

Summary and Takeaways of Technical Studies

As mentioned above, this project has included a considerable amount of background research and the production of several studies. In addition to the foundation studies for Phase I, below is a summary of staff and consultant work that is being used to help inform this proposal, along with some key 'takeaways' from each study.

Consultant Studies:

Concept Planning: Worley Parsons developed a concept plan for West Hayden Island based upon the City Council resolution to protect at least 500 acres as open space and allow marine terminal development on up to 300 acres. This concept serves as a planning basis to draft zoning recommendations and an annexation agreement for Planning & Sustainability Commission and council consideration.

Key takeaways from the Base Concept Plan include:

- It is possible to fit a rail loop for 10,000-foot long unit trains within the 300 acre footprint.
- The concept plan includes three marine terminals (processing autos, grain, and dry bulk) and two dock facilities.
- The facility can meet the acreage and dimensional parameters within the Council resolution.
- The concept plan preserves large areas of the island for natural resource protection and enhancement.
- The concept plan allows for access to either be from a new bridge from Marine Drive, or from an extension of North Hayden Island Drive.

Harbor Lands Analysis: The study reviews the most recent Cargo Forecasts done for the Portland Harbor to determine the potential need for marine terminal land and considers the redevelopment potential of certain sites along the Portland Harbor for future Marine Terminal use. In addition, the study determines whether the Port of Vancouver may have excess capacity to absorb additional demand, and analyzes ways to measure industrial land efficiency along the harbor lands. Key takeaways include:

- There are two sites in the Portland Harbor that may include enough vacant land (Time Oil and Atofina sites). Both sites would require the acquisition of additional land, and both have infrastructure and contamination issues that could be barriers to development. Neither site meets the dimensional requirements for modern "unit train" rail access.
- The Bureau of Planning and Sustainability has completed a number of inventories of vacant land in the Portland harbor, which are summarized in the ECONorthwest report. The effective supply of land in the Portland harbor is 50 to 174 acres. The range reflects the outcomes of several different studies, with a range of assumptions about how "vacant" is defined, and how constraints may impact the effective use of land - such as contamination, and environmental resources.
- The number of new marine terminals necessary to meet these capacity shortfalls varies based on the commodity type, and assumptions we make about terminal size. The ECONorthwest report summarizes that information. They estimate that between 51 and 1,457 acres of land will be needed to meet projected demand for new marine



terminals through 2040. Assuming the middle of the forecast range, the need is estimated at 570 acres.

- The Port of Vancouver has about 350 acres of vacant land in reserve for future marine terminal growth. ECONorthwest estimates that the regional need for new marine terminals will be 570 acres through 2040 (assuming the mid-range in the cargo growth forecasts). Unless cargo volume growth is on the low end of the expected range, there is not enough land in Vancouver to meet the regional need by itself.

Costs and Benefits Analysis: The study considers the benefits and costs that may accrue to the public over time if West Hayden Island is developed in accordance with the Concept Plan. This is compared with a baseline (no build) scenario. Key takeaways include:

- The report considers the effects of the development scenario with the baseline scenario on natural resources, recreation, local impacts and port economics (expressed in terms of 100-year Net Present Value).
- Development would reduce the value of the ecosystems services provided by WHI natural resources by \$4.5 to \$11.5 million (100-year NPV).
- Anticipated mitigation is estimated to cost \$24.5million (including operating/maintenance costs), and creates \$1.9 to \$5.9 million of ecosystem services lift (100-year NPV).
- Development creates between \$1.5 and \$5.0 million in additional recreational benefits (100-year NPV).
- Recreational improvements shown in the concept plan may cost between \$2.4 and \$5.3 million (including operating/maintenance costs) (NPV).
- Traffic, air quality, light and noise were identified as impacts that have been known to have economic effects or effects on property values. For example, air pollution costs associated with traffic may range from \$.02 to \$.04 per vehicle mile traveled. Port-related rail traffic might have a one-time impact on the property values for homes within 275 meters of the development. Given the number of homes in that zone (8), they quantified this impact as \$33,440. They estimated the cost of traffic-congestion related impacts as \$23,500 annually. The report cautioned that these are illustrative examples, and recommended additional work to evaluate health impacts via a Health Impact Assessment.
- Port operations would need to generate at least \$5.5 million in net economic benefit per year to produce a sufficient level of benefit to offset the expected local costs.
- This amount of benefit is a fairly small portion of the potential job and income amount that the port would generate overall - for example experts estimate 2,300 to 3,600 jobs could result from development of a marine terminal on WHI. This includes direct jobs, induced jobs and indirect jobs. Together, these jobs could generate \$200 to \$300 million in personal annual income, and \$18 to \$30 million in annual state/local tax revenue (in Oregon and Washington).

Staff Work

Hayden Island Natural Resource Inventory (NRI): This work includes updating an inventory of existing natural resources for all of Hayden Island as well as the south bank of the Oregon Slough. This work provided natural resource background data for the concept planning and ESEE work. Key takeaways include:



- West Hayden Island is a mosaic of features including forests, woodlands, grasslands, wetlands, open areas and shallow water area that function together as one habitat unit.
- Its location at the confluence of the Columbia and Willamette Rivers and on the Pacific Flyway for migrating birds is unique in the region.
- Over 200 wildlife species, included federally-listed fishes, use WHI and the surrounding Columbia River
- Although impacted historically by agricultural activities and on-going dredge material placement, all of WHI is a high-ranked riparian corridor and wildlife habitat area.

