

I. WHI Cost Memo and Port Property Development Background

4/19/2010

Background

The Port is a public entity created by the State Legislature in 1891 for the original purpose of improving, dredging and maintaining the harbors and channels of the Willamette and Columbia Rivers. The Legislature also granted the Port control over the rivers and harbors: “to the full extent the State of Oregon might exercise control, or grant to the Port of Portland the right to exercise control, the Port has full control of the rivers, harbors and waterways within its boundaries and between its boundaries and the sea.” ORS 778.085. Over time, the Port’s responsibilities were expanded to include promoting general maritime, shipping, aviation, commercial and industrial interests. ORS 778.015.

Portland has had a strategic location and transportation advantage throughout most of its history as the primary gateway for the state and region’s businesses to access international and domestic markets. The very first evidence of capitalizing on this location was investment to dredge a channel from Portland to the Pacific for the shipment of wheat in the late 1800s. The railroads quickly followed with investments in a parallel rail network providing access to the inland markets in the early 1900s. With improvements to navigation and many rail lines converging on Portland, the City’s harbor became an important shipping point. The City’s Commission of Public Docks created in 1910 built and maintained much of the infrastructure that made that possible until the 1970s when the commission was consolidated with the Port of Portland.

In this context, the Port has fulfilled the role of consolidation and access point for cargo seeking markets for sales. Global trading and industry’s need to manage costs to move products in the global arena has resulted in transportation, consolidation, product storage and information, as key focus areas for business productivity gains. These focus areas are also a consideration in business location and expansion decisions. The integrated development of trade related transportation systems and industrial land to support traded-sector businesses dependent upon competitive access to market continues to be a key to both the health of the regional and state economy and to the Port achieving its mission. The focus on industrial land acquisition and development has been an important part of the Port’s mission since the late 60’s; including acquisition and development of:

- Swan Island
- Rivergate
- Portland International Center
- Hillsboro Brookwood Industrial site
- Troutdale Reynolds Industrial site

The Port of Portland receives about 3% of its revenue from property taxes to support its general fund functions. All other operating revenues are from business transactions. The Port’s capital program is funded with business transactions and/or grants. See Economic Impact memo dated 4/19/2010 attached.

Port property purchase and development considerations

Since its creation, the Port has developed more than 5,000 acres of marine, aviation and industrial lands in the Portland metropolitan region for the purposes of supporting business and passenger/cargo market access. Many properties have included recreation and/or natural resource development and have either been sold or leased depending upon their location and strategic role in the Port's business portfolio. The Port has developed "Brownfields" as well as "Greenfields" and as a public entity is able to hold land (land banking) in order to develop when the market opportunity becomes available or is identified through recruitment efforts. All parcels receive varying levels of due diligence depending upon whether we purchase for immediate or future development. Additional evaluation, cost estimating, etc. is completed at the time of actual development.

The following are the general conditions that we look for in property for potential purchase and development:

- Property is adjacent to or well served by multiple modes of land transportation, especially rail,
- Property is adjacent to a deep water navigation channel and is sufficiently large to accommodate a potential marine facility,
- Land is situated to take advantage of the site's assets (e.g. minimal slope as well as access to transportation),
- Focus is on large sites, as industrial market trend is toward larger parcels (about 50 acres plus for a single development),
- Site size offsets site development constraints including the need for capital investments, transportation access and mitigation costs/impacts,
- Off- site, site serving infrastructure results in benefits to multiple users so grant funding assumptions are built into projects,
- Actual development of buildings or terminals and related development costs will be borne primarily by the purchaser/lessee.

