. unless first authorized by the U.S. Coast Guard. The Bridge Permit Application Guide (COMDTPUB P16591.3D) requires the development of Navigation Impact Report (NIR) to identify the current and prospective navigation on the waterway. This includes the potential for future navigation needs from the development of land uses along the waterway. This appendix includes an analysis of existing and potential commercial/industrial development and examines the likelihood of creating additional navigation activities that could be impacted by the proposed Interstate Bridge Replacement (IBR) program.

This appendix is an update of the work completed in support of the Columbia River Crossing NIR completed in 2012.

C.1.2 Subject Area

The geographical extent analyzed extends from the proposed new Interstate 5 (I-5) bridge to the BNSF Railway rail bridge at Celilo Falls. The geographical extent analyzed landward from the river is approximately 0.5 miles. Together, these geographical extents compose the "subject area." Land uses farther inland may generate marine traffic; however, those cargoes would be transported to waterfront facilities for transfer to barges or other vessels within the project area.

Locations upriver of the BNSF Railway rail bridge at Celilo Falls would not be expected to generate vessels or cargoes that would be impacted by the I-5 bridges due to existing height (79 feet when raised) and width restrictions imposed by the Celilo Falls bridge and others located upstream (see Section 3.1 in the main report). Areas downstream of the I-5 bridge and the BNSF Railway would also not be expected to generate vessels or cargo that would be impacted by the I-5 bridge because most vessel transit is generated from upstream of the I-5 bridge. Furthermore, there is minimal cargo generation or transit from downstream locations that are not already limited by upstream height or width restrictions.

C.1.3 Data Sources

The land use assessment is an update to the land use assessment completed for the 2012 Columbia River Crossing NIR, Appendix A. Using aerial imagery, planning documents (e.g., Comprehensive Plans), and interviews with staff, the marine-dependent uses within each county were updated to reflect current land uses. This update relied on the following information:

- 2012 Columbia River Crossing NIR, Appendix A: Future Land Use Analysis, prepared by David Evans and Associates, Inc.
- Google Earth aerial imagery.
- Interviews: WSP USA Inc. interviewed city/county planning departments by telephone to confirm the key findings and identify potential concerns related to river traffic.

C.1.4 Land Use Assumptions

Comprehensive plan land use designations and policies and zoning and development regulations state what types of land uses can be set in each zoning area. Some uses are allowed "by right," which means they are permitted through a simple application process. Other uses are often referred to as "conditional" or "limited uses" and are subject to extra requirements and additional review. Base zone requirements, which developments may have to meet regardless of whether they are permitted outright, typically include dimensional regulations such as height and setbacks. Zoning overlays are additional designations that may further restrict uses or developments, such as requiring additional and potential mitigation related to floodplain, riparian, wetlands, and wildlife habitat. The land use permitting process ensures that development is compatible with the designated uses and standards of the zone.

In the subject area, zoning is typically industrial, residential, commercial, and open space/parks/recreation. Each jurisdiction typically will have variations in uses allowed in each zoning designation. For analysis purposes, the following assumptions are made regarding the various uses and their potential to generate marine-dependent uses:

- Industrial: Typically allows for varying levels of manufacturing and production. Marine-dependent uses can include ship building, metal fabricating, timber processing, and boat building. These sites may also have the capability of generating large objects, such as oil rigs.
- Commercial: These uses include restaurants, stores, and offices. Commercial uses may include commercial marinas; however, most commercial uses are unlikely to generate marine traffic. The marine traffic that could be generated by commercial uses is likely individually owned recreational boats, which could include sailboats, touring boats, or passenger (cruise) vessels.
- Residential: Residences with various tax lot sizes and accessory structures such as docks. The marine traffic that would be generated by residential uses is likely privately owned recreational boats. This could include sailboats.
- Open space/parks/recreation: Areas designated as open space/parks/recreation are typically used for habitat conservation and/or passive and active recreation. Public docks and marinas may be included with these uses for recreation purposes. Sailboats may use the docks and marinas.
- Zoning overlays: It is assumed that, depending on the local jurisdiction, floodplain, riparian, and other natural resource overlay standards may apply to all sites along the river.

C.1.5 Other Assumptions

There may be land uses outside of the project area, specifically agricultural, that may generate or be supported by marine traffic. However, because the goods would have to be transported by another freight method to the riverfront, they could be accommodated by barge or shipped on boats that would not have any vertical clearance issues. Additionally, businesses outside of the area may provide service to the area. For example, marine contractors are likely needed upriver in the future for a variety of projects.

C.1.6 Site Suitability

Although lots may be zoned for use along the Columbia River, there may be additional factors that limit or leverage development potential. These include:

- Plotted tax lot size and dimensions can reduce development potential by limiting the necessary space to accommodate development and meet zoning setback requirements.
- Lots can be constrained by roads, freeways (such as Interstate 84 [I-84]), railroad (Union Pacific Railroad or BNSF line), or other public infrastructure (such as power lines). In addition, easements, particularly recreational trail easements, may create a buffer between a development and the riverfront.
- Regulated natural resources, such as wetlands or Endangered Species Act habitat, can prohibit development or make development cost-prohibitive because of the fees and mitigation requirements for environmental permitting, as well as local, state, and federal permitting (see following sections).
- Bathymetric and other river conditions may prohibit or restrict access to the navigable portions of the river from the shoreline.
- Sites with existing infrastructure, especially docks (see Section C.2.7), are more conducive to uses and redevelopment that may generate varying degrees of marine traffic. Depending on the development, these sites also would likely not be subject to as stringent environmental permitting requirements.

C.1.7 State and Federal Environmental Permitting Requirements

Water-dependent uses need access to the water, which typically involves a structure into the river. Depending on the type of development, where exactly development would occur in proximity to the river, and whether there is work below ordinary high water in the Columbia River, state and federal permits could potentially be required. This document does not cover whether the marine uses discussed require state or federal permits.

C.1.7.1 Columbia Gorge National Scenic Area

The Columbia River Gorge National Scenic Area (NSA) lies to the east of Portland, Oregon, and Vancouver, Washington. It stretches about 83 miles, from the Sandy River on the west to the Deschutes River on the east in Oregon, and from Gibbons Creek in Clark County to a line 4 miles east of Wishram in Washington. The NSA covers portions of six counties: Clark, Skamania, and Klickitat Counties in Washington, and Multnomah, Hood River, and Wasco Counties in Oregon.

The Columbia River Gorge Commission, a regional commission representing local, state, and national interests, was established in 1987 to develop and implement policies and programs that protect and enhance the scenic, natural, cultural, and recreational resources of the NSA, while encouraging growth within existing urban areas and allowing development outside urban areas consistent with resource protection.

To achieve the purposes of the Columbia River Gorge NSA Act, Congress called for preparation of a management plan that would treat the two-state, six-county area as a region. Congress established a two-tiered management approach for preparing the management plan. It divided responsibility between the U.S. Forest Service and the Columbia River Gorge Commission. The six Columbia River Gorge counties were authorized to implement the management plan through their land use ordinances.

The NSA is divided into three categories of land: urban areas, the special management area, and the general management area. Congress designated 13 cities and towns as urban areas: North Bonneville, Stevenson, Carson, Home Valley, White Salmon, Bingen, Lyle, Dallesport, and Wishram on the Washington side of the river and Cascade Locks, Hood River, Mosier, and The Dalles on the Oregon side. The urban areas are exempt from the management plan, but are eligible to receive federal funds authorized to implement it. Per the management plan, the urban areas are the primary focus for growth and economic development. In addition, the management plan states that new industrial development will not be allowed in the NSA outside the urban areas.

There are five established ports within the NSA: Skamania and Klickitat on the Washington side of the river and Cascade Locks, Hood River, and The Dalles on the Oregon side. All five of these ports are within the designated urban areas. Land use regulations regarding development and redevelopment of property in the NSA are promulgated through the Columbia River Gorge Commission's Land Use Ordinance (Chapter 350, Division 81). This code defines industrial and water-dependent uses. Any future expansions or development projects that would use the established ports as a water-dependent use would need to be within a designated urban area.

The NSA does not allow industrial development outside of the urban areas. It also confines development to the relatively small urban areas, thus limiting the amount of space for industrial uses and the additional services used to support industrial uses. In addition, less developed areas could lack the skilled labor necessary for an industrial use.

The NSA promotes recreation and water-dependent recreation and protects the resources of the Columbia River Gorge, which has ideal freshwater sailing conditions from spring through fall. As a result of these conditions, the Columbia River Gorge attracts sailors, including many from outside the area. Water levels are often highest during the sail season, and the number of sailboats visiting the gorge is anticipated to increase with additional waterfront developments and population changes.

