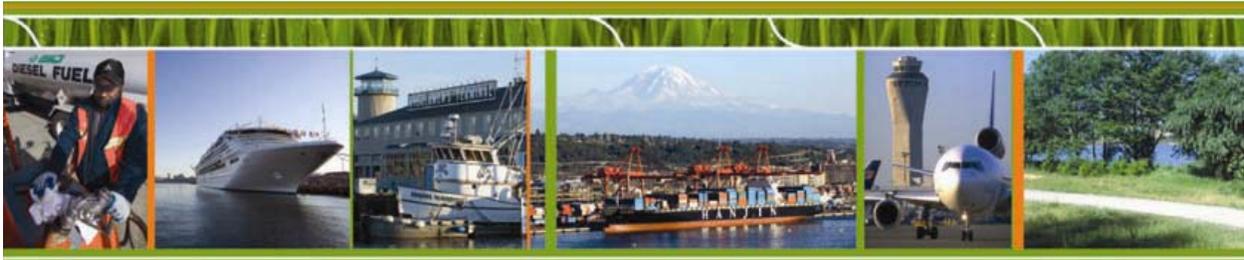


# THE 2007 ECONOMIC IMPACT OF THE PORT OF SEATTLE

**Revised Final Draft**

**PREPARED FOR:  
THE PORT OF SEATTLE**

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## I. OVERVIEW OF THE ANALYSIS

The Port of Seattle retained the services of Martin Associates to evaluate the economic impacts generated by waterborne activity in the Seattle seaport, airport activity at the Seattle-Tacoma (Sea-Tac) International Airport and the economic impacts generated by the Port's non-maritime and non-aviation tenants.

The measurement of the economic impacts of the Seattle seaport consists of the measurement of the impacts of five distinct types of waterborne activity that occurs in the Seattle seaport. These five types of waterborne activities are:

- *Marine cargo activity*, which includes waterborne cargo moving via the Port of Seattle facilities (i.e., facilities owned and operated by the Port of Seattle, and facilities leased to private operators).
- *Fishing activity at the Port of Seattle's marine terminals*, which includes the impacts generated by purchases of supplies, shipyard services, equipment and fishing gear, insurance and legal services by fishing vessels using the Port of Seattle's Fishermen's Terminal, by catcher processors homeporting at Port facilities, most notable Terminal 91, as well as commercial fishing activity at the Maritime Industrial Center.
- *Waterborne passenger activity*, which consists of the Port's cruise business activity and harbor cruises. The impacts of the passenger services are limited to the actual waterborne operations and shore-side operations of the passenger vessel operators. Also included are the impacts of cruise passengers on the local visitors industry.
- *Marina activity*, which includes recreational boats that are moored at, as well as transient recreational boating activity at the Port-owned marinas such as the Shilshole Bay Marina, Bell Harbor, Harbor Island, and Fishermen's Terminal.
- *Non-marine cargo and non-aviation Port of Seattle real estate tenants*, which include offices, restaurants, retail stores, industrial and tourism related operations located on Port of Seattle owned-property.

Airport activity at Sea-Tac International Airport consists of activity generated on-site at the airport due to passengers and aircraft operations, as well as activity generated by visitors to the Seattle area who arrived via Sea-Tac.

A major emphasis of the study is its defensibility and realistic assessment of the impacts generated by activity at the Seattle seaport and at Sea-Tac. The study is based on interviews with 929 firms providing services to the Seattle seaport operations, real estate tenants, and Sea-Tac International Airport. A greater than 98 percent coverage of the firms in the Seattle seaport and airport community has been achieved, underscoring the defensibility of the study. The impacts can

be traced back to the company level of detail. The data collected from the interviews were then used to develop operational models of the Seattle seaport, Fishermen's Terminal, Sea-Tac International Airport, passenger cruise activity, recreational boating, and Port real estate tenant's impacts. In addition to the data collected from the interviews, an in-terminal passenger survey of 950 passengers using Sea-Tac was conducted to assess impacts of visitors arriving in the Seattle area via Sea-Tac. Also, a survey of 600 cruise passengers and ship crew was conducted as part of this study to estimate the expenditure patterns of passengers boarding cruise ships at the Port of Seattle.

The results of the analysis include a snapshot of the economic impact of the Seattle seaport, Sea-Tac and real estate tenants in 2007, as well as the development of impact models for each business unit operated by the Port of Seattle. These models provide the Port of Seattle with tools to update the economic impacts on an annual basis, as well as to evaluate the sensitivity of the resulting local and regional impacts to changes in underlying factors, and to assess the economic impacts of specific Port of Seattle capital development projects.

With respect to the seaport, the impacts of changes in such factors as tonnage levels (by commodity and trade route), vessel call levels, labor productivity, inland modal distribution (rail vs. truck), and inland markets for waterborne cargo can be evaluated. The marina model can be used to assess the impacts of changes in the composition of the boats moored at each marina, the expenditures of moored boats, the number of moored and transient boats and the characteristics of spending patterns associated with the passengers of transient boats. For fishing activity at the Port's terminals, the impact model can test the sensitivity of the impacts to changes in the number of fishing boats using the terminals and changes in expenditure profiles by type of boat. The cruise model can be used to estimate the impact of new cruise service, changes in passenger expenditures, size of ship, and type of cruise, and annual updates.

For the airport, the airport sensitivity model provides a tool to measure the impacts of changes in such factors as passenger levels, mix of international vs. domestic passengers, flight levels, aircraft mix at peak vs. off-peak hours, labor productivity and work rules and aircraft load factors. Both the seaport and airport models are designed to estimate the impacts of new facilities development or expansion, as well as alternative land uses.

The real estate model can be used to assess the potential impacts of new tenants on the local and regional economy, while the cruise model can be used to assess the impacts of the growing service at the Port of Seattle.