WHI Costs – Illustration ONLY

The following table is an estimate of cost, no detailed due diligence level costs has been completed for this property. This is for illustration purposes only and while a gross-level costs for development was completed, actual costs will be developed if a development project is pursued. The cost estimates are based on the following assumptions:

- The dredge material includes berth dredging per the facility layout described in the HDR Rail memo, protecting shallow water habitat through dock design:
- Dredge material placement is also factored into the costs for each site:

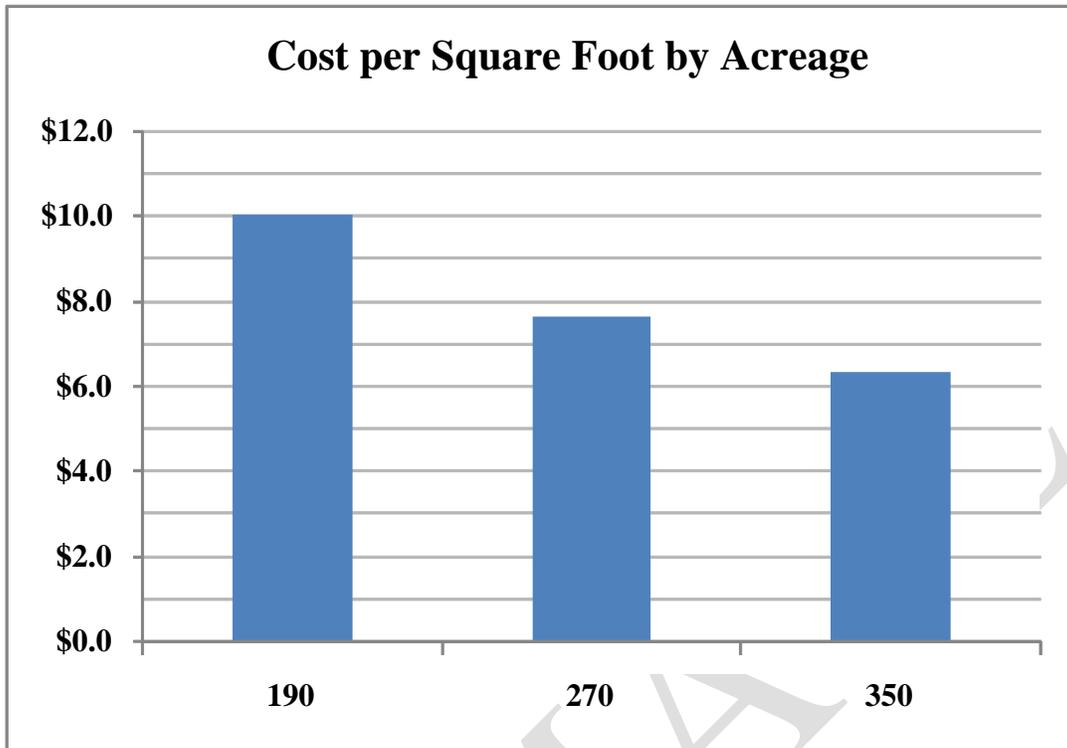
- Additional dredge material is assumed to be available and placed at the dredge placement site over time to meet the needs of development;
- Rail access costs include access from the BNSF rail embankment, they do not include loop or ladder track as that cost would be borne by the development;
- The bridge is assumed to be funded by grants or appropriations and would be the same for all development sizes although a multi-terminal option will be perceived as better justification for the request for funding;
- The internal roadways provide access from the bridge to the rest of Hayden Island, therefore a portion of the costs could also be considered for grant funding;
- The cost to extend utilities and internal roadways on the sites is assumed to be borne by any proposed development, and;
- Contingency assumed is 30%.