C.1.7.2 Washington's Shoreline Management Act

Washington's Shoreline Management Act (SMA) was passed by the state Legislature in 1971 and adopted in 1972. The goal of the SMA is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." The SMA applies to the counties within the affected area as they have "shorelines of the state." Each jurisdiction prepares its own Shoreline Management Plan to be in compliance with the SMA. Preferred uses include single-family residences, ports, shoreline recreational uses, water-dependent industrial and commercial developments, and other developments that provide public access opportunities. Per the SMA, to the maximum extent possible, the shorelines should be reserved for water-oriented uses, including water-dependent, water-related, and water-enjoyment uses. The SMA emphasizes accommodation of appropriate uses that require a shoreline location, protection of shoreline environmental resources, and protection of the public's right to access and use the shorelines (Revised Code of Washington 90.58.020). The SMA supports the use of the Columbia River shoreline for water-dependent industrial uses. However, development must meet the SMA's "no net loss of shoreline ecological function" basis which can add costs for mitigation.

C.2. REVIEW OF LAND USES IN AFFECTED COUNTIES

The following sections identify the potential land uses existing and potential future capability to generate marine traffic. This review includes an evaluation of policies in comprehensive plans and zoning designations to ascertain long-term goals for river front tax lots. The jurisdictions evaluated include the six counties and cities located in the Columbia Gorge NSA on the Columbia River between the I-5 bridges and the BNSF Bridge at Celilo Falls, per Section 6.5 of the NIR:

- Washington
    - Clark County (Vancouver, Camas, Washougal)
    - Skamania County (North Bonneville, Stevenson, Home Valley)
    - Klickitat County (Bingen, Dallesport)
- Oregon
    - Multnomah County (Portland, Fairview, Troutdale)
    - Hood River County (Cascade Locks, Hood River)

- Wasco County (The Dalles)

A summary of regulatory standards and any key issues/areas of concern are described for each jurisdiction.

C.2.1 Clark County, Washington (Vancouver)

This section describes the existing and expected future land uses along the riverfront in the city of Vancouver in Clark County.

C.2.1.1 Existing Uses

The shoreline in Vancouver contains a wide mix of uses, including heavy industry, residential, and recreational uses.

Port of Vancouver

The Port of Vancouver is located along the Columbia River's deep-draft channel that extends from the Pacific Ocean to just downstream of the I-5 bridge. Terminals downriver from the BNSF bridge are not included in this analysis because they would not likely contribute to changes in vessel traffic not captured by the upriver analysis. For example, the grain terminal includes facilities for the receipt of grain barges. These barges originate at barge-loading facilities upstream of I-5, upriver of the BNSF rail bridge include Terminal 1, the Vancouver Waterfront, and at the La Farge property. Terminal 1 is the eastern-most portion of the Port of Vancouver's waterfront development. The Port of Vancouver's master plan for Terminal 1 includes office, residential, and retail space and will have over 950,000 square feet of new mixed-use development. This includes removal the existing structures located on the dock. Terminal 1 will also include bike and pedestrian trails and a public dock for pleasure boats.

Per the master plan, Terminal 1 will not be devoted to cargo handling and thus would not involve changes to navigation for these types of vessels. Terminal 1 will continue to be made available to cruise vessels. Cruise vessels are addressed in Section 5 of the NIR. Terminal 1 is identified for potential partial acquisition by the program but adequate dock space should remain to support continued cruise vessel use.

La Farge Site

La Farge North America operates a cement handling facility on approximately 1.83 acres immediately east of the BNSF rail line. The site includes marine access and is presently the only facility that is

accessed by deep-draft traffic above the BNSF bridge.[1] The deep-draft traffic that accesses the site does not use the Upper Vancouver Turning Basin and would not be impacted by the replacement bridges. No other deep-draft traffic passes above the BNSF railroad bridge.[2]

Vancouver Waterfront

The Vancouver Waterfront is a development located along the Columbia River between the BNSF rail bridge and the existing I-5 bridge. The 32-acre site extends across the Columbia waterfront and includes a variety of mixed-use, residential, and commercial space. The site includes an expansive open space that spans the entire site. The site does not include any marine facilities or land uses that would generate vessel traffic.

Columbia Business Center

The Columbia Business Center (CBC) is an industrial parcel located approximately 1.2 miles upriver from the I-5 bridges. To the west of the CBC is a mixed-use development, which includes residential housing, retail, and restaurants. To the east of the CBC is a city park with a boat ramp and an industrial waterfront site used by facilities operating out of the CBC.[3]

The CBC includes approximately 2.3 million square feet of space in 27 buildings and approximately 1.0 million square feet of open leasable space, as shown in Figure C.2-1. In 2021, it was reported that the CBC is essentially completely occupied with approximately 54,000 square feet of leasable area available.[4]

[1] https://books.google.com/books?id=q2qtQeTdmrkC&pg=RA4-PA92&lpg=RA4-PA92&dq=cement+dock+vancouver+washington&source=bl&ots=3fNmwkYnAO&sig=ACfU3U0mwsQMcVzxJ9Gr06PnSHL11ILJdQ&hl=en&sa=X&ved=2ahUKEwje5PycionyAhXPg-AKHbCwCvUQ6AF6BAgQEAM#v=onepage&q&f=false, page 92.

[2] Ship Navigation Study of Changes to Federal Deep-Draft Navigation Channels due to the Interstate 5 Columbia River Crossing Replacement Bridge, February 2014, David Evans and Associates and Waterway Simulation Technology, Inc., page 6.

[3] https://columbiabusinesscenter.com/.

[4] Personal conversation with Dave Brown, Senior Broker Columbia Commercial Properties LLC, September 21, 2021.

Figure C.2-1. Columbia Business Center

Source: CBC, https://columbiabusinesscenter.com/.

The CBC provides both barge and rail access. The BNSF mainline borders the north side of the property. Rail access within the CBC is provided by a private switching service, expediting transfer of goods on and off cars and reducing demurrage charges. The CBC has a barge slip accommodating river and ocean barges. The East Slip is 130 feet long with water depth at minus 10 feet Mean Low Low Water (MLLW). The East Slip is used to receive and ship fabricated steel products, construction materials, and supplies. The West Slip is not active and there are no plans to improve it. There is a dock located just to the west of the West Slip, which is used by JT Marine. JT Marine vessels and shipyard activities are addressed in the main body of the NIR.

The CBC area has the following water-dependent users:

Thompson Metal Fab, the largest tenant at the CBC, provides fabrication for a wide range of industrial uses including U.S. Army Corps of Engineers, oil and gas, nuclear, tank and vessel, marine and hydro, renewable energy, bridge and structural, and other high-tech industries. The oil rigs and some other structures (fish weirs for the U.S. ACE) are height constrained. Thompson Metal Fab has increased its presence at the CBC from approximately 200,000 square feet in 2006 to its current 717,762 square feet, which represents 30.8% of the net rentable area in the CBC. The 2011 expansion consisted of primary leasing two large older buildings (Buildings 40 and 41) and a large portion of the outside working area located between Building 40 and the Columbia River.[5]

[5] Source: Presale Report GS Mortgage Securities Trust, Series 2012-GCJ7, DBRS, May 2012, pages 17-22.

Vigor Industrial (Vigor) acquired Oregon Iron Works in 2014.[6] Vigor fabricates structures for the alternative energy industry in the Pacific Northwest (systems for tidal power and ocean-based wind energy systems), bridges and transportation equipment for state and local transportation projects, and structures for the U.S. Army Corps of Engineers (fish weirs, lock gates, and other products). Vigor leases approximately 75,000 square feet from CBC, including Building 33 and the laydown area immediately to the east of the building. Vigor owns property immediately in the CBC (a portion of the hatched area of Figure C.2-1), including Building 48 (approximately 50,000 square feet) and open working area south of the building.

Vigor also has a facility located east of the CBC that has approximately 180,000 square feet of manufacturing space. Vigor also has a lease with the city of Vancouver to use the 7-acre city boat basin at 901 SE Marine Park Way south of the facility (Figure C.2-2). The manufacturing site will be used to produce a new type of landing vessel for the U.S. Army.[7] There are no planned modifications at the site. The city of Vancouver also moors their emergency response vessel at the boat basin.[8]

Figure C.2-2. City Boat Basin 901 SE Marine Park Way

Greenberry Industrial (GI) is a full-service mechanical contractor, providing industrial fabrication and installation for various industries in the Pacific Northwest, as well as oil rigs and modules for the oil

[6] Oregon Iron Works (OIW) was acquired by Vigor Industrial (Vigor) in 2014., https://vigor.net/news-press/oregon-iron-works-vigor-merge-to-draw-larger-projects-and-more-jobs-to-the.