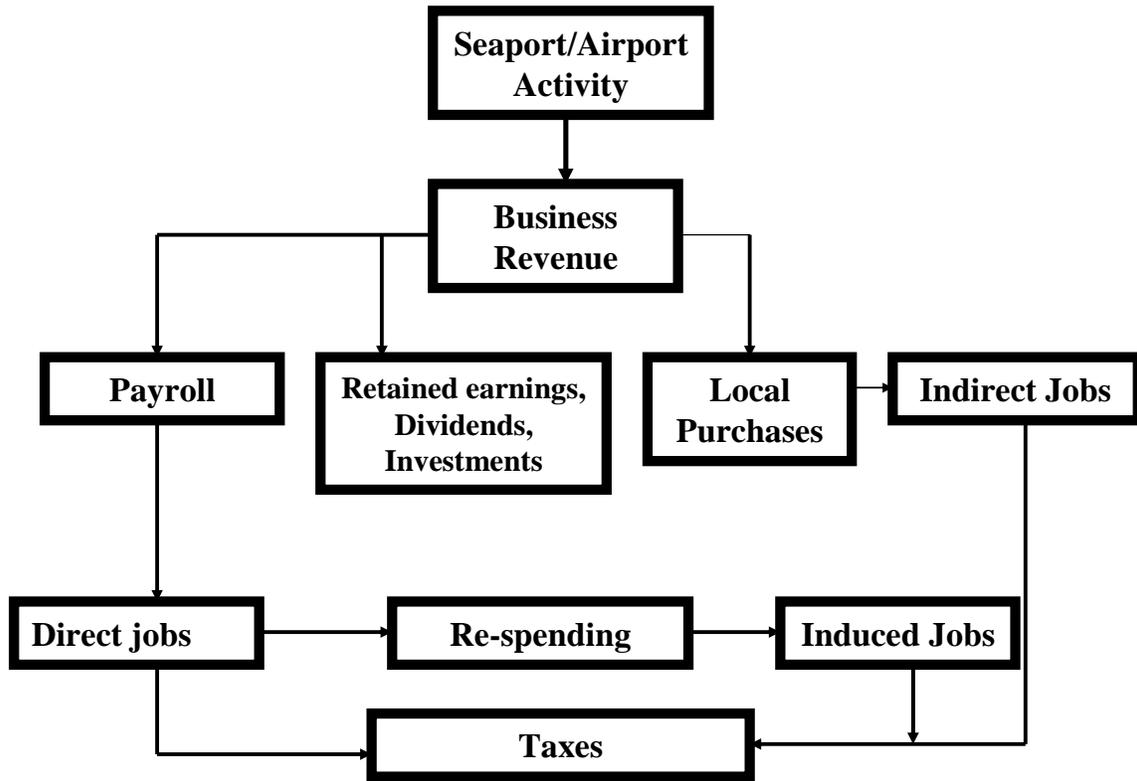
For the most part, the same methodology has been used to estimate the 2007 economic direct impacts as was used by Martin Associates to estimate the 1987, 1993, 1999, and 2003 direct economic impacts of the Port of Seattle's seaport cargo and airport activity. Real estate impacts are not compared since the level of real estate activity is dependent upon lease renewals, as well as new retail, office, commercial and industrial space offered by the Port of Seattle. This activity is, for the most part, not dependent on business level activity "created" by the Port of Seattle, but instead the business climate in Seattle. As a result, comparisons between 2007 and 2003 real estate activity are not made.

The remainder of this chapter presents an overview of the impact analysis and a summary of the results.

## 1. FLOW OF IMPACTS

Passenger and air cargo activity at an airport, waterborne activity at a seaport, and real estate activity contribute to the local and regional economy by generating business revenue to local and national firms providing services to these sectors. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. Exhibit I-1, below, shows how air traffic activity at Seattle-Tacoma International Airport, the waterborne activity in the Seattle seaport, and real estate activity of Port of Seattle tenants generate impacts throughout the local, state and national economies. As this exhibit indicates, the impact of an airport, seaport and real estate tenants, on a local, state or national economy cannot be reduced to a single number, but instead, the seaport and airport activities create several impacts. These are the revenue impact, employment impact, personal income impact, and tax impact. *These impacts are non-additive*. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting. Exhibit I-1 shows graphically how activity at Sea-Tac and the Seattle seaport generate the four impacts.

Exhibit I-1  
Flow of Economic Impacts Generated by  
Marine and Airport Activity



**1.1 Business Revenue Impact**

At the outset, activity at the airport and seaport generates business revenue for firms that provide services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and services, to pay for the use of airports and seaports and to make Federal, state and local tax payments. The remainder is used to pay stockholders, retire debt, make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the State of Washington are those portions paid out in salaries to Washington employees, for local purchases by individuals and businesses directly dependent on the seaport and airport, and in contributions to state and local taxes, as well as Federal taxes. Landing fees and terminal rentals paid by airlines provide for some of the costs of operation of the airport and capital costs of new construction, while terminal leases paid to the Port of Seattle by terminal operators;

wharfage and dockage fees paid by the steamship lines and cruise lines; and revenue from real estate leases, generate revenue to the Port of Seattle.

## 1.2 Employment Impact

The employment impact of airport and seaport activity consists of five levels of job impacts.

- Direct employment impact - jobs directly generated by airport and seaport activity. Direct jobs generated by marine cargo include jobs with railroads and trucking companies moving cargo between inland origins and destinations and the marine terminals, longshoremen, steamship agents, freight forwarders, stevedores, etc. Direct jobs generated by the airport include jobs with airlines, catering companies, retail concessions located in the terminals, etc. Direct jobs generated by the fishing fleet using Port of Seattle facilities include crew, shipyard employees, local fishing gear suppliers, insurance brokers and marine attorneys, etc. Direct jobs supported by the passenger cruise service include jobs with firms providing services to the vessel as well as local hotels, restaurants, transportation firms, and retail stores providing services to the passengers. Direct jobs supported by the marina activity include jobs directly involved with operating the Port of Seattle marinas, as well as jobs supported by the direct purchases by the boat owners including boat repair, equipment, nautical supplies, etc. For transient boats calling the Port's marinas, direct jobs are measured for the local restaurants and retail outlets. Finally, for the real estate tenants, the direct jobs include those individuals directly employed by the real estate tenants of the Port.

It is to be emphasized that these are classified as directly generated in the sense that these jobs would experience near term dislocation if the Port of Seattle seaport facilities were to be closed to maritime, fishing, cruise, and marina activity; air operations at Sea-Tac were discontinued; and Port of Seattle real estate tenants were not able to relocate to non-port property, and as a result leave the area. These jobs are, for the most part, local jobs and are held by residents of King County.

- Induced employment impact - jobs created throughout the local economy because individuals directly employed due to airport and seaport activity spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the region and state, since they are estimated based on local and regional statewide purchases.
- Air visitor industry employment impact - are service jobs in the community (hotel, restaurant, retail employees) resulting from the purchases by 7.6 million visitors to the Seattle area arriving via Sea-Tac International Airport in 2007. Without air service, many of these visitors would not reach the area, making the resultant jobs directly associated with, but not entirely dependent, upon air service.
- Indirect Jobs - are jobs created in the State of Washington due to purchases of goods and services by firms, not individuals. These jobs are estimated directly from local purchases

data supplied to Martin Associates by the 929 companies interviewed as part of this study, and include jobs with local office supply firms, maintenance and repair firms, parts and equipment suppliers, etc. It is to be emphasized that special care was taken to avoid double counting, since the current study counts certain jobs as direct, which are often classified as indirect by other approaches.