Site Development Costs – Illustration ONLY

Acres	190	270	350
Earthwork	\$ 3,584,400	\$ 6,168,300	\$ 9,239,400
Rail Access	4,451,000	4,451,000	4,451,000
Arterial Bridge*	---	---	---
Internal Roadways	18,000,000	18,000,000	18,000,000
Utilities	25,000,000	25,000,000	25,000,000
Mitigation	2,810,000	4,947,000	7,084,000
Design/Admin/Permits	5,384,540	5,856,630	5,932,340
Contingency	16,153,620	17,569,890	19,132,320
Acquisition**	8,000,000	8,000,000	8,000,000
Total	83,383,560	89,992,820	96,839,060
Per Acre	\$ 438,861	\$ 333,307	\$ 276,683
Per Square Foot	\$ 10.07	\$ 7.65	\$ 6.35

*Grant funded

**Sunk costs for 1994 purchase



ESTIMATE

II. The Economic Impacts of Marine Terminal and Industrial Land Development on West Hayden Island

4/19/2010

This analysis is an effort to estimate the economic benefits of terminal and marine industrial land development on West Hayden Island. Two examples are shown; the first based on the development of 350 acres for marine terminal use and the second is based on 250 acres of marine terminal development and 100 acres of industrial land development. The primary information sources for these examples are:

1. THE ECONOMIC IMPACTS OF THE PORTLAND HARBOR, 2006, John C. Martin Associates LLC
2. THE ECONOMIC IMPACTS OF THE PORT OF PORTLAND REAL ESTATE TENANTS, 2006, John C. Martin Associates LLC

John C. Martin Associates LLC is a well known and established economic consulting firm based in Pennsylvania. This firm has been doing economic impact modeling for the Port of Portland for more than a decade and they have a client base that includes nearly every major seaport in the United States.

The 2006 study, using 2005 data, is the most recent year for which detailed survey information is available. Dollar estimates from 2005 have been adjusted to 2010 dollars using the CPI.

Inflation Adjustment

2006	2007	2008	2009
3.23%	2.85%	3.84%	0.03%

Total adjustment from 2006 to 2010, 10.64%. Source: Inflationdata.com

Seaport Context

The economic impact of zoning, annexation, and the development of WHI that would facilitate marine cargo and marine industrial facilities is only partially measured by the direct and indirect impacts arising to the City of Portland from the operations on the island. Within the seaport context, marine cargo and marine industrial activity also supports the long-term viability and growth of the economically vital seaport/marine industrial cluster. This industry cluster, which depends on water-served land, currently provides more than 38,000 direct living-wage jobs to the community.

The availability of land with access to a deep-draft channel greatly enhances Portland's economic competitiveness due to our access to cost-efficient waterborne transportation. Water-served land also gives Portland an advantage in attracting and expanding its manufacturing employment base. All this base activity, whether it's marine cargo or marine industrial, attracts many supporting industries and jobs. The viability of this industry cluster is dependent upon the ability of Portland to provide water-served land. The seaport/marine industrial cluster is also a cultural resource for the Portland community. The seaport, its

waterways, and related economic activity provide Portland with the direct access to the diverse peoples and cultures of the world only enjoyed by port cities.

Methodology

The methodology used assess the total amount of acreage incorporated in the economic impact studies and divide this acreage by the total Benefit Factors identified. Benefit Factors are those elements that have a measurable positive economic impact on the local/regional economy. The Benefit Factors indentified in these reports include:

- Direct jobs
 - Generated by cargo moving over public and private facilities in the Portland Harbor
- Induced jobs
 - Employed by providing goods and services to the individuals directly involved with port activity
- Indirect jobs
 - Firms directly dependent on maritime activity for their purchases for office supplies, parts and equipment, maintenance and repair services, business services, utilities, communications services and fuel
- Personal incomes
 - From each of the job categories
- Business revenues
- Taxes generated
 - Combined state and local

Dividing the total number of developed acres by the Benefit Factors identified provides an estimated economic impact per acre that marine terminals and industrial lands provide to this region. All of the dollar amounts have been factored to include inflation from the 2006 Martin study.

Since we do not currently know what specific type of development will occur in the future, we have used this method to estimate the expected benefits of bringing on 350 new acres for marine terminal and/or marine-related development.