[7] http://choosewashingtonstate.com/vigor-to-built-new-landing-craft-in-vancouver/

[8] https://www.cityofvancouver.us/fire/page/vancouvers-quick-response-boat.

industry. GI's facilities[9] include 6 acres in Corvallis, approximately 150,000 square feet at the CBC, and a fabrication facility in Ferndale, Washington (approximately 8 acres). The oil rigs fabricated by GI are height constrained. GI's facilities at the CBC include a deep water, 3,000 ton loading dock and launch access for ocean-going vessels up to 400 feet.[10]

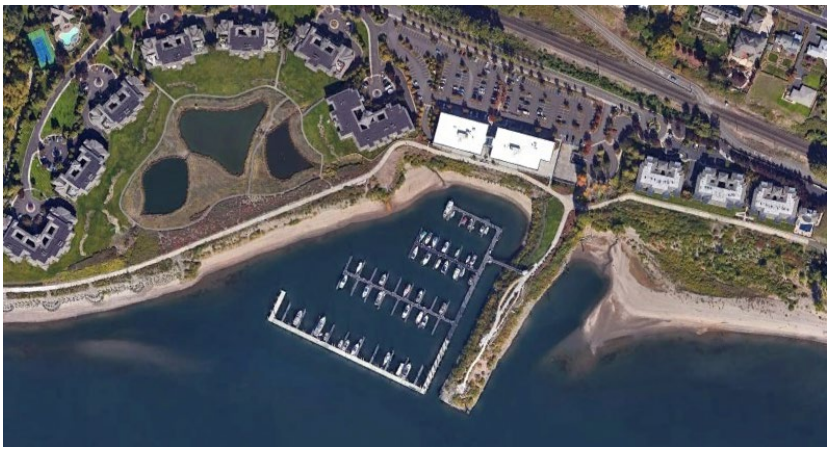
JT Marine operates a diverse array of services, including tug and barge service, shipyard services (providing mobile repair services for the tug and barge industry), and salvage services along the Columbia River. The company also acts as a marine contractor. JT Marine leases a portion of the west end waterfront from the CBC.

There are no known plans for redevelopment of the CBC.

Tidewater Cover Marina

Tidewater Cover Marina is a private marina located approximately 2 miles east of the I-5 bridge. The marina includes 87 slips, ranging in length from 40 feet to 110 feet.[11] Uplands adjacent to the marina are developed as residential condominiums and office and the city of Vancouver Columbia River Renaissance Trail.

Figure C.2-3. Tidewater Cove Marina



[9] Greenberry Industrial website http://www.greenberry.com/.

[10] https://greenberry.com/facilities/vancouver-wa/.

[11] https://www.tidewatercovemarina.com/dmyxn64a4yh9qb52trjvvu6lstodjb.

McCuddy's Steamboat Landing Marina[12]

McCuddy's Steamboat Landing Marina includes approximately 150 slips, ranging in length from 24 to 40 feet, and with some end-ties and side-ties for longer boats. The marina serves the general public and draws customers from across the county and beyond. However, many marina tenants are residents of the adjacent development. Sailboats that moor at the marina are typically too small to be height constrained by the proposed I-5 bridge (discussed in greater detail in Section 7.4.2 of the NIR).

Figure C.2-4. McCuddy's Steamboat Landing Marina

Western Forest Products

Western Forest Products U.S. LLC owns approximately 13 acres on the Columbia River within the City of Vancouver. Most of the site is used by Columbia Vista Corporation as a sawmill under a long-term contract. The facility has a barge dock for outbound shipment of lumber products and has capability to access log rafts.

The Vancouver Riverview Gateway Subarea Plan applies to the eastern section of Vancouver's riverfront. This plan does not include future changes of uses along the river. Within this plan there is one industrial site that is zoned industrial, corresponding with the sawmill location.

The waterfront site is zoned for heavy industry, and it is expected that heavy industrial use will continue through the long term.

[12]Clark County Shoreline Management Plan, Appendix D, BST Associates, page 35.

Figure C.2-5. Western Forest Products Construction Property

C.2.1.2 Overview of Land Use Regulations

The Vancouver Comprehensive Plan does not include goals or policies specific to marine uses or land uses that would support further development of marine uses.

Much of the zoning along the Columbia River east of the I-5 bridges is residential interspersed with parks and open space uses that host waterfront trails. Where there isn't a waterfront trail, some of the residences have private boat docks. The industrially zoned tax lots discussed above in the CBC and along other portions of the river appear, from aerials, to be largely developed and provide support to marine uses. However, this does not preclude them from being further developed or redeveloped for additional marine uses. The industrial zoning classification can accommodate a wide range of uses. Additionally, the City Center zoning classification allows marinas, and the residential zoning classification includes marinas as a conditional use.

C.2.1.3 Key Findings

There are four existing water-dependent industrial sites within the jurisdiction of the city of Vancouver, including CBC, Vigor, Marine Park marina, and the Western Forest Products property. It is likely that these areas will continue in industrial use. Only the uses at the CBC are currently height constrained. This is detailed in the main text of the NIR.

In addition, there are two marinas (McCuddy's Steamboat Landing Marina and Tidewater Cover Marina) and several private docks associated with private residences. These marinas typically serve smaller powerboats and sailboats (up to 40 feet) and are not known to be height constrained. However, some recreational boats may experience height constraints depending on the option under consideration (this issue is discussed in greater detail in Section 7.4.2 of the NIR).

Based on existing land use regulations, there are no vacant waterfront parcels that could be placed in industrial use.

C.2.2 Clark County, Washington (Camas)

The following section describes the existing and expected future land uses along the riverfront in the city of Camas in Clark County.

C.2.2.1 Existing Uses

The existing commercial/industrial waterfront uses in Camas include a paper mill, a marine fabricator, a marina, and a boat ramp.

Georgia Pacific Camas Mill

Georgia Pacific's Camas mill, which encompasses 660 acres (including Lady Island), produces paper towel products. In 2018, Georgia Pacific reduced its operations at its facility in Camas. Georgia Pacific is demolishing 11 buildings in the Camas Business Center[13]. The sites listed below are reported as no longer supporting site operations and are currently not in use:

- A chip unloading dock that was used to receive hogged fuel and wood chips that are transferred via conveyor to an open storage area. Chips are also received by truck and rail. This dock is listed as 360 feet long with water depth of 12 to 15 feet at MLLW.
- A log lift that was used as a storage area for log rafts. This facility extends along both sides of Camas Slough and along the right bank of Columbia River to a point approximately 2.5 miles below the log lift; rafts being secured to timber and steel piling. This site is listed with water depth of 7 to 10 feet at MLLW.
- A petroleum receiving dock with a pipeline that extends from the wharf to storage tanks.
- The shipping dock has been used in the past to ship products by barge This dock is recorded as 366 feet long with a water depth of 12 to 15 feet at MLLW. There is a 30,000-square-foot warehouse located near this dock.

The Georgia Pacific site will likely be evaluated for changes in comprehensive plan designations, zoning, and shoreline designations as part of future updates to planning documents for Camas.[14] However, the Georgia Pacific site is height constrained by the bridges on U.S. 14 that provide access to Lady Island at Camas. The upstream span is fixed with a vertical clearance[15] of 37 feet and the

[13] Clark County Shoreline Management Plan, Appendix D, BST Associates, page 40.

[14] Personal conversation with Sarah Fox, Senior Planner Camas City Planner, City of Camas, August 2, 2021.

[15] National Oceanic and Atmospheric Administration chart 18531, Edition 24, December 2017.

downstream span is fixed with a vertical clearance of 69 feet. These clearances are less than the heights of the proposed I-5 bridge.

Figure C.2-6. Georgia Pacific Camas Mill

City of Camas Ramp

The city of Camas owns a boat ramp located just to the south of their sewage treatment plant that has been leased to Mark Marine Service for more than 25 years. Mark Marine, which is engaged in marine construction, moors several company-owned vessels and barges at the site. The city is renewing the lease of the property for an additional five years.[16] There are no plans to improve the site. The city may consider using this site for another purpose (public access) in the future; however, changing uses would depend on future planning and funding for the proposed project. As a result, this site should be considered industrial use for the long term. Mark Marine was contacted as part of the river user survey and vessels are addressed in the main body of the NIR.

[16] Personal conversation with Sam Adams, Utility Manager, City of Camas, July 19, 2021.

Figure C.2-7. City of Camas Slip

C.2.2.2 Overview of Land Use Regulations

Much of the zoning along the Columbia within the jurisdiction of Camas is heavy industrial, but this is dominated by the Georgia Pacific paper mill. Other heavy industrial zoned lots appear to be undeveloped. The heavy industrial zoning classification includes boat building, boat repair and sales, metal fabrication, and assembly as uses permitted outright. The Camas Shoreline Master Program provides several economic policies in support of ensuring that land adjacent to the Columbia River is used for water-related uses, as provided below.

Shoreline Master Program Economic Development Element 3.5.2:

- Policy 3: New water-oriented industrial, commercial, and resource-based activities that will not harm the quality of the site's environment, adjacent shorelands, or water quality are encouraged along the shoreline. Limit or discourage uses that are nonwater-oriented and are not accessory to a water-oriented use.
- Policy 4: As an economic asset, the recreation industry should be encouraged along shorelines in a manner that will enhance the public enjoyment of shorelines, consistent with protection of critical areas and cultural resources.

However, according to the Trails and Open Space Plan, much of the area zoned heavy industrial area is identified as part of a proposed open space network, which includes a riverfront trail.[17]

C.2.2.3 Key Findings

There are two existing water-dependent industrial sites within the jurisdiction of the city of Camas, including the Georgia Pacific paper mill and the Camas boat ramp. It is likely that both sites will remain in industrial.