- Related user employment impact - jobs with firms using the seaport or airport to ship and receive cargo and with firms whose employees are regular users of the sea- and airport. These jobs are not entirely dependent upon the sea- or airport, but reflect the importance of the Seattle seaport and Sea-Tac to local firms. While the facilities and services provided in the seaport and airport are a crucial part of the infrastructure allowing these jobs to exist, they would not necessarily be immediately displaced if marine and air activity were to cease. These include shippers of agricultural products located in eastern Washington, as well as importers of consumer goods, and local manufacturers located within the state.

### **1.3 Personal Earnings Impact**

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to airport or seaport activity. Re-spending of these earnings throughout the State of Washington for purchases of goods and services is also estimated. This, in turn, generates additional jobs -- the induced employment impact. This re-spending throughout the state is estimated using a state personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within a state. The re-spending effect varies by state: a larger re-spending effect occurs in states that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with states that import a relatively large share of consumer goods and services (since personal earnings "leak out" of the state for these out-of-state purchases). The direct earnings are a measure of the local impact since those directly employed by airport or seaport activity receive the wages and salaries. The re-spending effect is regional.

### **1.4 Tax Impact**

Federal, state and local tax impacts are tax payments to the state and local governments by firms and by individuals whose jobs are directly dependent upon and supported (induced and indirect jobs) by activity at Sea-Tac International Airport, the Seattle seaport and Port real estate tenants. The tax impacts include state and local taxes collected from all sources, both personal and business taxes, as well as airport specific taxes such as the air cargo waybill tax, the international departure tax, the domestic passenger tax as well as various security tax levies imposed after 9/11. State and local taxes are based on income indices developed by the Tax Foundation and these indices are applied to the direct, induced and indirect personal income impacts.<sup>1</sup>

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<sup>1</sup> The Tax Foundation publishes similar tax indices for state and local tax burdens for each state in the United States.

## 2. SUMMARY OF METHODOLOGY

A detailed methodology and technical report has been prepared under separate cover. The purpose of this section is to provide a summary of the methodological approach used to estimate the economic impacts of the Port of Seattle.

The methodological approach to this study is designed to provide highly defensible, as well as accurate results. In addition to the Port of Seattle, this same methodology has been used by Martin Associates in the last 23 years to assess the economic impacts of activity at more than 250 seaports including:

<i>Los Angeles</i>	<i>Texas City, TX</i>	<i>Brunswick, GA</i>
<i>Long Beach</i>	<i>Baton Rouge</i>	<i>Richmond, VA</i>
<i>Oakland</i>	<i>Port Everglades</i>	<i>Providence, RI</i>
<i>Portland</i>	<i>Palm Beach</i>	<i>Montreal</i>
<i>Sacramento</i>	<i>Jacksonville</i>	<i>Quebec City</i>
<i>San Francisco</i>	<i>Wilmington/Morehead City, NC</i>	<i>Prince Rupert, BC</i>
<i>Vancouver, BC</i>	<i>Virginia Port Authority</i>	<i>Halifax</i>
<i>Houston</i>	<i>Baltimore</i>	<i>Saint John, NB</i>
<i>Corpus Christi</i>	<i>Philadelphia</i>	<i>18 U.S. Great Lakes Ports.</i>
<i>Freeport, TX</i>	<i>Wilmington, DE</i>	

Similarly, the airport impact methodology has been used in the last 23 years by Martin Associates to estimate the economic impacts of airport activity for a majority of the major airports in North America, including:

<i>Hartsfield Atlanta Int'l Airport</i>	<i>Milwaukee's General Mitchell Int'l Airport</i>
<i>Miami Int'l Airport</i>	<i>Toronto's Lester B. Pearson Int'l Airport</i>
<i>Stapleton Int'l and Denver Int'l Airports</i>	<i>Baltimore-Washington Int'l Airport</i>
<i>San Francisco Int'l Airport</i>	<i>Reagan National and Dulles Int'l Airports</i>
<i>San Jose Int'l Airport</i>	<i>Portland (OR) Int'l Airport</i>
<i>Sacramento Int'l Airport</i>	<i>Oakland Int'l Airport</i>
<i>Minneapolis/St. Paul Int'l Airport</i>	<i>Harrisburg Int'l Airport</i>

### 2.1 Data Collection

The cornerstone of the Martin Associates approach is the collection of detailed baseline impact data from firms providing services at the airport and seaport. To ensure accuracy and defensibility, the baseline impact data was collected from personal and telephone interviews with 929 firms in the Seattle port, airport and port tenant community. These firms represent the universe of firms providing services at the Seattle seaport (including Fishermen's Terminal) and Sea-Tac International Airport and non-marine and non-aviation tenants, as identified by the following sources:

- Pacific Northwest Ports Handbook, 2008;
- "The Journal of Commerce", Transportation Telephone Tickler;
- The Port of Seattle Tenant and Concessionaire Report;
- Seattle-Tacoma International Airport Directory;
- Internal Port of Seattle tenant lists and customer files; and
- 2003 Martin Associates Database.

These 929 firms represent a greater than 98 percent coverage of all firms identified in the seaport, airport and real estate community. For the most part, multiple interviews were conducted with several persons in each firm.

In addition to the interviews, an in-terminal survey of 950 passengers using Sea-Tac was also conducted to develop passenger characteristics. These interviews were conducted in the airport terminal during the week of November 17th, 2008.

## **2.2 Direct Jobs, Income, and Revenue Impacts**

The results of these interviews were then used to develop the baseline direct job, revenue, and income impacts for the seaport, airport, and real estate activity, and for the economic sectors and job categories associated with the airport, seaport and real estate tenants.

This baseline survey data was also used to develop operational models that can be used to update the impacts of the Seattle marine cargo, marina activity, cruise activity, activity at Fishermen's Terminal, real estate tenants, and the Sea-Tac International Airport on an annual basis and to evaluate the impacts of changes in:

- Marine cargo tonnage, by commodity;
- Seaport and airport labor productivity, and work rules;
- Modal distribution of seaport cargo (what percent of the inland transportation of a commodity is truck versus rail), as well as the geographical distribution of each commodity;
- Vessel calls;
- Air passenger volume;
- International versus domestic visitors using Sea-Tac;
- Number of flights;
- Mix of aircraft (wide body aircraft versus commuter aircraft);
- Number of recreational boats, by type of boat, moored at Port of Seattle facilities, as well as transient calls at the Port's marinas;
- Local purchases made by recreational boats moored at the Port of Seattle-owned marinas, as well as transient recreational boating activity at these facilities;
- Number of fishing boats, by type of fishing fleet, using the Port of Seattle's Fishermen's Terminal, Terminal 91 and the Maritime Industrial Center;
- Local purchases made by fishing boat operators based at Fishermen's Terminal, Terminal 91 and the Maritime Industrial Center;

- Cruise service at the Port's cruise terminals; and
- New real estate tenants of the Port, by type of activity.

