

THE LOCAL AND REGIONAL ECONOMIC IMPACTS OF PORTLAND WORKING HARBOR, 2011

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Economic Impacts of Portland Working Harbor

Portland's Working Harbor (referred to as Portland Harbor) is the deep water shipping channel and surrounding marine, commercial, industrial and transportation infrastructure from about the Broadway Bridge on the Willamette River (RM 11.65) to Terminal 6 on the Columbia River. (Refer to Figure 1). Portland Harbor includes public and private marine terminals, industrial parks, and other commercial and warehousing businesses. Martin Associates was retained by the Port of Portland to prepare a study that presents the economic impacts of the terminals and firms located within Portland Harbor.

As background, Martin Associates recently completed two related studies for the Port of Portland that were reported in The Local and Regional Economic Impacts of the Port of Portland, 2011 (the "Port of Portland Economic Impact Study"):¹

- (1) The Economic Impacts of the Portland Harbor. This study provided the economic impacts created by marine cargo and vessel activity handled at and related to marine terminals located in the Portland Harbor, but did not include economic impacts of other businesses located within Portland Harbor. The study focused on the public marine terminals owned by the Port of Portland and private marine terminals located within the Harbor boundaries as defined by the U.S. Army Corps of Engineers. The Port of Portland's public marine terminals include Terminal 6, which is the primary ocean container terminal on the Columbia River; Terminal 2, which handles breakbulk cargoes and steel; Terminal 4, which handles bulk products, as well as breakbulk cargoes and automobiles; and Terminal 5, which handles grain and mineral bulks. Automobiles and breakbulk are also handled at Terminal 6. Private marine terminals within the Portland Harbor handle grain, petroleum products and dry bulk cargoes such as cement, alumina, sand and gravel and limestone. In calendar year 2011, these public and private marine terminals in the Portland Harbor handled nearly 24 million tons of cargo for exporters and importers located within the metropolitan region, the State of Oregon, as well as throughout the Pacific Northwest and the United States.
- (2) The Economic Impact of the Port of Portland's Industrial Parks. This study included the economic impacts of the tenants located in the industrial parks developed by the

¹ The Local and Regional Economic Impacts of the Port of Portland, 2011, prepared for the Port of Portland, March, 2012, by Martin Associates. This report summarizes three separate studies: The Economic Impacts of the Portland Harbor; The Economic Impacts of the Real Estate Tenants of the Port's Business and Industrial Parks; Economic Impacts of PDX and General Aviation Airports

Port of Portland² at Swan Island, Rivergate, Troutdale Industrial Park and Portland International Center. The study excluded marine terminals, airport properties and other Port-owned properties not contained in these parks. Two of these industrial parks—Swan Island and Rivergate—are located within Portland Harbor.

Martin Associates was retained to expand the Port of Portland Economic Impact Study to identify the total economic impacts of the companies located within Portland Harbor, regardless of whether the uses were water dependent or whether the firms are located within the Port's Rivergate and Swan Island industrial and business parks.

The 2011 Economic Impact of the Portland Harbor only included the economic impacts of the service providers and marine terminals and tenants that were dependent on the use of the marine terminals to ship and receive cargo. For those tenants and service providers that were only partially dependent upon the use of the marine terminals, employment was adjusted down to only reflect the portion that is dependent on the use of the terminals. Employment with the firms that were not directly dependent on shipping and receiving cargo via the terminals was not included in the economic impact analysis.

Similarly, the economic impacts measured for the Port of Portland developed industrial parks only include the impacts of the tenants of these parks, particularly the Rivergate and Swan Island industrial parks, and not the economic impacts of firms located within the harbor as a whole. Therefore, the marine cargo and real estate tenant economic impacts measured in the Port of Portland Economic Impact Study are a subset of the total economic impacts of the Portland Harbor.³

To measure the total impacts of the Portland Harbor, Martin Associates was provided access to the Oregon Employment Department (OED) data base by Port of Portland. This confidential data base was used to identify those firms not included in the Portland Harbor Economic Impact Study, as well as the employment of the firms that were only partially included in the impact analysis based on the degree of dependency on shipping and receiving cargo via the public and private marine terminals. Similarly, those non-maritime dependent firms located within the geographical boundaries of the Portland Harbor, but not tenants of the Port of Portland's Rivergate and Swan Island industrial and business parks were identified from the OED data base. The OED data base includes employment and average salary for each firm. The data in the OED data base was used to match the employment data measured for each firm included in the Port of Portland Economic Impact Study with that firm data in the OED data

² Also included were the economic impacts generated by the Port of Portland International Airports and general aviation activity at the Port operated airports of Hillsboro and Troutdale.

³ The impacts of PDX and the general aviation airports and the tenants of the Portland International Center and the Troutdale Industrial park are not included in the Portland Working Harbor.

base, so as to identify employment that was not dependent upon the cargo activity at the private and public marine terminals.⁴ In addition, the OED data base was used to identify non-maritime cargo related firms that were not tenants of the Rivergate and Swan Island industrial and business parks.