Based on existing data and plans, it is anticipated that there will be no additional industrial uses developed in Camas. The heavy industrial zone does allow for some marine generating uses to be permitted outright.

The Georgia Pacific paper mill cannot be constrained by the proposed bridge because it already has a height constraint imposed by the bridges that connect U.S. 14 to Lady Island. Mark Marine Service vessels are addressed in the main body of the NIR.

C.2.3 Clark County, Washington (Washougal)

This section describes the existing and expected future land uses along the riverfront in the city of Washougal in Clark County.

C.2.3.1 Existing Uses

The existing waterfront sites on the shoreline of the city of Washougal include the Port of Camas-Washougal Marina, the Port of Camas-Washougal Sixth Street property, and the Port of Camas-Washougal Industrial Park (near the waterfront but not water-dependent).

Washougal Waterfront

The Washougal Waterfront consists of the Port of Camas-Washougal's Marina and Sixth Street property.

The Port of Camas-Washougal Marina has 356 moorage slips, ranging in length from 20 feet to 55 feet. Most of the moorage is covered and can only be used by powerboats, which do not have a height constraint. There are a few open slips that used by sailboats, which can be height constrained. In

[17] https://www.cityofcamas.us/sites/default/files/fileattachments/parks_and_recreation/page/18859/appendix_c_-_maps.pdf.

addition to the leased slips, the marina has 1,200 linear feet of transient moorage. The port also has a four-lane launch ramp with attendant floating docks.

The site of the former Hambleton Lumber Company, which consists of approximately 25 acres, is located directly east of the port's marina. In 2012, Killian Pacific purchased the 25 acres, of which 13.25 acres is now owned by the port.[18]

The Sixth Street property, which includes around 14-acres, is located just east of the former Hambleton Lumber site.

Figure C.2-8. City of Washougal Waterfront

The Port of Camas-Washougal, in conjunction with a private developer (Killian Pacific), is seeking to redevelop the Washougal Waterfront. The site, Waterfront at Parker's Landing, will remain zoned as highway commercial and would be developed into a mixed-use waterfront project, featuring 13 mixed-use buildings (condos, offices, retail, and restaurants) as shown in Figure C-7.[19] There are currently no marine activities besides the marina at the Washougal Waterfront.

[18] https://parkerslandingwaterfront.com/.

[19] http://portcw.com/index.php/projects/waterfront_revitalization/.

Figure C.2-9. Washougal Waterfront at Parker's Landing Proposed Master Plan

Port of Camas-Washougal Steigerwald Commerce Center

The Port of Camas-Washougal began development of the 310-acre Washougal Industrial Park in 1970. The industrial park has grown in use and currently averages above 90% occupancy rate[20]. To provide additional land for industrial development, the port is planning an area of undeveloped property east of and adjacent to the industrial park. The Steigerwald Commerce Center includes approximately 122 net acres.

The property is zoned as heavy industrial and entirely within city limits. Adjacent properties are designated as heavy industrial, industrial, and parks/open space.

A levee separates the industrial park from park and public access along the shores of the Columbia River. The levee presents significant engineering, procedural, and land ownership challenges to providing access to the Columbia River. In addition, the navigation channel is distant from the shoreline with shallow water providing a challenge to access for vessels. There are no users within the industrial park that use the Columbia River for navigation purposes, and there are no marine facilities associated with the industrial park.

[20]https://portcw.com/property/steigerwald-commerce-center/.

Figure C.2-10. Port of Camas-Washougal Industrial Park and Steigerwald Commerce Center

C.2.3.2 Overview of Land Use Regulations

The Washougal Comprehensive Plan Update (2016) does not include goals or policies specific to marine uses or land uses that would support further development of marine uses. It does have goals and policies related to increasing public access to shorelines for recreational purposes (parks and open space, Goal 4).

A large portion of Washougal's waterfront is zoned parks/open space, starting from the eastern edge of the urban growth boundary until 22nd Street. West of the open space is primarily residential and town center–core designations. Industrial uses abut the parks and open space to the north.

Selected goals of the Port of Camas-Washougal's to promote industrial development include:[21]

[21]https://mrsc.org/getmedia/d828a5e7-5a9f-43ca-b25b-27e71ff42596/s77p6c3w36CompScheme.pdf.aspx.

- Goal 2: Improve local economic opportunities by supporting the retention, expansion, and recruitment of preferred employers.
- Goal 3: Promote sustainable community prosperity by ensuring an ample supply of land, infrastructure, and facilities to meet the needs of potential employers.
    - Strategy 3.1 Maintain an ample supply of land and incubator space to meet the needs of preferred employers.
    - Strategy 3.2 Acquire additional property (that meet certain criteria).
    - Strategy 3.3 Consider the sale of property when doing so would better advance Goal 2.

Selected goals of the Port of Camas-Washougal's also promote mixed-use commercial development along the Washougal Waterfront, including:

- Goal 4: Lead a collaborative effort to develop a more vibrant, economically viable, and publicly accessible Columbia River waterfront.
    - Strategy 4.1 Work collaboratively with property owners, the public, and the Port's agency partners to develop a master plan for the future development and redevelopment of the Columbia River waterfront property for the area within the Port District. The master plan should provide sufficient flexibility to attract a range of employers.
    - Strategy 4.2 Prefer land uses and employers on the waterfront, that are water-dependent, -oriented, or - related.
    - Strategy 4.3 Manage marina operations, capital facilities, and lands in a manner that strives to generate sufficient revenues to offset marina operating expenses.
    - Strategy 4.4 Strongly support the provision of continuous public access along the Columbia River shoreline.
    - Strategy 4.5 Maintain Captain William Clark Park, the Parkersville Historic Park, Marina Park, and the boat launch facility as public recreation areas.

C.2.3.3 Key Findings

The Port of Camas-Washougal's Marina will remain an integral part of the Washougal Waterfront. Most of the moorage slips are covered and are not affected by height constraints from the proposed I-5 bridges. There may be use by sailboats at the marina that are height constrained, but most of the sailboat use is limited to boats up to 55 feet long, which would not be height constrained by the options under consideration. The port also has a four-lane launch ramp with attendant floating docks.

However, the use of the boat ramp is generally by trailer-carried powerboats, which are not height constrained by the proposed bridge.

Industrial development in Washougal is centered in the Port of Washougal's industrial properties at the eastern edge of the city. The heavy industrial zoning designation allows uses that are permitted outright, such as bulk petroleum product terminals, plants, and storage facilities, which could generate marine traffic. However, the levee and recreation areas and trails that parallel the river create a buffer that inhibits marine uses along the riverfront in Washougal. Based on these conditions future marine facilities or activities are unlikely.

C.2.4 Skamania County, Washington

This section describes the existing and expected future land uses along the riverfront in Skamania County.

C.2.4.1 Existing Uses

Commercial/industrial waterfront properties in Skamania County include two former mill sites and property owned by the Port of Skamania County.

Stevenson Co-Ply Property

The Stevenson Co-Ply mill property, owned by Mountain View Property, was formerly owned by Wilkins, Kaiser & Olsen Inc. (WKO) and ceased operations in 1992.[22] The site has approximately 26 acres of uplands and is located inside the urban growth area of the city of Stevenson, but outside the city limits. It is zoned industrial (MG) by Skamania County. After its destruction by a fire in 2007. the site has been idle, and there are no current plans to redevelop this site. There are no marine facilities.

[22] Skamania County, Washington, MapSifter. https://skamaniawa-taxsifter.publicaccessnow.com/.

Figure C.2-11. Stevenson Co-Ply Property

Stevenson Waterfront

The vision for development on the Stevenson Waterfront, which includes Stevenson Landing, the Tichenor Building, and the Cascade Boat Launch, is based on fostering an active waterfront for recreation, a healthy economy, and a high quality of life.

Stevenson Landing, which is owned by the Port of Skamania County, is a cruise ship pier located on the Columbia River at river mile 150 of the Columbia River. The pier is 200 feet long, 15 feet wide and has a 55-foot-by-6.5-foot adjustable steel gangway. There are three sets of dolphins centered on gangway at various locations to allow for a range of docking possibilities. Cruise lines calling at Stevenson Landing include American Cruise Lines. American Queen Steamboat Company vessels used by these entities are addressed in the main NIR.

The Port of Skamania owns the Tichenor Building, which is located just upriver of Stevenson Landing and offers 29,000 square feet of flex-industrial space. It was built in 1992 and has experienced a successful transition from dependence on the forest products industry to a more diverse offering, serving a mix of light industrial and professional services. The Tichenor Building takes advantage of the views and amenities of the Columbia River, but it does not have facilities for water access for water-dependent businesses.

The Cascade Boat Launch is located in downtown Stevenson on the waterfront just east of the Tichenor Building. Trailer-carried power and sail boats and hand-powered craft use the boat launch. These craft are not height constrained and would likely be used locally and not transit through the IBR program area.