Also, the operational models can be used to evaluate alternative facilities expansion projects and new construction, such as a new or expanded marine cargo or cruise terminal and terminal and runway expansion projects at Sea-Tac.

### **2.3 Induced Impacts**

Induced impacts are those generated by the purchases of the individuals employed as a result of seaport, airport and real estate activity. For example, a portion of the personal earnings received by those directly employed due to activity at the seaport and airport is used for purchases of goods and services, both in-state, as well as out-of-state. These purchases, in turn, create additional jobs in the State of Washington, which are classified as induced. To estimate these induced jobs, a personal earnings multiplier for the Seattle region was developed from data provided by the Bureau of Economic Analysis, Regional Input-Output Modeling System. This income multiplier is used to estimate the total personal earnings generated in the Seattle region, primarily defined as King County. A portion of this total personal earnings impact is next allocated to specific local purchases (as determined from consumption data for Seattle residents, as developed from the U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2007). These purchases are next converted into retail and wholesale induced jobs in the regional economy.

*Induced jobs are not estimated at lower levels of purchasing rounds (after the wholesale round) since it is not possible to trace with a sufficient degree of accuracy, geographically, where purchases at the remaining levels occur. However, about 80 percent of the consumption will likely occur at the first two rounds of purchases, which are most likely local retail and wholesale purchases.*

### **2.4 Indirect Jobs**

Indirect jobs are generated in the local economy as the result of purchases by firms that are directly dependent upon activity at the Seattle seaport, cruise activity at the Port's cruise terminal, Port of Seattle marinas, fishing activity at the Port-owned facilities supporting commercial fishing, Sea-Tac International Airport, as well as by the non-maritime and non-aviation tenants of the Port of Seattle. These purchases are for goods such as office supplies and equipment, maintenance and repair services, raw materials, communications and utilities, transportation services and other professional services. To estimate the indirect economic impact, local purchases, by type of purchase, were collected from each of the 929 firms interviewed. These local purchases were then combined with employment to sales ratios in local supplying industries, developed from U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System for the State of Washington and King County. These job to sales ratios capture the numerous spending rounds associated with the supply of goods and services. Special care has been exercised to avoid double counting the indirect impacts, and to specifically include only the expenditures by the directly dependent firms that are, in fact, local.

## 2.5 Related Impacts

Related impacts measure the jobs with shippers and consignees moving cargo through the Seattle seaport and via airlines serving Sea-Tac International Airport. These jobs are classified as related jobs, since the firms using the seaport and airport facilities for the movement of marine and air cargo can and do use other seaports and airports. For example, firms exporting containerized cargo typically select a steamship line rather than the seaport through which the cargo will move, and the port through which the export containerized cargo moves is ultimately determined by the steamship line's port call rotation. However, with more sophisticated logistics operations and the development and reliance on distribution centers in West Coast port cities, predominantly Los Angeles and Long Beach, importers have become more involved in the port choice, and the steamship lines have responded to these demands by adjusting port rotations accordingly. Similarly, air cargo shippers often select a freight forwarder or an express air courier to arrange and handle the air cargo shipment. The air courier or forwarder ultimately determines which airport will be used, based on the selection of the air carrier. Therefore, the air cargo shippers are essentially "port blind". However, the estimate of the number of jobs related to cargo moving via the seaport and airport highlight the importance of the sea and air transportation infrastructure developed by the Port of Seattle as a catalyst to economic growth and development.

Related impacts for the seaport were estimated by multiplying the value of the Washington state cargo moving via the marine terminals with jobs to sales ratios specific to the exporters and importers.<sup>2</sup> Values of airfreight moving via Sea-Tac were based on a detailed analysis of Pacific Northwest air cargo shipments conducted by Martin Associates for the Port of Seattle<sup>3</sup>.

The ratio of jobs to value of air cargo shipments was also developed from the above noted source. The value of enplaned air cargo multiplied by the ratios of jobs to value of air cargo resulted in an estimate of related air cargo jobs.

## 2.6 Tax Impacts

The tax impacts include state and local taxes collected from all sources, both personal and business taxes, as well as airport specific taxes. The state and local per capita income tax burdens (developed by the Tax Foundation for the State of Washington) are applied to the total direct, induced and indirect income impacts to estimate total state and local taxes created by seaport and airport activity at the Port of Seattle. The aviation specific taxes, such as the air cargo waybill tax, the international departure tax, the domestic passenger tax as well as various security tax levies

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<sup>2</sup> The value of cargo moving via the marine terminals was determined from U.S. Census of Foreign Trade Statistics, while the ratios of jobs to sales data for related Washington State exporters and importers were developed from data supplied to Martin Associates by the Bureau of Economic Analysis, Regional Input-Output Modeling System. The Port of Seattle supplied the analysis regarding the share of marine cargo exports and imports from and to the State of Washington.

<sup>3</sup> The Economic Impacts of Air Cargo at Sea-Tac International Airport, conducted by Martin Associates for the Port of Seattle, March 7, 2001

imposed after 9/11, are estimated based on the specific tax formulas and the relevant passenger or air cargo activity at Sea-Tac.

### **3. TOTAL IMPACT OF THE PORT OF SEATTLE**

As Table I-1 indicates, the Port of Seattle seaport and airport facilities, as well as Port non-maritime and non-aviation related real estate tenants generate the following economic impacts for the local and regional economy:

- 111,317 direct jobs are generated by Port of Seattle-owned transportation facilities. As the result of local and regional purchases by those 111,317 individuals holding the direct jobs, an additional 62,128 induced jobs are supported in the region.
- 20,540 indirect jobs were supported by \$1.4 billion of local purchases by businesses supplying services at the Port-owned facilities.
- \$3.8 billion of direct wages and salaries were received by those 111,317 directly employed by the Port of Seattle's transportation infrastructure. As the result of re-spending this income, an additional \$5.1 billion of income and consumption expenditures are created in the Seattle region, primarily King County. The 20,540 indirect job holders earned an additional \$700 million of personal income.
- Businesses providing services at the Port-owned marine terminals and Sea-Tac International Airport, as well as real estate tenants, received \$17.6 billion of revenue, excluding the value of cargo shipped through the airport and marine facilities, and the landed value of the seafood caught by the fleet using Fishermen's Terminal, Terminal 91 and the Maritime Industrial Center. The Port of Seattle received \$460.1 million from Seaport and Airport operations.
- \$867.0 million of state and local taxes were generated by activity at the Port of Seattle marine terminals, real estate tenants, and Sea-Tac International Airport. In addition, \$439.4 million of federal aviation-specific taxes were generated by activity at Sea-Tac International Airport.