Economic, Social, Environment and Energy (ESEE) Analysis: This analysis identifies the range of positive, negative, mixed and neutral consequences of allowing, limiting, or prohibiting industrial, recreation, and open space uses on WHI. Key takeaways include:

- This trade-off analysis arrays the consequences and produces a recommendation for the decision makers to consider.
- The recommendation is made within the context of local, regional, state and federal regulations, goals and policies.
- The recommendation is to limit development of WHI to approximately 300 acres of marine terminal uses:
 - o allow marine terminal development on land within the IH zoned areas,
 - o limit in-water development of docks,
 - o limit recreation to areas east of the BPA powerlines, and
 - o require mitigation for impacts to resources within open space areas.

WHI Recreation Analysis: This memo draws on previous recreational work done for the Hayden Island plan and ENTRIX in phase 1 of this project. The memo identifies local recreational needs, opportunities to meet those needs on West Hayden Island, or on property just east of the railroad and ways to reduce the negative impacts between recreation and natural resources and recreation and marine terminals. Key takeaways include:

- Previous studies and planning processes indicate that Hayden Island is deficient in public recreation facilities.
- Low-impact recreation opportunities on West Hayden Island, must be sensitive to the existing natural resource function.
- The base concept plan provides opportunities for low impact recreation such as trails, potential non-motorized boat launches and wildlife viewpoints.

Regulatory Requirements Analysis: This report reviews federal, state, regional and local environmental regulations and policies that could affect future development of WHI. Examples include Endangered Species Act, Clean Water Act, and Environmental Protection Agency's Strategic Plan for the Columbia River, the State's Estuary Partnership Management Plan and Federal Emergency Management Agency requirements. Key takeaways include:

- There are several overlapping regulations and policies that address natural resources on WHI. Specific regulatory requirements are difficult to predict until there is a specific proposal.
- State and federal regulations apply to in-water resources and the floodplain. Other resources, such as forests and grasslands, are not regulated at the state or federal level, but can be regulated at the local level.



- The final base concept plan, if developed as shown, would require mitigation, both on- and off-island to achieve no-net-loss of ecosystem functions. This mitigation is above what would be required solely through existing regulations.
- There are different areas off-site that could receive compensatory mitigation. The port is proposing work on Government Island.

Analysis of Vancouver Port Coordination: This analysis looks at advantages and opportunities for increased coordination between the Port of Portland and Port of Vancouver as well as some research on interstate Port Authority logistics. Key takeaways include:

- Formal and informal coordination has increased more recently among the ports. One example is the deepening of the Columbia River.
- Greater coordination and/or sharing of operations may be possible if both parties agree to the benefit.
- Creation of bi-state, joint port authorities require an arduous process involving both state governments and an act of Congress. NY/NJ is the only current example related to marine ports.

Land Management Options: This analysis discusses options for how natural resource lands could be managed over the long term, including proposals for long term ownership, and strategies to pay for land mgmt activities. Key takeaways include:

- There are several options for long term ownership and maintenance, but port mitigation activities may be best on port-owned property.
- Creating a master plan for the on going management of the natural resources and recreation areas is important to achieve long-term goals.
- A financing strategy is important to get up front, through the use an agreement to ensure adequate funding in the future.

North Portland Rail Study Analysis: This analysis reviewed previous rail and freight studies with an emphasis on reviewing congestion issues within the rail corridor in North Portland, Vancouver and the bridge, and summarized the recommendations from these reports for improving efficiency. Key takeaways include:

- There are several studies that have considered congestion issues along the rail lines (BNSF & UP) in North Portland. Most expect congestion to increase.
- Speed limitations on either side of the bridge are a greater impediment to efficiency than the bridge itself. Track improvements that increase the speed of freight trains in the vicinity of North Portland and Peninsula Junction would provide benefit to both freight and passenger trains.
- Long term goals to accommodate high-speed passenger rail would require large-scale improvements made to the entire line, including the potential for a dedicated track along the entire corridor.

Transportation Modeling Analysis (produced by PBOT): Phase I of this transportation analysis was conducted for what was determined to be a reasonable high impact traffic generation scenario for a 300 acre Port development site that includes two auto import terminals and one bulk marine facility on WHI. Phase II provided a detailed operational level analysis at the intersection level. Key takeaways:



- The high impact scenario was modeled with and without a WHI bridge, using the Hayden Island Neighborhood plan future street network and the CRC Option D interchange design
- The high impact scenario generates up to 2,050 daily vehicle trips, including 516 trucks. PBOT report explained that 12% of the 2035 Hayden Island traffic would be attributable to the Port development. This number is the average Port impact on all the different links in the model that was studied on Hayden Island. This modeling number is useful only as a way to understand the total system-wide impact, but it is not a representation of the impact at any one location.
- The PBOT modeling suggests that in 2035 about 22% of the anticipated traffic in the vicinity of the manufactured home community would be port-generated.
- The modeling suggests that all intersections, except for one off-island, are projected to operate at the level meeting both City and ODOT mobility standards in 2035. Several intersections may be close to their capacities, and mitigation could be required.