Figure C.2-12. Stevenson Waterfront

Home Valley

High Cascade Veneer (a subsidiary of WKO) began operating out of the former Stevenson Co-Ply peeler plant in Home Valley in the 1990s. The mill is no longer active, but WKO uses the property for storing lumber.[23] The site includes approximately 94 acres of upland area. The facility includes a barge dock, but the state of repair is unknown and access may be restricted by shoaling associated with the Wind River.

[23] Personal conversation with WKO Sawmill, July 20, 2021.

Figure C.2-13. Home Valley

Broughton Landing

The Broughton Lumber Company, which is located just west of Underwood, ceased operations in 1986 and has remained idle since. However, a plan was developed to create a destination resort called Broughton Landing. The property includes approximately 60 acres, and is inside the NSA of the gorge but outside any urban growth area. The plan calls for "a new resort comprised of approximately 250 new vacation homes, recreational amenities and retail areas serving resort guests, locals and visitors alike."[24] In 2008, petitioners appealed the decision to amend the plan allowing for this development. Ultimately, the court of appeals upheld the decision, but the proposed development has not progressed since this decision. Broughton Landing is divided by the railroad and State Route (SR) 14, creating three distinct sections. Most of the site does not have river frontage except a small portion on the far west side. This area, called Broughton Beach, is approximately 2.3 acres and is zoned for commercial recreation. The Broughton Landing Master Plan has a proposal for a pedestrian bridge spanning SR 14 and the railroad tracks to connect the beach area to other portions of the site. The site does not have any marine facilities and is unlikely to be developed for marine-dependent uses beyond recreational uses.[25]

[24] http://www.broughtonlanding.com/Overview/.

[25] Broughton Landing Master Plan, http://www.broughtonlanding.com/Documents_PDF/.

Figure C.2-14. Broughton Landing

C.2.4.2 Overview of Land Use Regulations

The Skamania County 2007 Comprehensive Plan Final does not include goals or policies specific to marine uses or land uses that would support further development of marine uses.

North Bonneville's riverfront is largely reserved for recreational uses or is under federal ownership because of the dam. Therefore, impacts to marine uses are not anticipated in this section of Skamania County.

However, in Stevenson, there are industrially designated lands identified along the southern portion of the riverfront (Stevenson Co-Ply). North of the industrial designations is a strip of commercial recreation, followed by commercially designated lots, one lot designated light industrial and then community commercial lots. Uses along the river include hotels, restaurants, and a kite-boarding school in the commercially zoned areas. The industrially zoned lots are used for timber-related activities. The entirety of Skamania County's southern border (approximately 90,204 acres)[26] is located within the Columbia River Gorge NSA. The NSA categorizes these areas into three categories: (1) urban areas, (2) special management areas, and (3) general management areas. Four urban areas, including North Bonneville, Stevenson, Carson, and Home Valley, are located within Skamania County. Urban areas within the NSA can grow over time and are the primary locations for any

[26] Skamania County 2007 Comprehensive Plan, https://www.skamaniacounty.org/home/showpublisheddocument/1385/637122005286830000.

industrial or commercial uses that require vessel traffic. The NSA Management Plan limits development outside of the urban areas while encouraging urban development to locate within these established urban designations.[27]

C.2.4.3 Key Findings

The industrial waterfront properties in Skamania County have been traditionally used by the forest products industry, including the mill sites at Stevenson, Home Valley, and Underwood. As the forest product sector declined, properties have been held by forest product firms for potential future reuse as a mill site or have been planned for redevelopment to resort or mixed-use properties. The proposed I-5 bridges do not impose a height constraint on shipping activities related to the forest products industry because log rafts or barges carrying logs, chips, or other forest products can easily pass under the bridges for destinations downriver of the bridges.

The Port of Skamania developed a business park, cruise terminal, and boat launch at Stevenson. The property at Stevenson Landing is on the waterfront and has a cruise ship dock but does not offer waterfront access for water-dependent firms requiring barge service. Within Stevenson, the movement is toward recreational waterfront with public access.

Potential impacts could occur from navigational height restrictions downstream affecting cruise vessels and sailboats. Impacts to vessels are addressed in the main body of the NIR.

The Port of Skamania County's other land holdings do not have direct access to the Columbia River (e.g., Cascades Business Park, the Lewis and Clark Business Park, and the Wind River Business Park).

C.2.5 Klickitat County, Washington

This section describes the existing and expected future land uses along the riverfront in Klickitat County.

C.2.5.1 Existing Uses

Klickitat County includes the small urban areas of Dallesport, Lyle, and Bingen.

[27] Management Plan for the Columbia River Gorge National Scenic Area, August 2016, http://www.gorgecommission.org/images/uploads/amendments/Management_Plan_(as_revised_through_2016).pdf.

Bingen

The SDS Lumber Mill and the Port of Klickitat County's Bingen Point Business Park are located in Bingen.

SDS Lumber Mill

The SDS Lumber Company mill site, located on the riverfront in Bingen, consists of approximately 170 acres (including uplands and in-water parcels). The mill produces lumber and plywood. The site includes a mooring area and approximately 30 acres of upland area for storage/staging of products. SDS can transload products from upland to barge, log yard, and ramp for raft/bundle preparation and load chips on barges.[28] It also has a construction fleet network with cranes up to 150 ton capacity. SDS vessels are addressed in the main NIR.

Figure C.2-15. SDS Lumber Mill

Bingen Point Business Park

The Port of Klickitat's Bingen Point Business Park, which is located just east of the SDS lumber mill, has 52 acres at Bingen Point available for light industrial and commercial uses. Bingen Point Business Park does not have direct access to the waterfront. Some of the key tenants at the business park are Insitu Group, Inc., which produces miniature unmanned aerial vehicles for military and commercial applications, and Zepher, a manufacturer specializing in defense and autonomous systems. There are no marine facilities or water-dependent tenants.

[28] SDS Lumber Mill. http://sdslumber.com/.

Figure C.2-16. Port of Klickitat Bingen Point Industrial Park

Bingen Marina

The Port of Klickitat owns the Bingen Marina, which includes a two-ramp boat launch, restrooms, and a parking area for boat trailers. Plans call for the development of additional facilities, including transitory and long-term moorage, a fuel dock, a pump-out facility, and other amenities.[29]

[29] http://www.portofklickitat.com/recreation/marina.asp.

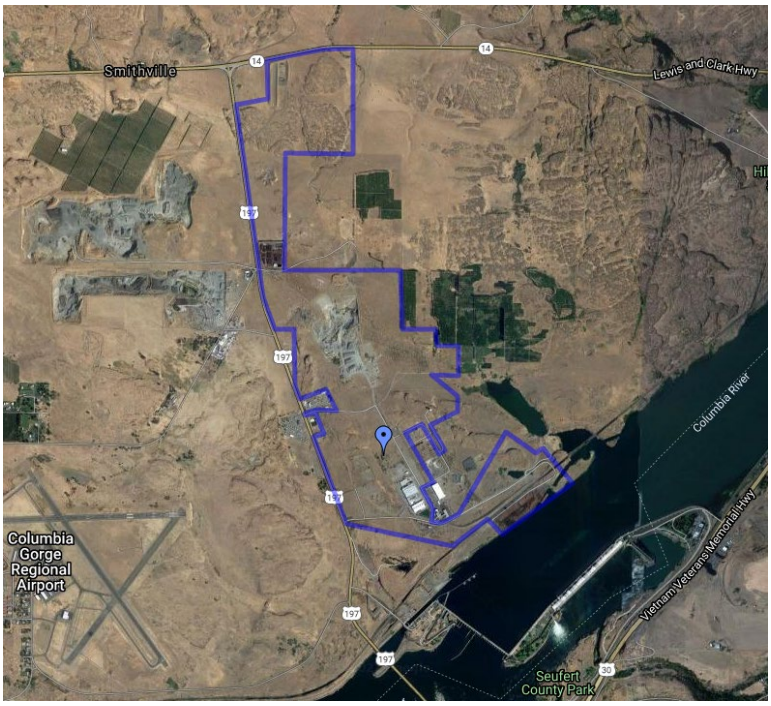
Figure C.2-17. Port of Klickitat Bingen Marina

Dallesport

The Dallesport Industrial Park is owned by the Port of Klickitat and covers approximately 660 acres east of U.S. Highway 197 and north of the Columbia River. Zoned for light and heavy industrial use, this site includes a barge terminal used for log exports immediately upstream of The Dalles Dam, which is operated by The Dallesport Log Yard. It was also used by an excursion boat that would tie up while passengers visited the Mary Hill Museum. However, this excursion boat activity has not occurred recently.[30] In addition, there is a privately owned property downstream of the dam that has dolphins and conveyor system for loading.

[30] PBPorts interview with Port of Klickitat.

Figure C.2-18. Port of Klickitat Dallesport Industrial Park



C.2.5.2 Overview of Land Use Regulations

The western portions of Bingen along Alpine Avenue are targeted for business, high technology, and light industry. The eastern portions along Parallel Avenue are targeted for moderate to heavy industry. Property north of Dow Road has been set aside for aggregate mining operations and future development. The Bingen Point Business Park is located along the Columbia River just outside Bingen, Washington, and across from Hood River, Oregon.

