

**THE LOCAL AND REGIONAL  
ECONOMIC IMPACTS  
OF THE PORT OF PORTLAND,  
2006**

**Prepared for:**



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## *Summary of the Economic Impacts Created by The Port of Portland*

The Port of Portland is a multi-modal port, overseeing both seaport and airport operations. The Port owns and operates marine terminals along the Columbia River, and in addition to the marine terminals owned and operated by the Port of Portland, the Portland Harbor also includes private marine terminals. The Port of Portland also owns and operates the Portland International Airport, and the general aviation airports at Troutdale and Hillsboro<sup>1</sup>. The Port of Portland retained the services of Martin Associates to quantify the economic impact of the Port's seaport and airport activities in calendar year 2005. This current study is an update of a series of similar studies conducted by Martin Associates for the Port since 1991. In the previous studies, as well as in this current study, separate studies are conducted for the Port's two lines of business, and have been presented under separate cover. The combined impacts of the maritime and airport activities are presented in the balance of this summary. In addition to the Airport and Seaport operations of the Port of Portland, Martin Associates also has quantified the economic impacts of the Port's Industrial and Business Parks<sup>2</sup>.

The impact analysis is based on a telephone survey of 818 marine, airport and real estate tenants and firms providing services to the marine terminals and airports. Local responding models were also developed to estimate the impact of local purchases by both individuals directly employed by Port operations as well as the firms providing support services to the airport and seaport operations. Also quantified was the economic impact of the marine terminals on shippers and consignees using the marine terminals and air cargo shippers using Portland International Airport.

Economic activity due to the movement of marine cargo, air passengers and cargo and real estate activity at the Port's industrial and business parks contributes to the local and regional economy by providing employment and income to individuals, taxes to state, county and local governments and revenue to local and national firms engaged in producing goods and services. Exhibit E-1 illustrates the flow of economic activity from the airport, maritime and real estate tenant activity at the Port of Portland.

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<sup>1</sup> The Mulino general aviation airport also owned by the Port reported no activity in 2005.

<sup>2</sup> In the context of this report, firms located within the Port-managed business and industrial parks are referred to as "tenants." The Port does not have a legal landlord relationship with the majority of firms.

Exhibit E-1  
Flow of Economic Activity Throughout the Local Economy

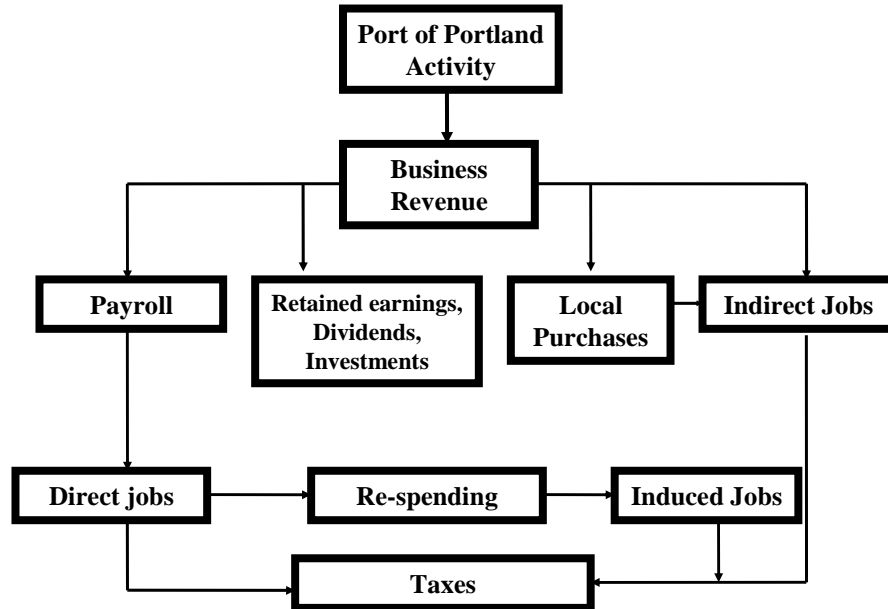


Exhibit E-1 illustrates the flows of economic impacts generated by the seaport, airport and retail estate activity throughout the region's economy. As this figure shows, economic activity at the seaport or airport or a real estate tenant initially creates business revenue. This revenue is in turn used for several purposes:

- To hire employees to produce the goods and provide the services;
- To pay stockholders dividends, retire debt, and invest;
- To buy goods from other firms, creating indirect jobs;
- To pay taxes.