Table I-1  
Summary of the Economic Impacts Generated by the Port of  
Seattle Seaport, Real Estate and Airport Activity, 2007

	MARINE CARGO	FISHING	MARINAS	PASSENGERS*	SEA-TAC ON-SITE	SEA-TAC VISITORS	REAL ESTATE	TOTAL
<b>JOBS</b>								
<b>DIRECT JOBS</b>	12,428	5,607	123	1,865	18,773	71,129	1,392	111,317
<b>INDUCED</b>	16,639	8,028	129	1,059	11,538	24,046	689	62,128
<b>INDIRECT</b>	<u>4,224</u>	<u>1,337</u>	<u>100</u>	<u>554</u>	<u>4,723</u>	<u>8,161</u>	<u>1,441</u>	<u>20,540</u>
<b>TOTAL</b>	33,291	14,972	352	3,479	35,034	103,336	3,521	193,986
<b>INCOME (\$1000)</b>								
<b>DIRECT</b>	\$637,375	\$823,477	\$4,575	\$57,825	\$778,150	\$1,380,523	\$79,575	\$3,761,500
<b>RE-SPENDING</b>	\$1,972,676	\$966,679	\$14,161	\$83,633	\$1,124,504	\$858,685	\$46,034	\$5,066,373
<b>INDIRECT</b>	<u>\$186,731</u>	<u>\$51,845</u>	<u>\$3,887</u>	<u>\$20,472</u>	<u>\$210,203</u>	<u>\$179,990</u>	<u>\$46,689</u>	<u>\$699,817</u>
<b>TOTAL</b>	\$2,796,782	\$1,842,000	\$22,623	\$161,930	\$2,112,858	\$2,419,199	\$172,298	\$9,527,690
<b>REVENUE (\$1000)</b>	\$3,060,440	\$814,364	\$13,831	\$227,849	\$7,596,875	\$5,541,631	\$304,225	\$17,559,215
<b>LOCAL PURCHASES (\$1000)</b>	\$438,823	\$104,163	\$7,845	\$33,412	\$439,320	\$345,272	\$69,759	\$1,438,594
<b>STATE AND LOCAL TAXES (\$1000)</b>	\$254,507	\$167,622	\$2,059	\$14,736	\$192,270	\$220,147	\$15,680	\$867,020

Totals may not add due to rounding

\*Impacts of passenger activity at the Seattle Seaport include impacts created by cruise activity and harbor tours, but are net of airport impacts created by passengers embarking on cruise services at the Port of Seattle. These passengers are counted in the visitors' industry impact of Sea-Tac. The Cruise impacts reflect the impacts created by cruise activity in the summer of 2008, as this data was available at the time of the analysis. Air cargo and marine cargo activity for 2008 is not available at the time of the analysis.

#### 4. ECONOMIC IMPACT OF THE PORT OF SEATTLE SMALL BUSINESS PROGRAM

In 2007, the Port of Seattle spent \$53.6 million on service and construction contracts with small businesses located within the state. These purchases from small businesses supported 366 jobs within the state with a total salary and wage impact of \$16.9 million. Of these 366 jobs with small businesses, nearly 90 jobs are with minority and women owned businesses in the State.

## II. THE ECONOMIC IMPACTS OF THE SEATTLE SEAPORT

The impacts generated by the Seattle seaport consist of:

- Impacts generated by cargo and vessel activity at marine facilities owned and operated by the Port of Seattle, as well as facilities owned by the Port, but leased to private terminal operators.
- Impacts generated by the fishing fleet at the Port of Seattle-owned Fishermen's Terminal, as well as by fishing vessels homeported at Terminal 91 and the Maritime Industrial Center, including impacts generated by the purchases of supplies and services by the fishing fleet based at these Port of Seattle facilities. Also included are impacts with retail tenants and restaurants located at Fishermen's Terminal, as well as cold storage and fish processing operations at Terminal 91. *It is to be emphasized that the Washington based fishing fleet uses other non-Port of Seattle terminals and moorings throughout the Seattle and Puget Sound areas. The impacts of these vessels are not included in this study.*
- Impacts generated due to cruise vessel operations in the Seattle seaport, including harbor tours and Alaskan cruises.
- Impacts of Recreational Boating at the Port of Seattle owned marinas, including boats moored and transient calls at Shilshole Marina, Bell Harbor, Harbor Island, and Fisherman's Terminal.
- Impacts of Real Estate Tenants on Port of Seattle Property, including offices, retail, and light industrial tenants. These are real estate and industrial tenants of the Port that are not involved in waterborne or airport activity.

In the remainder of this chapter the impacts generated by the Seattle seaport are summarized. First, the impacts generated by all activity (marine cargo, the commercial fishing, cruise service and harbor tours, and recreational boating. Secondly, the impacts generated by type of activity are summarized.

## 1. THE ECONOMIC IMPACTS OF THE SEATTLE SEAPORT

Table II-1 summarizes the economic impacts generated by seaport activity.

Table II-1  
Economic Impacts of Port of Seattle Seaport Activity

	MARINE CARGO	FISHING	MARINAS	CRUISE	HARBOR TOURS	REAL ESTATE	TOTAL
<b>JOBS</b>							
<b>DIRECT JOBS</b>	12,428	5,607	123	1,955	190	1,392	21,695
<b>INDUCED</b>	16,639	8,028	129	1,125	106	689	26,716
<b>INDIRECT</b>	4,224	1,337	100	701	41	1,441	7,845
<b>TOTAL</b>	33,291	14,972	352	3,782	337	3,521	56,255
<b>INCOME (\$1000)</b>							
<b>DIRECT</b>	\$637,375	\$823,477	\$4,575	\$64,147	\$5,278	\$79,575	\$1,614,427
<b>RE-SPENDING</b>	\$1,972,676	\$966,679	\$14,161	\$92,764	\$7,634	\$46,034	\$3,099,948
<b>INDIRECT</b>	\$186,731	\$51,845	\$3,887	\$20,052	\$3,553	\$46,689	\$312,757
<b>TOTAL</b>	\$2,796,782	\$1,842,000	\$22,623	\$176,963	\$16,466	\$172,298	\$5,027,131
<b>REVENUE (\$1000)</b>	\$3,060,440	\$814,364	\$13,831	\$312,497	\$28,606	\$304,225	\$4,533,963
<b>LOCAL PURCHASES (\$1000)</b>	\$438,823	\$104,163	\$7,845	\$31,220	\$8,742	\$69,759	\$660,552
<b>STATE AND LOCAL TAXES (\$1000)</b>	\$254,507	\$167,622	\$2,059	\$16,104	\$1,498	\$15,680	\$457,470