Waterfront zoning outside of White Salmon city limits includes suburban residential to the west and industrial park to the east in Bingen. From aerials, the industrial park area appears to be used for river-related and timber-related industry. Inside White Salmon, the western portion of the riverfront is designated as open space, and the eastern section is designated as the Riverfront Planned District. Not all the industrial lots are used for industrial activities; some are for residential uses, such as an RV park. Also, the railroad tracks constrain many of the industrial lots, making them shallow. Waterfront zoning in Lyle is almost entirely suburban residential.

The riverfront property in Lyle is undeveloped and the majority is owned by the Yakama Nation.

Zoning in Dallesport along the Columbia is almost entirely residential in the western portion with some areas of open space and industrially zoned areas to the east.

C.2.5.3 Key Findings

Most of the occupied industrial lots along the riverfront are used by the timber industry, which generates non-height-constrained cargoes (logs, wood chips, aggregates, etc.). The proposed bridge should not have any impacts to shipping related to the timber industry.

There are some undeveloped industrial lots along the river. Industrial park zoning allows for boat building, assembly, and fabrication of metal products and additional manufacturing uses as uses permitted outright. However, many of the industrially designated lots are limited by the railroad tracks that create shallow lots from the river, potentially limiting the possibility of large industrial structures on the site.

There are also vacant developable industrial lands at the Dallesport Industrial Park. However, the BNSF railroad right of way cuts through the property near the river, leaving a narrow band of land adjacent to the river that is currently used by a barge terminal. It is unlikely that future uses would be height constrained at this location.[31]

The aggregate terminal, approximately 2 miles east of Wishram, Washington, is operated by Pacific Northwest Aggregates, Inc., a produces sand, gravel, and other solid minerals used in road and other construction. The mining operations and marine facility operate on approximately 45 acres of Native American Lands property through a lease agreement. The facility includes a loading terminal used to load barges with material. Vessels transferring aggregates are addressed in the main NIR.

[31] Personal conversation with Mr. Marc Thornsbury, Executive Director, Port of Klickitat, September 11, 2012.

Figure C.2-19. Pacific Northwest Aggregates

C.2.6 Multnomah County, Oregon (Portland)

This section describes the existing and expected future land uses along the riverfront in Multnomah County in the city of Portland, upriver from the BNSF rail bridge.

C.2.6.1 Existing Uses

The portion of Portland east of the BNSF rail bridge has several waterfront uses, including marinas and houseboat communities.

Hayden Island to Government Island

There are several marinas and floating home communities in the area from east Hayden Island to Government Island, but there are no industrial uses on the riverfront east of the I-5 bridges up to the city of Fairview (see Section C.2.7).

C.2.6.2 Overview of Land Use Regulations

Zoning along the Columbia River east of the I-5 bridges is primarily open space that accommodates a riverfront multiuse trail. There are additional small pockets of residential zoning and areas of commercial zoning close to the bridges and on Hayden Island. There are two areas designated industrial: one on the south side of Hayden Island and one just north of 33rd Road and Marine Drive. The lots along Marine Drive are shallow in depth because they are between Marine Drive and the River. There are numerous private marinas, especially closer to the I-5 bridges. In addition, there are marine-related uses such as watercraft rentals and sales.

Manufacturing and warehouse and freight movement are permitted outright in the industrial zone.

C.2.6.3 Key Findings

There are many recreational marinas that are used by both powerboats and sailboats. Sailboats that are affected by the existing I-5 bridges generally had an air draft ranging from 50 to 90 feet, with an average of approximately 70 feet and are not height constrained by the replacement bridges. In 2012, there were only 48 sailboats that were 46 feet or longer that could be height constrained at 95 feet. Powerboats have an air draft that ranging from 20 feet to 25 feet and can use Oregon Slough, thus never requiring a bridge opening.

C.2.7 Multnomah County, Oregon (Fairview)

This section describes the existing and expected future land uses along the riverfront in Multnomah County in the city of Fairview.

C.2.7.1 Existing Uses

There are two barge terminal sites in Fairview.

CalPortland Blue Lake Aggregate Yard

CalPortland owns and operates the Blue Lake Aggregate Yard, a distribution facility that stocks crushed rock, washed rock, concrete sand, and dredged sand. The Blue Lake Aggregate Yard is barged to the terminal from other sites, unloaded, and then trucked to construction sites in northeast Portland.[32] The facility is served by tugs and barges that are addressed in the main NIR.

[32] CalPortland. https://www.calportland.com/locations/oregon/blue-lake-aggregate-yard/.

Figure C.2-20. CalPortland Blue Lake Aggregate Yard

Chinook Fairview – Sundial Chip Reload

Chinook Fairview owns the former Georgia Pacific West chip reload terminal in Fairview. The facility ships and receives chips by barge.

Figure C.2-21. Chinook Fairview Terminal

C.2.7.2 Overview of Land Use Regulations

Metro owns a large portion of land on the north side of Fairview, including Blue Lake Park, Chinook Landing Marine Park, and the Columbia River open space. Part of a 40-mile-loop trail is planned to go along the Columbia River in this area. There is also an area designated general industrial, and as noted above, there are two marine-development uses in Fairview.

The Fairview Comprehensive Plan (2004) encourages private landowners along the Columbia River to seek redevelopment options that would replace existing industrial operations with river- oriented recreational, residential, and commercial development. The plan also recommends working with Metro to expand or develop recreational and commercial services and facilities at Blue Lake Park.

C.2.7.3 Key Findings

None of the existing industrial uses in Fairview would be height constrained by the proposed I-5 bridge. Although Columbia River industrial uses are permitted outright in the industrial zone, the Fairview Comprehensive Plan identifies trail planning and recreational uses for this area.

C.2.8 Multnomah County, Oregon (Troutdale)

This section describes the existing and expected future land uses along the riverfront in Multnomah County in the City of Troutdale.

C.2.8.1 Existing Uses

There is one barge terminal site in Troutdale and one former shipyard.

Sundial Marine Tug & Barge Works

The Sundial Marine site was formerly used as a ship and barge building and repair facility. The marine infrastructure is not operational with the exception of a spud barge.[33]

Tidewater operated the Sundial Tug & Barge Works at this site from 1970 until early 2011, when it closed operations. Tidewater decided to close the facility because the repair and construction business is cyclical, and Tidewater elected to focus on its core businesses of barge transportation and terminal operations. The Hickey Family Company currently owns the site, and there are no known plans to redevelop it.

Figure C.2-22. Sundial Marine Tug & Barge Works

[33] https://www.deq.state.or.us/Webdocs/Controls/Output/PdfHandler.ashx?p=9d2d4d6e-f45c-4464-80c7-501c9a3b561c.pdf&s=Staff-report.pdf.

Knife River Corporation Aggregates Terminal

Knife River Corporation operates an aggregates terminal in Troutdale. The facility consists of a ready-mix concrete plant with a dock and conveyor for sand and gravel delivery by barge and unloading-related facilities.[34]

Figure C.2-23. Knife River Aggregates Terminal

Troutdale Reynolds Industrial Park

The Port of Portland developed the Troutdale Reynolds Industrial Park, which is located on a 700-acre former brownfield site of the former Troutdale Aluminum Smelter.

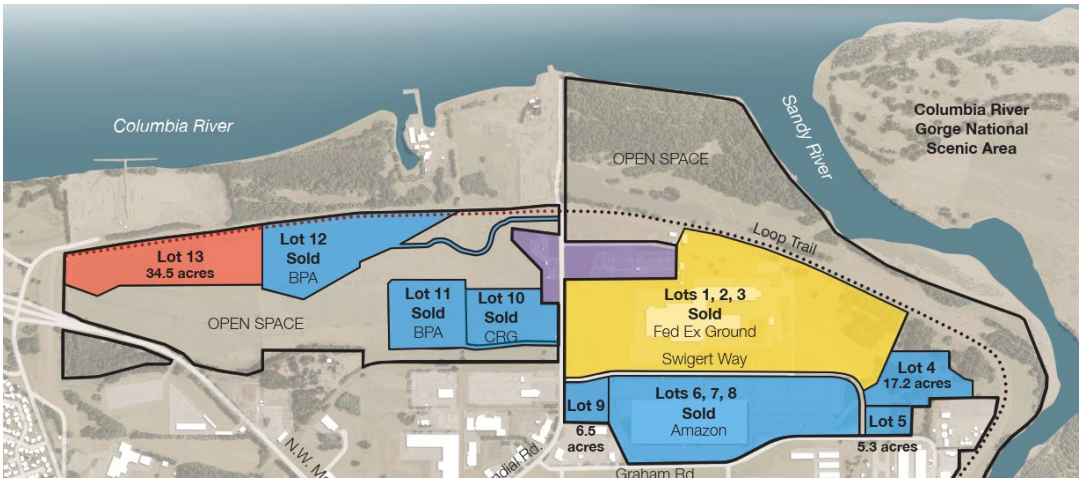
Key tenets of the industrial park are FedEx and Amazon.[35] This development will respond to the need for large parcels of industrial land in the region. However, the development is not water-dependent, and significant shoaling from the Sandy River delta would make development of marine infrastructure very difficult. The Columbia and Sandy Rivers are designated open as space by the Port of Portland's master plan.[36]

[34] Oregon Department of Environmental Quality Permit Evaluation and Fact Sheet, 3/28/2012. https://www.deq.state.or.us/wqpr/3819_2012040200772CS01.PDF.