As can be seen from Exhibit E-1, the flow of economic impacts throughout an economy creates four separate and non-additive types of impacts. These are:

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

**Direct jobs** are those jobs held by employees of a particular firm, and are measured in terms of full-time equivalent workers. These are the number of jobs reported by a firm as paid employees. These direct employees are estimated directly from the survey of 818 firms.

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 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 Port's real estate tenants and firms directly dependent upon seaport activity.

The **income impact** consists of the level of wage and salary earnings associated with the jobs created by the real estate tenants, and is adjusted to reflect respending 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. Respensing 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.<sup>3</sup>

The **revenue impact** is the measure of direct business revenue received by seaport tenants and service providers and airport tenants and service providers. For the real estate tenants, the gross sales generated by the tenants of the Port's Industrial and Business Parks is counted in the revenue impact. It is to be emphasized that this revenue impact is not necessarily money that remains within the local economy. Only those portions of the revenue paid out in wages and salaries to those directly employed, used by the dependent firms and real estate tenants for local purchases of goods and services, and that portion of

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<sup>3</sup> It is to be noted that different income multipliers are used to estimate the induced job impacts and the respending 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 airport and real estate tenants.

revenue paid in taxes to the local and county governments, can be defensibly identified as remaining in the local economy.

The *state, county and local tax revenues* generated by economic maritime activity at the marine terminals; Portland International airport and the General Aviation Airports at Hillsboro and Troutdale; and by the activity of the real estate tenants of the Port of Portland Business and Industrial Parks.

It is to be emphasized that the tenants of Port property are in some cases engaged in seaport, airport and shipyard activity. As a result, the impacts of such tenants have already been attributed to maritime activities at the seaport, passenger and air cargo activity at Portland International Airport and the general aviation reliever airports at Troutdale and Hillsboro. In addition, some tenants of Port-owned business parks ship air and marine cargo through Port facilities and again are accounted for, in part, in the economic impacts attributed to other Port operating divisions. Therefore, even though the impacts measured for the Portland real estate holdings are defined in the same way as for the seaport and airport activity, the real estate impacts cannot be added to the impacts generated by these two other lines of businesses operated by the Port of Portland.

Table E-1A summarizes the economic impacts of the Port of Portland marine and airport activity. The impacts of the real estate tenants, are not included in this summary for the reasons just noted. The impacts of the real estate tenants are addressed in a separate section of this summary.

Table E-1A  
Summary of the Economic Impacts of the  
Port of Portland\*

	MARITIME	AVIATION	TOTAL
<b>JOBS</b>			
DIRECT	3,816	10,410	14,226
INDUCED	5,210	5,379	10,588
INDIRECT	<u>2,698</u>	<u>2,923</u>	<u>5,622</u>
<b>TOTAL</b>	11,724	18,712	30,436
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$188,725	\$314,351	\$503,076
INDUCED/CONSUMPTION IMPACT	\$568,401	\$419,879	\$988,280
INDIRECT	<u>\$113,663</u>	<u>\$90,684</u>	<u>\$204,346</u>
<b>TOTAL</b>	\$870,788	\$824,913	\$1,695,702
<b>BUSINESS REVENUE (1,000)</b>	\$692,574	\$3,268,448	\$3,961,022
<b>LOCAL PURCHASES (1,000)</b>	\$245,801	\$189,664	\$435,465
<b>STATE AND LOCAL TAXES (1,000)</b>	\$88,831	\$83,492	\$172,323
<b>FEDERAL GOVERNMENT AVIATION - SPECIFIC TAXES (1,000)</b>		\$224,616	\$224,616

\*Includes only Port of Portland facilities and excludes impacts generated by visitors using Portland International Airport

However, the impacts of Port of Portland facilities only describe a portion of the impact of the region's maritime and aviation activities. In addition to the Port's marine terminals there are a number of private facilities located within the Portland harbor that generate economic activity. Similarly, the Port's aviation facilities generate visitor industry activity, which contributes to the regional economy. Table E-1B shows the economic impact of the entire Portland harbor and the aviation system, including its visitor industry impacts.