Totals may not add due to rounding

In 2007, marine cargo activity at the private and public marine terminals located in the Seattle seaport, the fishing fleet at Fishermen's Terminal and the vessels homeported at other POS marine terminals, waterborne passenger activity, recreational boating, and real estate activity generated:

- 21,695 direct jobs. As the result of purchases in the local and regional economy with the income received by those holding the direct jobs, an additional 26,716 induced jobs were generated in the Puget Sound region. As the result of \$660.6 million of local purchases by the firms directly providing services at the Port of Seattle marine facilities, 7,845 indirect jobs with local supplying firms were also supported in the regional economy.
- \$1.6 billion of personal income was received directly by those employed directly by activities at the Seattle seaport. As the result of re-spending this income for purchases of goods and services by those directly employed, an additional \$3.1 billion of income and consumption expenditures are generated in the region. A portion of this re-spending impact is used to pay those holding the 26,716 induced jobs, while another portion is received by the firms providing the goods and services to the individuals directly employed due to seaport activity. In addition, those holding the 7,845 indirect jobs received \$312.8 million of indirect wages and salaries. In total, \$5.0 billion of wages and salaries were created by cargo, fishing, passenger, marina and real estate activity at Port of Seattle facilities in 2007.
- The firms directly dependent upon supplying the services to support the seaport activity (those firms employing the 21,695 direct jobs) received \$2.5 billion of business revenue.<sup>4</sup> Of

<sup>4</sup> Business revenue is a measure of the value of the services provided by the firms. The value of the marine

this revenue, these firms made \$660.6 million of local purchases for goods and services. It is these local purchases that supported 7,845 indirect jobs in the regional economy.

- A total of \$457.5 million state and local taxes were generated by Port of Seattle seaport activity.
- In addition to these direct, induced and indirect impacts, about 135,100 jobs in the State of Washington are related to the marine cargo moving via the marine terminals in the Seattle Harbor. The majority of these jobs are created by international and Alaskan containerized cargo handled at the Port of Seattle's marine terminals.

In the next section, the impacts generated by marine cargo at the Port of Seattle marine cargo terminals seaport are described. Section 3 of this chapter describes the impacts of commercial fishing activity, and section 4 details the impacts of the waterborne passenger activity. The impacts of recreational boating at the Port of Seattle's marinas are described in section 5, while the impact of the Port of Seattle Real Estate tenants is discussed in section 6.

## **2. THE ECONOMIC IMPACTS OF MARINE CARGO ACTIVITY IN THE SEATTLE SEAPORT**

In 2007, a total of 22 million metric tons of cargo moved over marine facilities owned by the Port of Seattle. Of the 22 million tons of cargo, international containerized cargo accounted for 13.3 million tons. Containerized cargo moving to and from Alaska over the Port's marine terminals accounted for another 1.9 million tons and about 5.3 million tons of grain were exported via the Port of Seattle-owned grain elevator. About 1.2 million tons of petroleum products moved via Port of Seattle facilities. Breakbulk cargo and other liquid bulk cargo accounted for another 163,300 tons.

### **2.1 Overview of the Seaport Impact Structure**

The movement of these 22 million metric tons of cargo through the Port of Seattle marine cargo terminals generates economic activity in various business sectors of the state and local economy. Specifically, five distinct economic sectors are involved in providing services to move the cargo through the Port of Seattle marine terminals. These are the:

- Surface Transportation Sector
- Maritime Service Sector
- Port of Seattle
- Banking/Insurance/Law Sector
- Shippers/Consignees Using the Port of Seattle

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cargo shipped or received through the Port of Seattle seaport and the landed value of seafood caught by the fishing fleet based at Port of Seattle Terminals is not included in this business revenue impact measure.

Jobs, income, revenue, and tax impacts are estimated for each sector, as well as for specific job categories within each sector.

### **2.1.1 *Economic Impact Sectors***

Within each sector, various participants are involved. Separate impacts are estimated for each of the participants. A discussion of each of the four economic impact sectors is provided below, including a description of the major participants in each sector.

#### **(1) The Surface Transportation Sector**

The surface transportation sector consists of both the railroad and trucking industries. These sectors are responsible for moving the various cargoes between the marine terminals and their inland origins and destinations. Two mainline railroads serve the Seattle seaport, the Burlington Northern/Santa Fe and the Union Pacific/Southern Pacific railroads. In general, the railroads play a key part in the Seattle seaport's role as a leading intermodal port. Furthermore, the railroads are integral in the movement of grain from Midwestern states to the Seattle seaport for export.

Many local and national trucking firms serve the seaport, as do numerous individual owner-operators. Trucking firms are involved in distributing local containerized cargo (both full container loads, as well as less-than-container load (LCL) cargo). Typically, trucks distribute the imported containers moving locally, as well as to Canada, and move export containers originating in the Seattle area to the marine terminals for export. Truck transportation is also the major mode used for moving Alaskan-bound cargo to the marine terminals; trucks are also a primary mode to distribute the dry bulk products. Finally, trucks play a major role in the drayage of containers between rail yards and the marine terminals.

#### **(2) The Maritime Service Sector**

This sector consists of numerous firms and participants performing functions related to the following maritime services:

- Cargo Marine Transportation;
- Vessel Operations;
- Cargo Handling; and
- Federal, State, and Local Government Agencies.

A brief description of the major participants in each of these categories is provided below:

- Cargo Marine Transportation - Participants in this category are involved in arranging for overland and water transportation for export or import freight through the seaport. The freight forwarder/customhouse broker is the major participant in this category. The freight forwarder/customhouse broker arranges for the freight to be delivered between the Seattle seaport and inland destinations, as well as the ocean transportation. This function performed by freight forwarders is most prevalent for general cargo commodities. For bulk cargo, arrangements are often made by the shipper/receiver, and the cargo passes over privately owned docks.
  
- Vessel Operations - This category consists of several participants. The steamship agents provide a number of services for the vessel as soon as it enters the Seattle seaport; the agents arrange for pilot services and towing, for medical and dental care of the crew, and for ship supplies. The agents are also responsible for vessel documentation. In addition to the steamship agents arranging for vessel services, those providing the services include:
  - Pilots - assist vessels navigating Puget Sound between Port Angeles and Seattle;
  - Chandlers - supply the vessels with ship supplies (food, clothing, nautical equipment, etc.);
  - Towing firms - provide tug assist service to vessels docking and undocking at a terminal;
  - Bunkering firms - provide fuel to the vessels;
  - Marine surveyors - inspect the vessels and the cargo; and
  - Shipyards/marine construction firms - provide repairs, either emergency or scheduled, as well as marine pier construction and dredging.
  