Much of this analysis is based on the 2006 studies conducted by Martin Associates. However, the data from 2005 represented a ‘low’ year in terms of total volume through the public terminals. While this analysis attempts to generate predictive measures for jobs, incomes, and tax revenues, it is possible that the numbers derived are understated due to the 2005 base year used in the original study.

Port of Portland Public Terminals	2004	2005	2006	2007	2008	2009
Total Tons	12,581,370	11,550,062	11,972,031	14,440,298	14,109,432	10,281,130

Findings – Example 1

Assumes 350 acres on WHI are used for marine terminal development.

The total acreage included in the assessment of existing public marine terminals in the Portland Harbor is 885 acres. Some of the acreage used in this analysis is not yet developed or utilized to its full capacity. Consequently, using underutilized acreage in the analysis understates the potential economic impacts at full build-out and is a conservative assumption. However, it represents the entirety of current public terminal acreage in the harbor, which can be reasonably expected to become more fully developed and intensively used over time.

Based on a total calculated job impact of 10,656 jobs for the public marine terminals from the 2005 Martin study, the following table of facility acreages was used to develop an estimate of jobs per acre.

Marine Terminals	Acreage
2	49
4	280
5	143
6	414
TOTAL	885

Source: Port of Portland Facility Records

Jobs	Per Acre	350 Acres
Direct	3.9	1,371
Induced	5.3	1,856
Indirect	2.8	988
TOTAL	12.0	4,214

Personal Income (1,000)		
Direct	213	74,670
Induced	643	224,891
Indirect	131	46,015
TOTAL	987	345,576

Business Revenue (\$1,000)	801	280,378
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State and Local Taxes (\$1,000)		
Oregon	67	23,307
Washington	34	12,007
TOTAL	101	35,314

Cargo Value (\$1,000)*	\$8,413	\$2,944,636
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*Source: Global Trade Information Systems, Waterborne Trade Atlas.
Totals may not add due to rounding.

Three hundred and fifty acres of marine terminal development would be expected to generate an estimated 4,200 jobs and \$345 million in personal income. Also, marine-related jobs tend to be well paying living wage jobs averaging over \$54,000 per year in income.

The total economic impact of these jobs can be expected to generate an estimated \$280 million in business revenues and \$35 million in taxes.

The \$2.9 billion in cargo value also generates several taxes and fees which are substantial, but have not been calculated here. These generally accrue to the federal government in the form of Customs receipts, ad valorem payments into the Harbor Maintenance Trust Fund, and fuel taxes for the Inland Waterways Maintenance Trust Fund.

In 2009, the total amount of cargo handled in the Portland harbor was 14,366,705 short tons. The total value of this cargo is \$10,404,549,056. The average per ton value of cargo moving through the Portland harbor is \$721. This average value per ton represents a wide range of actual value per ton of cargo handled through the seaport - for example grain and fertilizers moving through Portland may be valued at \$200-400 per ton, whereas automobiles may be more in the range of \$10k-20k per ton. The Port of Portland public terminals handled 10,281,130 tons of cargo in 2009 for a total value of \$7.4 billion, or \$8.4 million per acre of marine terminal land.

Individuals directly employed by a firm use a portion of their income to purchase goods and services which results in the 'induced' jobs. A portion of these purchases are made from firms located in the Portland area, while another portion is used for out-of-region purchases. Re-spending of income within a geographical region is measured by an income multiplier. The size of the multiplier varies by region depending on the proportion of in-region goods and services purchased by individuals; the higher this percentage, the lower the income leakage out-of-region.

For the original Martin studies, the Bureau of Economic Analysis estimates that for every one dollar earned in the state of Oregon, an additional \$1.24 is earned due to the re-spending of wages and salaries in the local economy. This is consistent with a regional marginal propensity to consume of \$0.55. This means that for every dollar earned by a Portland area resident, 55 percent, or \$0.55, is spent for local purchases. It is this 're-spending' multiplier that drives induced jobs and induced wages to be higher than the direct or indirect jobs or wages.