Table E-1B  
Summary of the Economic Impacts of the Portland Harbor and Aviation System  
2006

	MARITIME	AVIATION	TOTAL
<b>JOBS</b>			
DIRECT	6,568	38,887	45,455
INDUCED	8,636	14,475	23,110
INDIRECT	<u>3,833</u>	<u>5,510</u>	<u>9,343</u>
<b>TOTAL</b>	19,036	58,872	77,908
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$313,694	\$800,443	\$1,114,137
INDUCED/CONSUMPTION IMPACT	\$944,783	\$801,024	\$1,745,807
INDIRECT	<u>\$168,300</u>	<u>\$143,322</u>	<u>\$311,622</u>
<b>TOTAL</b>	\$1,426,777	\$1,744,789	\$3,171,566
<b>BUSINESS REVENUE (1,000)</b>	\$995,674	\$4,949,899	\$5,945,573
<b>LOCAL PURCHASES (1,000)</b>	\$358,965	\$270,029	\$628,994
<b>STATE AND LOCAL TAXES (1,000)</b>	\$145,865	\$171,268	\$317,132
<b>FEDERAL GOVERNMENT AVIATION - SPECIFIC TAXES (1,000)</b>		\$224,616	\$224,616

*Regional maritime and aviation activity supported 77,908 total jobs in the local economy.*

- 45,455 jobs are directly created by marine cargo and airport activity
- As the result of local purchases by the 45,455 directly employed workers, an additional 23,110 induced jobs are supported in the local economy to provide goods and services to those directly employed.
- 9,343 indirect jobs are also supported in the local economy as the result of the local purchases of goods and services by the firms directly dependent upon the cargo and vessel activity at the Port's marine terminals, as well as passenger and cargo activity at Portland International Airport and the general aviation airports at Troutdale and Hillsboro.
- About 42% of those directly employed reside in Multnomah County, while another 21% reside in Clark County. About 31% of those directly employed live in Portland.



*The aviation and marine cargo activity generated \$6.0 billion of business revenue. This revenue impact does not include the value of the cargo moving via the Portland Harbor or the Portland International Airport.*

*The local businesses made \$662 billion of purchases from the local economy, supporting the 9,343 indirect jobs.*

*Regional maritime and aviation activity generated \$3.3 billion of direct, induced and indirect wages and salaries and consumption activity in the local economy.*

*A total of \$324 million of state and local tax revenue was supported by the maritime and aviation activity in the region. In addition, the aviation activity generated \$225 million of Federal aviation specific taxes.*

The balance of this executive summary presents the impacts of the Portland Harbor; Portland International Airport and the general aviation airports at Troutdale and Hillsboro; and the real estate tenants of the Ports Industrial and Business parks.

***I. Summary of the Economic Impacts of the Portland Harbor***

The Portland Harbor consists of public marine terminals owned by the Port of Portland and private marine terminals. 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 2006, 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. The economic impacts of the Portland Harbor are presented in Table E-2.

Table E-2  
Summary of the Economic Impacts of the  
Port of Portland Harbor  
(2006)

	PUBLIC TERMINALS	PRIVATE TERMINALS	TOTAL PORTLAND HARBOR
<b>JOBS</b>			
DIRECT	3,816	2,752	6,568
INDUCED	5,210	3,426	8,636
INDIRECT	<u>2,698</u>	<u>1,134</u>	<u>3,833</u>
<b>TOTAL</b>	11,724	7,312	19,036
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$188,725	\$124,969	\$313,694
INDUCED	\$568,401	\$376,382	\$944,783
INDIRECT	<u>\$113,663</u>	<u>\$54,637</u>	<u>\$168,300</u>
<b>TOTAL</b>	\$870,788	\$555,988	\$1,426,777
<b>BUSINESS REVENUE (\$1,000)</b>	\$692,574	\$303,100	\$995,674
<b>STATE AND LOCAL TAXES (\$1,000)</b>			
OREGON	\$60,237	\$35,336	\$95,573
WASHINGTON	<u>\$28,594</u>	<u>\$21,697</u>	<u>\$50,291</u>
<b>TOTAL</b>	\$88,831	\$57,033	\$145,865
<b>LOCAL PURCHASES (\$1,000)</b>	\$245,801	\$113,164	\$358,965