- Cargo Handling - This category involves the physical handling of the cargo at the Seattle seaport between the land and the vessel. Included in this category are the following participants:
  - Longshoremen - are members of the International Longshore and Warehouse Union, and are involved in the loading and unloading of cargo from the vessels, as well as handling the cargo prior to loading and after unloading, including stuffing and stripping containers;
  - Stevedoring firms - manage the longshoremen and cargo-handling activities;

- Terminal operators - are often stevedoring firms who operate the maritime terminals where cargo is loaded and off-loaded;
  - Warehouse operators - store cargo after discharge or prior to loading and consolidate cargo units into shipment lots; and
  - Container leasing and repair firms - provide containers to steamship lines and shippers/consignees and repair damaged containers.
- Government Agencies - This maritime service sector category involves Federal, state and local government agencies that perform services related to cargo handling and vessel operations at the Seattle seaport. U.S. Customs, Bureau of Immigration, U.S. Department of Labor, U.S. Department of Agriculture, and U.S. Department of Commerce employees are involved. In addition, both civilian and military personnel with the U.S. Coast Guard, U.S. Navy and the U.S. Army Corps of Engineers dedicated to the marine cargo moved via Port of Seattle marine terminals are included, as are members of the Military Sealift Command. The city police and fire departments are also included, as are state grain inspectors.

(3) Port of Seattle

This sector includes those individuals employed by the Port of Seattle whose purpose is to oversee port activity. The Port of Seattle leases terminal space to steamship lines and terminal operators and also leases equipment such as container cranes to the terminal operators.

(4) Banking/Insurance/Law Sector

While this sector is not directly involved in cargo or ship operations, it nonetheless does provide services such as financing export/import transactions, insuring cargo and vessels, and providing legal services to the Port of Seattle, businesses and individuals working on the Seattle seaport waterfront.

(5) Shippers/Consignees Using the Port of Seattle Marine Cargo Facilities

Shippers/Consignees included in this category are those shippers and consignees located throughout the State of Washington and particularly King County, whose businesses use the marine cargo facilities for the export and import of cargo. These users also ship and/or receive materials via other ports such as Tacoma, Los Angeles/Long Beach, Oakland and Vancouver, BC. It is to be emphasized that these shippers/consignees are not dependent upon the use of the Port of Seattle, since they are users of other ports as well. Since these users are not dependent upon the Port of Seattle, employment with these shippers/consignees is considered port-related, and not port-generated.

### ***2.1.2 Commodities Included in the Study***

A major use of an economic impact analysis is to provide a tool for port development planning. As a port grows, available land and other resources for port facilities become scarce, and decisions must be made as to how to develop the land and utilize the resources in the most efficient manner. Various types of facility configurations are associated with different commodities. For example, breakbulk cargo requires covered warehouse space, while containerized cargo requires significant investments in cranes and intermodal facilities.

An understanding of the commodity's relative economic value in terms of employment and earnings to the local community, the utilization and cost of providing the facilities, and the relative demand for the different commodities is essential in making future port development decisions. Because of this need for understanding relative commodity impacts and the impacts associated with marine terminal investments, economic impacts are estimated for the following commodities and commodity types handled via the Port of Seattle-owned and privately-owned marine terminals in the Seattle seaport:

- International containerized cargo;
- Domestic containerized cargo;
- Grain;
- Breakbulk cargo;
- Petroleum; and
- Other liquid bulk.

It should be emphasized that commodity-specific impacts are not estimated for each of the five economic sectors described in the last section. Specific impacts by commodity cannot be allocated to individual commodities with any degree of accuracy for the banking and insurance sector, shipyards and marine construction and the government job categories.

The impacts, by commodity, are estimated on a per ton basis order to determine the contribution of each commodity to the local economy on a throughput basis. The impacts per 1,000 ton ratio is a key input into port planning decisions regarding new facilities development and expansion.

The impacts generated by the Port of Seattle marine terminals are estimated:

- By sector of the local and regional economy, e.g., maritime service sector, surface transportation sector, banking and insurance sector, etc.;
- By commodity group, i.e., containerized cargo, breakbulk cargo (including steel and lumber), grain, petroleum, and other liquid bulk; and

- By the residency of individuals directly employed by the activity at the Port of Seattle marine terminals.

## 2.2 Summary of the Economic Impacts Generated by Cargo Activity at Port of Seattle Marine Terminals

The economic impacts generated by marine cargo handled at Port of Seattle marine terminals is summarized in Table II-2.

Table II-2  
Economic Impacts of Cargo  
Activity at Port of Seattle Marine Terminals

	Port of Seattle Cargo Operations
<b>JOBS</b>	
DIRECT	12,428
INDUCED	16,639
INDIRECT	<u>4,224</u>
<b>TOTAL JOBS</b>	<b>33,291</b>
<b>PERSONAL INCOME (1,000)</b>	
DIRECT	\$637,375
INDUCED	\$1,972,676
INDIRECT INCOME	<u>\$186,731</u>
<b>TOTAL INCOME</b>	<b>\$2,796,782</b>
<b>BUSINESS REVENUE (1,000)</b>	<b>\$3,060,440</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$438,823</b>
<b>STATE AND LOCAL TAXES (1,000)</b>	<b>\$254,507</b>

As this table indicates, maritime activity (cargo and vessel activity) at the Port of Seattle facilities created the following economic impacts:

- 12,428 direct jobs;
- 16,639 induced jobs were supported by the purchases of the 12,428 directly employed individuals;
- 4,224 indirect jobs were generated as a result of \$438.8 million of local purchases by firms directly dependent upon seaport activity at Port of Seattle marine cargo facilities;
- The 12,428 direct employees earned \$637.4 million of wages and salaries, for an average salary of \$51,285 per year;
- Businesses providing services to the Seattle seaport received \$3.1 billion of business revenue;
- A total of \$254.5 million of state and local taxes were generated by seaport activity; and
- 135,084 jobs in the State of Washington were related to the cargo moving via the Port of Seattle marine terminals the majority of which were related to international and domestic containerized cargo.

The next section details the employment impacts generated by the Seattle seaport.

## **2.3 Employment Impacts of the Seattle Seaport**

This section details the direct, induced, indirect and related job impacts generated by marine cargo and vessel activity in the Seattle seaport.