[35] https://www.portofportland.com/trip.

[36] Ibid.

Figure C.2-24. Troutdale Reynolds Industrial Park



C.2.8.2 Overview of Land Use Regulations

Troutdale zoning along the river includes open space and general industrial uses. Some of the industrial lots are known to support uses that generate marine traffic. The general industrial designation allows for manufacturing, marinas, and marine industrial/marine service facilities to be permitted outright.

C.2.8.3 Key Findings

The industrially zoned sites generate marine traffic that primarily consists of tugs and barges, which are not height constrained. The Knife River terminal is not expected to change in the future. Sundial Marine is idle and could be sold or redeveloped. In either case, it is not expected that it will generate height constrained marine traffic.

C.2.9 Hood River County, Oregon (Cascade Locks)

C.2.9.1 Existing Uses

The Port of Cascade Locks operates an industrial park, marina, and a cruise facility.

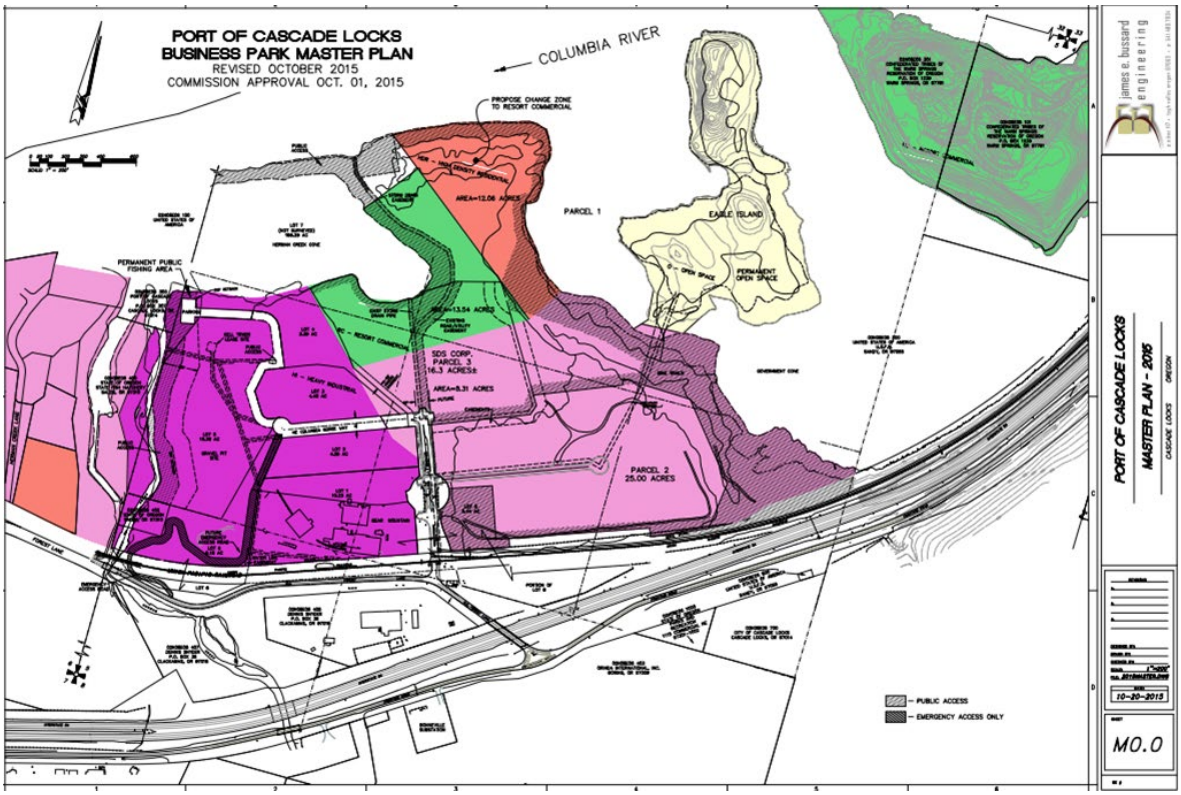
Port of Cascade Locks Business Park

As shown in Figure C.2-25, the Port of Cascade Locks Business Park (North Point, Herman Creek Cove, and Lower Bench) is approximately 191 acres. There are currently vacant acres at North Point (17. 6

acres), Herman Creek Cove (4.25 acres), and Lower Bench (3.7 acres). The port listed the possibility of the development of an additional marina facility that could be located at the industrial park.[37]

37 https://portofcascadelocks.org/documents/Final%20Adopted%20Port%20of%20Cascade%20Locks%20Strategic%20Business%20Plan%20December%202013%20sm.pdf.

Figure C.2-25. Port of Cascade Locks Business Park



Port of Cascade Locks: Herman Creek Business Complex

The Herman Creek Business Complex is located directly east of the business park and offers a variety of spaces for light industrial uses. The majority of the spaces advertised on the port's website are not available currently. There is no water access associated with the business complex.

Port of Cascade Locks Marina

The Port of Cascade Locks Marina has 36 slips. Cascade Locks is a well-established sailboat racing destination and is home to the Columbia Gorge Racing Association. The port identifies new recreational opportunities associated with sailing as part of their priorities in the 2016 Strategic Business Plan revisions, which may result in additional smaller, non-height-constrained vessels.[38]

[38] Ibid.

Figure C.2-26. Port of Cascade Locks Marina

Port of Cascade Locks Cascade Locks Marine Park

The *Columbia Gorge Sternwheeler*, which is owned by the Port of Cascade Locks and operated by the Portland Spirit, is docked in the Cascade Locks Marine Park from May to October. The vessel provides daily passenger excursions. There is also a visitor center in the Cascade Locks Marine Park.

Figure C.2-27. Port of Cascade Locks Marine Park

The port is working to further develop the northeast portion of the Marine Park to increase recreational opportunities. The improvements would enlarge the sailboat launching area, which currently hosts word-class sailing regattas.[39]

C.2.9.2 Overview of Land Use Regulations

Zoning along the Cascade Locks shoreline is largely open space to the west and heavy industrial, light industrial, public, resort commercial, and high on either side of Herman Creek. The eastern edge of the jurisdictional line is zoned resort commercial. The industrial designation allows manufacturing and production as a use that is permitted outright.

Within the urban area of Cascade Locks, the parcels zoned light industrial or heavy industrial are located at the northeast side of the city. There are two privately owned undeveloped heavy industrial zoned lots totaling 50 acres west of Herman Creek that are located on the Columbia River and are not constrained from water access by the railroad. Heavy industrial zoning could support land use activities that could utilize river navigation for receipt of raw material by water or shipment of finished goods. There is no marine infrastructure at the site with the exception of a series of dolphins that are of unknown condition and ownership. Steep slopes up to 60 feet in vertical relief are located along the river which would reduce the suitability of providing marine infrastructure to access the uplands.

There are three parcels identified by the Port of Cascade Locks for industrial development along the Columbia River. The three lots are zoned either light industrial, heavy industrial, high density residential, and resort commercial. Information from the Port of Cascade Locks stipulates that there

[39] https://portofcascadelocks.org/recreation-projects/

are sections of these properties available for rezoning. The Cascade Locks Resort and Casino is potentially planned for adjacent lots to the south.

Based on the port's website,[40] there is availability to construct an industrial park in this area with water access. Figure C.2-25 shows the lots along the river that area available for industrial development. Existing uses south of these lots include Bear Mountain Forest Products, which has been producing premium quality forest products in Oregon since 1988, and SDS lumber. The Warm Springs Resort and Casino was a planned development south and adjacent to the available industrial lots in this area but the status of this project is unknown.

C.2.9.3 Key Findings

There are undeveloped industrial lots along the river. These lots have been identified for potential development that would likely not generate marine traffic, including business parks and entertainment and recreational uses.

The Cascade Locks community is positioning itself as a sailboat racing destination. In general, there is a desire to attract the international sailing community, but the sailboats using this area are typically small and are not height constrained.

The Port of Cascade Locks also homeports the *Columbia Gorge Sternwheeler* during the tourist season, but this vessel is not height constrained by the proposed I-5 bridge options.

C.2.10 Hood River County, Oregon (Hood River)

C.2.10.1 Existing Uses

The Port of Hood River operates a Business Park, marina, and a cruise facility.

Port of Hood River Business Park

The Port of Hood River owns most of the waterfront properties in Hood River. The goal of the port's Waterfront Development Strategy emphasizes preservation of and support for local light industrial businesses. In addition to job retention and business development, other Waterfront Development Strategy goals include quality development in a collaborative process, and ensuring compatibility with existing and future recreational activities. There are no marine facilities and there is no direct access to the riverfront for barge or other terminals within the business park.