*In calendar year 2006, 19,036 jobs in the Portland metropolitan region and the states of Oregon and Washington were supported by activity in the Portland Harbor. Of the 19,036 jobs:*

- 6,568 are **direct** jobs, in that these jobs are generated by activities at the Port, and if such activities should cease, these jobs would be discontinued over the short term. It is these jobs that are most directly dependent upon the vessel and cargo activity in the Portland Harbor. These jobs are with the International Longshore and Warehouse Union, terminal operators, stevedores, trucking firms, railroads, steamship agents, freight forwarders and customhouse brokers, warehousemen, federal government agencies, towing companies, pilot organizations, and marine construction companies. Fifty-nine percent of these jobs are held by residents of the Portland metropolitan region, as defined by the counties of Multnomah, Clark, Washington, Clackamas and Skamania. Forty-one percent of the direct jobs are held by residents of Multnomah and Clark counties. Activity at the Port of Portland's public marine terminals created about 58 percent of the direct jobs.
- 8,636 are **induced** jobs, or those jobs supporting the local purchases made by the 6,568 individuals holding the direct jobs due to port activity. Should the direct jobs be lost from the economy, the induced jobs supporting the purchases of the direct jobs would also be lost. These jobs are with local grocery stores, retail outlets, restaurants, transportation services, local government services, schools, hospitals, etc.
- The firms dependent upon the marine activity in the Portland Harbor made \$359.0 million of local purchases for office supplies, equipment, utilities, communications, maintenance and repair services, transportation services, professional services, and goods and services. These purchases supported 3,833 **indirect** jobs in the Portland metropolitan economy.

*Businesses providing maritime services in the Portland Harbor received \$995.7 million of direct business revenue. The \$995.7 million 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.*

*Marine activity created \$1.4 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 6,568 direct job holders*

*received \$313.7 million of direct wage and salary income, for an average salary of \$47,760.*

*A total of \$145.9 million of state and local tax revenue was generated by maritime activity in the Portland Harbor in calendar year 2006.*

## ***II. Summary of the Economic Impacts of Portland International Airport and the General Aviation Airports***

The Port of Portland owns and operates Portland International Airport, as well as the general aviation airports at Troutdale and Hillsboro.<sup>4</sup> The airport impact analysis included the quantification of the economic impacts generated by passenger, freight, military and general aviation activity at Portland International Airport, as well as the general aviation activity at Troutdale and Hillsboro. The impacts are estimated for total airport activity for calendar year 2006. Table E-3 presents the economic impacts of Portland International Airport.

Table E-3  
Economic Impacts of Portland International Airport  
(2006)

IMPACTS	AIRPORT GENERATED	VISITOR INDUSTRY	TOTAL IMPACT
<b>JOBS</b>			
DIRECT	9,867	28,333	38,200
INDUCED	4,986	9,053	14,039
INDIRECT	2,556	2,564	5,120
<b>TOTAL</b>	<b>17,409</b>	<b>39,950</b>	<b>57,358</b>
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$314,324.9	\$486,090.0	\$800,415.0
INDUCED	\$419,843.8	\$381,143.2	\$800,987.0
INDIRECT	\$90,670.5	\$52,638.7	\$143,309.2
<b>TOTAL</b>	<b>\$824,839.2</b>	<b>\$919,872.0</b>	<b>\$1,744,711.2</b>
<b>BUSINESS REVENUE (1,000)</b>	<b>\$3,268,389.8</b>	<b>\$1,681,442.5</b>	<b>\$4,949,832.3</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$189,631.6</b>	<b>\$80,364.5</b>	<b>\$269,996.1</b>
<b>STATE AND LOCAL TAXES (1,000)</b>	<b>\$83,484.7</b>	<b>\$87,775.6</b>	<b>\$171,260.3</b>
<b>FEDERAL GOVERNMENT AVIATION - SPECIFIC TAXES (1,000)</b>	<b>\$224,616.0</b>	NA	<b>\$224,616.0</b>

In 2006, passenger and air freight activity at Portland International Airport had the following impacts.

***The 14 million passengers using PDX and the 560 million pounds of air freight handled at the airport in 2006 generated 17,409 direct, induced and indirect jobs for residents of the Portland area. Of the 17,409 jobs:***

<sup>4</sup> In 2006, there was no economic activity generated at the third general aviation airport operated by the Port of Portland located in Mulino.