Findings – Example 2

The second example incorporates the impacts of industrial development as a portion of total marine development. These impacts were measured in terms of jobs, personal income, business revenue and taxes generated by economic activity of the firms that are tenants of the Port of Portland's business and industrial parks. The impacts are measured for all tenants of Swan Island/Mocks Landing, Port Center, Rivergate, Troutdale Industrial Park, and Portland International Center. The measures exclude marine terminals, airport properties, and other Port-owned properties not located in these parks. The impacts are measured using a methodology similar to the one that Martin Associates has used to measure the impacts of the

marine cargo activity at the Port of Portland and the impacts created by activity at the Portland International Airport.

Some of the acreage used in this analysis is not yet developed or utilized to its full capacity. Consequently, using underutilized acreage in the analysis understates the potential economic impacts at full build-out and is a conservative assumption. However, it represents the entirety of current Port of Portland owned acreage in the listed business and industrial parks, which can be reasonably expected to become more fully developed and intensively used over time.

In this example, of the 350 acres developed on WHI, 250 acres are used for marine terminal development and 100 acres for industrial development.

Total acreage included in the assessment of industrial land is 2,545 acres, based on the number of acres located within Rivergate, Swan Island/Mocks Landing, Portland Industrial Center and Troutdale Industrial Park..

Marine Terminals Acreage			
2	49	Rivergate	1,600
4	280	Swan Island/Mocks Landing	590
5	143	Portland Industrial Center	319
6	414	Troutdale Industrial Park	36
TOTAL	885	TOTAL	2,545

Source: Port of Portland Facility Records

Jobs	Industrial land benefits per acre	100 acres of industrial development	250 acres of marine terminal development	Combined Total
Direct	6.0	597	979	1,576
Induced	2.9	295	1,326	1,621
Indirect	4.8	482	705	1,187
TOTAL	13.7	1,374	3,010	4,384

Personal Income (1,000)

Direct	\$208	\$20,838	\$53,336	\$74,174
Induced	\$258	\$25,779	\$160,637	\$186,416
Indirect	\$317	\$31,687	\$32,868	\$64,555
TOTAL	\$783	\$78,303	\$246,840	\$325,143

Business Revenue (\$1,000)	\$2,104	\$210,436	\$200,270	\$410,706
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State and Local Taxes (\$1,000)	\$80	\$7,987	\$25,224	\$33,211
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Totals may not add due to rounding.

Two hundred and fifty acres of marine terminal development and 100 acres of industrial land development are estimated to generate 4,384 jobs and \$325 million in personal income. While direct industrial land jobs tend to average lower annual incomes than marine terminal jobs, the number of jobs provided on a per acre basis is higher.

The total economic impact of these jobs is an estimated \$410 million in business revenues and \$33 million in taxes generated.

Short Term Impacts from Construction

Martin estimates that construction, based on regional averages, generates 20.093 jobs per \$1 million construction (Martin 2009). To estimate the potential job impact of marine development on the island, we developed a per acre cost based on a cost estimate for infrastructure, land improvement, and environmental mitigation at \$700,000 per acre (over 350 acres) and a weighted facility improvement cost of \$1 million per acre based on a weighted average of development cost by facility type (see table below).

Cargo Type	Cost/ Acre	Existing Acres
Mineral Bulks	\$600,000	125
Grain	\$1,320,000	42
Auto	\$520,000	322
Container	\$2,000,000	192
Weighted cost of development/acre	\$1,001,292	

Costs from MTMP 2020 Update, 2000, adjusted 2% per year.

**Construction Impacts @
\$1.7 million per acre**

Total Jobs	11,955
Total Income (1,000)	\$433,458
Revenue (1,000)	\$595,000
Local Purchases (1,000)	\$794,504
State/ Local Taxes (1,000)	
Oregon	\$55,059
Washington	\$25,980
Total Taxes (1,000)	\$81,039

Adapted from Martin, 2010