The firms from the OED data base were categorized by NAICS code, and then the additional employment not included in the Port of Portland Economic Impact Study was identified by NAICS code. The real estate models developed by Martin Associates as part of the Port of Portland Real Estate Economic Impact Study were then used to estimate the economic impacts of the additional employment not included in the Port of Portland Economic Impact Study. These models are NAICS code specific and developed from the actual data provided to Martin Associates as part of the Port of Portland Economic Impact Study. The Martin Associates' Marine Seaport Impact Model was used to estimate the economic impacts of firms whose employment was only partially counted in the Port of Portland Harbor Economic Impact Study.

The results of the analysis of the additional economic impacts were then combined with the previously estimated economic impacts measured for the marine cargo activity at the Portland Harbor and the economic impacts of the tenants of the Swan Island and Rivergate Industrial Parks.

The economic impacts measured are:

- Employment impact;
- Personal earnings impact;
- Business revenue impact; and
- Tax impact.

Direct jobs are those jobs held by employees of a particular firm, and are measured in terms of full-time equivalent workers. The employment is based on a survey of more than 800 firms conducted by Martin Associates as part of the Port of Portland Economic Impact Study, and combined with the firm-specific employment data provided from the OED data base.

Those directly employed by firms in a given industry receive wages and salaries. A portion of the wages and salaries is saved; another portion is used to pay personal taxes, while a final portion is used to purchase goods and services. A percentage of these purchases are made

⁴ The employment data used in the Port of Portland Economic Impact analysis of the Portland Harbor is based on detailed survey data collected by Martin Associates, and the jobs are expressed in terms of full-time employees. The OED data is number of jobs. However, budget limitations did not permit a detailed survey of all firms located in the Portland Working Harbor.

in the Portland metropolitan area, while some consumption purchases are made outside the area. These consumption purchases, in turn, generate additional jobs in those firms supplying the goods and services. The *induced jobs* measured in this study are only those generated in the Portland metropolitan area.

Jobs, which are created due to the purchases by firms, not individuals, are classified as *indirect jobs*. These jobs are estimated based on the local purchases made by the firms located within the Portland Working Harbor.

The *income impact* consists of the level of wage and salary earnings associated with the jobs created by the maritime, aviation and real estate tenants, and is adjusted to reflect re-spending throughout the economy. The personal income impact is, for the most part, based on salary and annual earnings data provided from the survey conducted by Martin Associates. As described above, individuals directly employed by a firm use a portion of their income to purchase goods and services. A portion of these purchases is 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.⁵

The *revenue impact* is the measure of direct business revenue received by firms located in the Portland Working Harbor.

The *state, county and local tax revenues* are generated by economic maritime activity at the marine terminals and by the activity of the real estate tenants of the Port of Portland Business and Industrial Parks and other firms located within the Portland Working Harbor.

⁵ It is to be noted that different income multipliers are used to estimate the induced job impacts and the re-spending and consumption impacts for seaport activity and real estate activity. The income multipliers, as estimated for Martin Associates by the U.S. Bureau of Economic Analysis for the Portland regional economy, reflect the level of salary associated with each industry group, as well as the leakages of income from the Portland economy for the specific industry sector. Because of the higher direct wages and salaries associated with seaport activity, the direct income multiplier used to measure the impacts of the seaport activity is higher than the direct income multiplier associated with the real estate tenants.

The combined economic impacts of the Portland Working Harbor are presented in Exhibit I.

Exhibit I
Economic Impact of the Portland Harbor

TOTAL HARBOR WIDE	
<u>Jobs</u>	
Direct	23,646
Induced	14,739
Indirect	14,399
Total	52,784
<u>Personal Income</u>	
Direct	\$1,182,639,000
Re-Spending/Local Consumption	\$1,720,553,000
Indirect	\$714,306,000
Total	\$3,617,498,000
Business Revenue	\$7,607,030,000
Local Purchases	\$1,288,362,000
State/Local Taxes	\$350,723,000

In summary, 52,784 direct, induced and indirect jobs are supported by the Portland Harbor:

- 23,646 jobs are directly created by the firms located within the Portland Harbor.
- As the result of local purchases by the 23,646 directly employed workers, an additional 14,739 induced jobs are supported in the local economy to provide goods and services to those directly employed.
- 14,399 indirect jobs are also supported in the local economy as the result of the local purchases of goods and services by the firms located within the Portland Harbor.

Businesses located within the Portland Harbor received \$7.6 billion of direct business revenue. The \$7.6 billion of revenue received by the businesses providing the services in the Portland Harbor does not include the value of the cargo moving over the marine terminals, since the value of the cargo is determined by the demand for the cargo, not the use of the marine terminals.

The business activity located within the Portland Harbor also created \$3.6 billion of direct, induced and indirect personal wage and salary income and local consumption expenditures for Portland metropolitan residents. The consumption expenditures are a part of the direct multiplier effect, and measure the local consumption expenditures by those directly employed. The consumption expenditures support the induced jobs. The 23,646 direct job holders received \$1.2 billion of direct wage and salary income, for an average salary of \$50,000.⁶

A total of \$350.7 million of state and local tax revenue was generated by activity in the Portland Harbor in calendar year 2011.

⁶ The re-spending and local consumption impact cannot be divided by induced jobs to estimate average induced salary, since local consumption expenditures are counted in the re-spending effect. This would overstate the average induced wage and salary per induced job.

FIG 1. PORTLAND HARBOR STUDY AREA