- 9,867 were direct jobs, while 4,986 jobs were induced throughout the region to support the purchase of goods and services by the 9,867 directly dependent employees. An additional 2,556 indirect jobs were generated in the local economy due to \$189.6 million of local purchases by firms directly dependent on the airport.

*\$824.8 million of direct, induced and indirect personal income and consumption expenditures were generated in the Portland area as a result of the airport activity in 2006.*

*Nearly \$3.3 billion of business sales were generated by airport activity, including \$870 million of business revenue generated by air cargo activity.*

*The Federal Government received \$224.6 million in airport-specific taxes from activity at Portland International Airport.*

*State and local governments received \$83.5 million in tax revenues from airport activity.*

*In addition to these airport-generated impacts, it is estimated that 39,950 direct, induced and indirect jobs were supported in the Portland area visitor industry due to expenditures by the 3.4 million visitors to the region who arrived via Portland International Airport.* The impacts of the visitors are estimated from the results of an on-going passenger survey conducted at PDX. These visitors, who include both domestic as well as international travelers, spent about \$1.7 billion on area hotels, restaurants, retail stores and entertainment establishments, which in turn generated the jobs in the Portland area visitor industry. As the result of visitors arriving via the airport, \$87.8 million of state and local tax revenues were generated.

In 2006, 260.1 million pounds of air freight (both domestic and international) were enplaned at Portland International Airport. It is estimated that the total value of air cargo shipped via Portland is about \$10.5 billion, which supports 45,958 jobs in the region with the firms producing the air cargo.

In addition to the economic impacts of Portland International Airport, general aviation activity at the Portland Troutdale Airport and Hillsboro Airport generated economic impacts to the regional economy. These impacts are summarized in Table E-4.

Table E-4  
Economic Impacts of Portland Hillsboro and Troutdale General Aviation Airports  
(2006)

	ON-SITE	VISITOR INDUSTRY	TOTAL
<b>JOBS</b>			
DIRECT	544	143	687
INDUCED	392	43	436
INDIRECT	<u>367</u>	<u>23</u>	<u>391</u>
<b>TOTAL</b>	1,304	210	1,513
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$26,118	\$2,217	\$28,335
INDUCED	\$34,886	\$1,739	\$36,624
INDIRECT	<u>\$13,141</u>	<u>\$462</u>	<u>\$13,603</u>
<b>TOTAL</b>	\$74,144	\$4,418	\$78,562
<b>BUSINESS REVENUE (1,000)</b>	\$58,634	\$7,973	\$66,606
<b>LOCAL PURCHASES (1,000)</b>	\$32,222	\$771	\$32,993
<b>STATE AND LOCAL TAXES (1,000)</b>	\$7,354	\$391	\$7,745

The general aviation activity at the two airports created 1,304 direct, induced and indirect jobs. In addition, 210 direct, induced and indirect jobs were generated by visitors to the Portland area using Troutdale and Hillsboro.

In 2006, \$74.1 million of direct, induced and consumption expenditures, and indirect income was supported by activity at the airports, while the visitors using Troutdale and Hillsboro airports generated another \$4.4 million of direct, induced and indirect income.

Local businesses received \$58.6 million of revenue from services provided at the two airports, while visitor industry businesses such as hotels and restaurants received nearly \$8 million of revenue from the spending of the visitors using the airports.

The airport tenants made \$32.2 million of local purchases supporting the 367 indirect jobs, while the visitor industry firms made \$771,000 of local purchases.

The activity at the two general aviation airports created \$7.4 million of state and local taxes, while the visitors using the two airports generated an additional \$391,000 of state and local taxes.

### ***III. Summary of the Economic Impacts of the Real Estate Tenants of the Port's Business and Industrial Parks***

This chapter summarizes the impacts of the real estate tenants of the Port of Portland developed industrial parks. The impacts are measured for the year 2006, and are 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 owned businesses and industrial parks. Impacts were measured for all tenants of Swan Island/Mocks Landing, Port Center, Rivergate, Troutdale Industrial Park, and Portland International Center and excludes marine terminals, airport properties, and other Port-owned properties not contained in these parks.