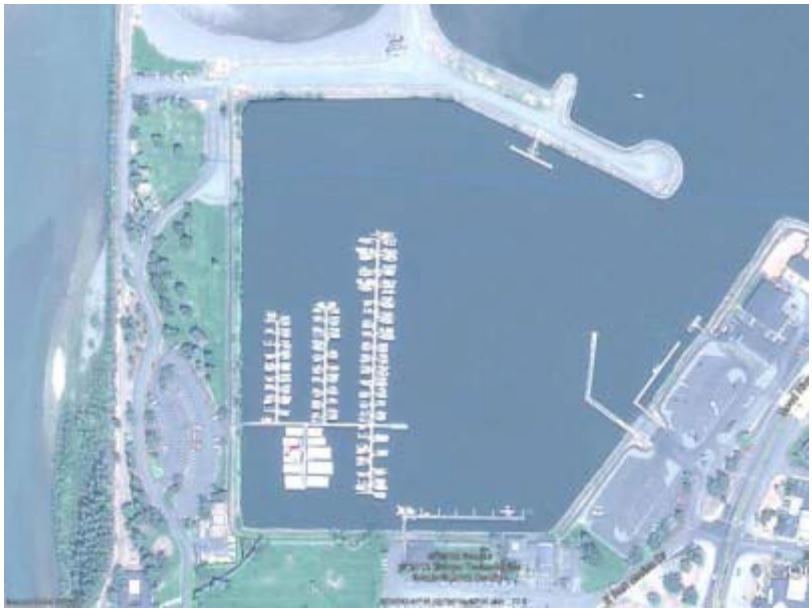
[40] https://www.portofcascadelocks.gov/properties

Figure C.2-28. Port of Hood River Business Park

Port of Hood River Marina Park

The port's marina offers moorage for over 160 vessels, with slip sizes ranging from 20 feet to 40 feet. The marina has a short-term transient dock available for travelers at river mile 169. The boats homeported or calling on a transient basis are typically less than 40 feet long, and as a result are not height constrained by the proposed I-5 bridge. Small cruise ship vessels that call Hood River in the spring and fall seasons, including: InnerSea Discoveries (*The Legacy*), Lindblad Expeditions (*Sea Bird* and *Sea Lion*), and Portland Spirit (*Columbia Gorge Sternwheeler*), among others. The dock on the north side of the marina is reserved for small cruise ship vessels. Vessels moored at the Port of Hood River are addressed in the main NIR. Other uses of the marina include kayaking, small sailing craft, community education sailing classes, and Hood River Yacht Club activities.

Figure C.2-29. Port of Hood River Marina



C.2.10.2 Overview of Land Use Regulations

Zoning along the Hood River shoreline consists of open space, Columbia River recreation/commercial, and light industrial. The eastern edge of the jurisdiction along the shoreline and directly adjacent to the Hood River bridge is general commercial zoning. The city of Hood River defines light industrial as industrial service (e.g. corporate laundry and cleaning, etc.), research and development, manufacturing, processing, fabrication, packaging, assembly of goods, and warehousing. The use of Columbia River recreation/commercial zoning along the shoreline is intended to be consisted with visual and pedestrian access to the area. The Union Pacific railroad tracks run along the river, creating a barrier between the river and uses on the other side of the river. Past the railroad tracks (inland) are various uses, including general commercial, urban low density, open space, industrial, and light industrial. There are several light industrial parcels that abut the river, such as along Portway Avenue.

C.2.10.3 Key Findings

In the Port of Hood River area, the emphasis is on recreational development and business park development rather than marine-based industrial.

The cruise ships that call or could call on Hood River are addressed in the main NIR.

The sailboats homeported in Hood River or calling on a transient basis at Hood River are typically less than 40 feet long, and are not height constrained by the proposed I-5 bridge.

There are no known existing or future activities that would be height constrained in Hood River.

C.2.11 Wasco County, Oregon

Wasco County waterfront facilities are located at The Port of The Dalles.

C.2.11.1 Existing Uses

Waterfront uses include two barge terminals and a marina.

Bernert Barge Lines provides barge towing for the transport of commodities and containers on the Columbia, Snake, and Willamette Rivers. Bernert maintains a maintenance and fabrication facility in The Dalles that has a dock, crane, and shop with capabilities for marine repairs and general metalworking.

Mid Columbia Producers is a farmer-owned cooperative serving the grain producers of the mid-Columbia region. The cooperative owns offices and grain elevators on the riverfront where barges are loaded with wheat for transit downriver, primarily for export.[41]

The port sold all its developable land, with the exception of one 85 acre tract adjacent to the Columbia River. The port developed the site into the Chenoweth Business Park. None of the sites within the business park has water access and a waterfront trail is located between the lots and the river.[42]

Figure C.2-30. Barge Terminals in The Dalles

Port of The Dalles Marina

The port's marina has space for 62 boathouses and approximately 30 open moorage slips.[43] A boat launch is located adjacent to the marina to allow for easy haul outs with trailers. The marina provides a variety of services (fuel, power, public restrooms, picnic facilities, boat holding tank pump-out and potty dump station). The Dalles Yacht Club is located at the marina.

[41] Port of The Dalles Strategic Business Plan, https://www.portofthedalles.com/files/405660130/2013+Port+of+The+Dalles+Strategic+Plan.pdf

[42] Port of The Dalles Strategic Business Plan, https://www.portofthedalles.com/files/405660130/2013+Port+of+The+Dalles+Strategic+Plan.pdf

[43] Source: Port of The Dalles https://www.portofthedalles.com/the-marina.

Figure C.2-31. Port of The Dalles Marina

The Dalles Commercial Dock and Lewis and Clark Festival Park

The floating dock serves transient recreational boats, and the fixed pier serves cruise ships, similar to the vessels calling at Hood River.[44]

Figure C.2-32. The Dalles Commercial Dock[45]

[44] http://www.ci.the-dalles.or.us/node/99.

[45] Ibid.

Former Northwest Aluminum Site (3313 W 2nd St.)

The Northwest Aluminum smelter ceased operations in 2000 and cleanup operations were largely completed by 2007. The site, which is approximately 120 acres and undeveloped, is now planned for commercial and industrial development. This site is not located on the river.

Figure C.2-33. Former Northwest Aluminum Site (3313 West 2nd Street)

C.2.11.2 Overview of Land Use Regulations

The western shoreline of The Dalles has a significant amount of industrially zoned land along the riverfront. This designation includes shipyards and commercial docking facilities as use is permitted outright. In addition, manufacturing and fabricating are uses permitted outright. There are also pockets of commercial recreation and general commercial along the river. Some of the industrial sites support marine traffic generating uses.

The Dalles Comprehensive Land Use Plan, Volume I (May 23, 2011) specifies that riverfront property should be reserved for riverfront use (Goal 8) and that there should be provisions to accommodate future barge traffic (Goal 12).

C.2.11.3 Key Findings

In the western portion of The Dalles, there are numerous industrial lots along the river, some of which support industrial, marine-dependent uses. The lots could be redeveloped for marine-related. Closer to downtown, the tourism and recreation industry is anticipated to generate increased marine traffic.

A 2011 planning study[46] found that there is a shortage of commercial lands in The Dalles: "In order to capitalize on long-range economic and employment shifts, The Dalles will need to add to its existing supply of land for commercial uses within the urban growth boundary. Similar conversions of port industrial lands along the riverfront can produce a mixed-use area to accommodate a slightly different market, including freeway commercial and recreational users."

Although current marine facilities in The Dalles do not have the capacity to support deep-draft vessels it is possible for them to reach the area as shown by past activities. The deep-draft navigation channel authorized by the U.S. Army Engineers terminates in The Dalles, but it is only maintained to a depth of 17 feet. Some deep-draft navigation has occurred in the past. One example being in 1938 when the freighter the *SS Charles L. Wheeler Jr.* became the first deep-sea vessel to travel past the Bonneville Dam up to The Dalles but deep draft navigation has never occurred on frequent basis to the Dalles.[47]

None of the planned development options in The Dalles would serve or require vessels that would be constrained by the bridge height.

C.3. ANALYSIS SUMMARY

The project extent from the BNSF rail line in Vancouver to the Celilo Falls BNSF bridge covers a large portion of the Columbia River but overall few properties exist that currently have marine facilities available or have the potential for future facilities. The findings above highlight the political and geographic constraints the Columbia River waterfront has including:

- Columbia River Gorge NSA Designations
- Parallel transportation routes (SR 14, I-84, Union Pacific and BNSF railroads)
- Steep Topography
- Existing recreational and open space uses

Primarily industrial uses that generate or would generate marine vessel traffic are located within urban areas and typically within established industrial parks (e.g., CBC, Port of Cascade Locks Industrial Park). There are no known planned developments within the study area that would create additional navigation activities that would be impacted by the proposed bridge heights studied in the main body of the report.

[46] The Dalles Comprehensive Land Use Plan, prepared by Winterbrook Planning, May 2011, Page 29

[47] https://historylink.org/File/9883.