The economic impacts generated by these tenants are measured in terms of jobs, personal income, business sales revenue, and state and local taxes. 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.

It is to be emphasized that the tenants of Port property are in some cases engaged in seaport, airport and shipyard activity. As a result, the impacts of such tenants have already been attributed to maritime activities at the seaport, passenger and air cargo activity at Portland International Airport and the general aviation reliever airports at Troutdale and Hillsboro. In addition, some tenants of Port-owned business parks ship air and marine cargo through Port facilities and again are accounted for, in part, in the economic impacts attributed to other Port operating divisions. Therefore, even though the impacts measured for the Port real estate tenants are defined in the same way as for the seaport and airport activity, the real estate impacts cannot be added to the impacts generated by these two other lines of businesses operated by the Port of Portland.

With respect to the real estate analysis, the impacts with the tenants of the Port of Portland business and industrial parks are generated by the demand for the goods and services produced by the firms, and not by activity specific to transportation services provided by the Port of Portland. As a result, the impacts generated by tenants of the Port of Portland real estate holdings are related to the Port of Portland, but not directly dependent upon Port activities. Some of these companies located in these parks are there as a direct result of efforts by the Port of Portland to recruit them, and would likely not have located in Portland otherwise. Other firms would likely have located in Portland anyway. It is impossible to defensibly quantify which firms are which.

Table E-5 summarizes the economic impacts generated by the tenants of the Port of Portland Industrial Parks for the year 2006.



Table E-5  
 Summary of the Economic Impacts of the  
 Tenants of the Port of Portland Industrial Parks  
 (2006)

<b>JOBS</b>	
DIRECT	15,192
INDUCED	7,504
INDIRECT	<u>12,264</u>
<b>TOTAL</b>	<b>34,961</b>
<b>PERSONAL INCOME (1,000)</b>	
DIRECT	\$479,319
INDUCED	\$592,979
INDIRECT	<u>\$728,872</u>
<b>TOTAL</b>	<b>\$1,801,170</b>
<b>BUSINESS REVENUE (1,000)</b>	<b>\$4,840,551</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$1,135,545</b>
<b>STATE AND LOCAL TAXES (1,000)</b>	<b>\$183,719</b>

The impact analysis is based on a survey of 300 tenants and subtenants. These tenants represent a wide spectrum of economic activity, including construction, manufacturing, wholesale and retail trade, warehousing and distribution, business services and government agencies.

The tenants of the Port of Portland Industrial Parks generated the following economic impacts to the regional economy:

- 15,192 direct jobs; these are the full-time equivalent jobs held by employees of the real estate tenants;
- 7,504 induced jobs; these induced jobs are with local and regional industries supplying goods and services to the 15,192 directly employed workers;
- 12,264 indirect jobs are supported in the local economy as the result of the local purchases of goods and services by the tenants;

- About 55% of the 15,192 direct jobs are held by residents of the City of Portland and Multnomah County, while another 19% of the jobs are held by residents of Clark County, Washington;
- The 15,192 direct employees earned \$479.3 million in wages and salaries. When the re-spending and consumption effect of this direct income is considered, an additional \$593.0 million of income and regional consumption activity is created. The indirect job holders received \$728.9 million of wages and salaries. The real estate tenant activity created a total wage and salary income impact of \$1.8 billion;
- The real estate tenants received \$4.8 billion of business sales receipts;
- \$183.7 million of state, county and municipal taxes were generated by the non-maritime tenants;
- Overall, the manufacturing sector and the wholesale and retail sectors each account for about one-third of the direct, induced and indirect job impacts created by the real estate tenants.

In addition to measuring the baseline impacts of the real estate tenants of the Port of Portland industrial parks, a computerized real estate development model has been developed that will enable the Port to:

- Analyze various growth scenarios for particular industries or groups of industries;
- Evaluate alternative uses of a specific parcel of real estate in terms of local and regional impacts, including the comparison of impacts of maritime versus non-maritime uses of waterfront land;
- Demonstrate to the local community the positive economic benefits of a new tenant.

It is to be emphasized that this study is designed to provide a framework that the Port of Portland can use in formulating and guiding the future development of Port-owned real estate. The greater value of the report is in its use and application in evaluating future real estate decisions, rather than its description of the current inventory of economic activity of the Port's real estate holdings.