The direct employment impacts are first described.

### ***2.3.1 Direct Employment Impacts***

The distribution of the 12,428 direct job impacts by economic sector and job category is presented in Table II-3.

Table II-3  
Direct Jobs by Detailed Category

	DIRECT JOBS
<b>SURFACE TRANSPORTATION</b>	
<b>RAIL</b>	1,621
<b>TRUCK</b>	1,931
<b>MARITIME SERVICES</b>	
<b>TERMINAL EMPLOYEES</b>	444
<b>ILWU/DOCKWORKERS</b>	1,038
<b>TOWING</b>	95
<b>PILOTS</b>	20
<b>AGENTS</b>	166
<b>SURVEYORS/CHANDLERS</b>	492
<b>FORWARDERS</b>	422
<b>WAREHOUSE</b>	1,036
<b>GOVERNMENT</b>	1,770
<b>SHIPYARDS/SHIPREPAIR</b>	1,865
<b>BARGE</b>	1,017
<b>BUNKERS</b>	45
<b>BANKING/INSURANCE/LAW</b>	188
<b>PORT OF SEATTLE</b>	<u>282</u>
<b>TOTALS</b>	<b>12,428</b>

As this table indicates, the largest direct job impact occurs with truckers serving the Port's marine terminals, followed by jobs with shipyards and marine construction activity. Cargo activity creates 1,770 jobs with Federal, state and local government agencies, including security operations, civilian and military employment with the Coast Guard and other Federal agencies, as well as employment with City agencies including police and firefighters. There are 1,621 direct jobs with the railroads, including employment at the Seattle rail yards dedicated to intermodal cargo, as well as crew dedicated to moving the cargo to and from the Seattle seaport activity. The cargo activity also generates 1,038 full-time jobs with the International Longshore and Warehouse Union, and 1,036 jobs with warehousing and container repair activity.

*Employment Impacts by Commodity*

Table II-4 presents the distribution of the direct job impacts by commodity/handling type. A total of 8,287 direct jobs are allocated to commodities moving over the Port of Seattle marine cargo seaport terminals<sup>5</sup>. The importance of containerized cargo is

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<sup>5</sup> 4,141 jobs generated by cargo and vessel activity at seaport-wide marine terminals are not allocated to specific commodities. These direct jobs are with government agencies, shipyards and marine construction firms, banking and law firms, and the Port of Seattle.

underscored by the fact that 7,035 direct jobs are supported by international and domestic containerized cargo.

Table II-4  
Direct Jobs by Commodity Group

Commodity	Direct Jobs	1,000 Metric Tons	Jobs/1,000 Tons
Containerized Cargo			
International	5,703	13,344.0	0.43
Domestic	1,332	1,900.1	0.70
Grain	468	5,333.0	0.09
Breakbulk	490	116.6	4.20
Petroleum	269	1,240.8	0.22
Liquid Bulk	26	46.7	0.56
Not Allocated	<u>4,141</u>		
Total	12,428	21,981.2	

Table II-4 also shows the direct job impacts per 1,000 metric tons of cargo. This exhibit indicates that on a per 1,000 ton basis, breakbulk cargo generates the greatest impact, primarily due to the labor intensive handling associated with cargo such as steel and forest products, as well as vehicles and yachts and equipment moving to and from Alaska. Domestic containerized cargo generates 0.70 jobs per 1,000 tons, followed by international containerized cargo. The slightly higher job impacts over 1,000 tons supported by domestic cargo reflects the fact that a large share of the domestic containerized cargo moves to and from the Port via truck rather than rail. Because of the less labor intensive handling associated with bulk cargoes, the jobs per 1,000 tons generated by grain, petroleum and other liquid bulk cargoes are relatively small.

Employment Impact by Place of Residency

The importance of the Seattle seaport to the local and regional economy is underscored by the residency of those holding the 12,428 marine cargo generated direct jobs. As Table II-5 indicates, about 53 percent of the 12,428 direct jobs generated by seaport activity are held by residents of King County, of which about 28 percent are held by residents of Seattle.

Table II-5  
Distribution of Direct Jobs by Place of Residence

	PERCENT	DIRECT JOBS
<b>Auburn</b>	1.89%	235
<b>Bellevue</b>	0.57%	71
<b>Bothell</b>	4.49%	558
<b>Burien</b>	0.83%	103
<b>Des Moines</b>	1.91%	237
<b>Enumclaw</b>	0.20%	25
<b>Federal Way</b>	5.75%	715
<b>Issaquah</b>	0.24%	30
<b>Kent</b>	2.60%	323
<b>Kirkland</b>	0.37%	46
<b>Mercer Island</b>	0.21%	26
<b>Normandy Park</b>	0.18%	22
<b>Redmond</b>	0.14%	17
<b>Renton</b>	1.75%	217
<b>Sea-Tac</b>	2.23%	277
<b>Seattle</b>	14.58%	1,812
<b>Tukwila</b>	0.24%	30
<b>Vashon</b>	0.05%	6
<b>Other King</b>	14.41%	1,791
<b>Edmonds</b>	1.02%	127
<b>Everett</b>	1.58%	196
<b>Mountlake Terrace</b>	0.59%	73
<b>Other Snohomish</b>	7.52%	935
<b>Tacoma</b>	5.80%	721
<b>Other Pierce</b>	7.01%	871
<b>Other WA</b>	21.05%	2,616
<b>Other US</b>	<u>2.79%</u>	<u>347</u>
<b>TOTAL</b>	100.00%	12,428

### 2.3.2 *Induced Job Impact*

The induced jobs are generated as the result of purchases of goods and services by those 12,428 directly employed as a result of marine cargo and vessel activity at Port of Seattle marine cargo terminals. As the result of the local and regional purchases by these directly employed individuals, 16,639 induced jobs were supported in the State of Washington. The greatest number of induced jobs are supported in non-consumption driven sectors of the economy such as business services, state and local government agencies, social services and education services, followed by impacts with restaurants and grocery stores.

### **2.3.3 Indirect Job Impact**

Indirect jobs are generated in the local economy as the result of local purchases by the firms directly dependent upon the Port of Seattle marine cargo activity. These purchases were identified from the surveys of directly dependent firms supplying services in support of the vessel and cargo activity at the Port of Seattle marine terminals. Based on the surveys, a total of \$438.8 million of local purchases were made in the local economy. Based on employment to purchase ratios in supplying firms, produced for the State of Washington by the U.S. Bureau of Economic Analysis, Regional Input-Output modeling system, these local purchases supported 4,224 indirect jobs in the state.

### **2.3.4 Related Job Impact**

In addition to the direct and induced jobs, an estimate of jobs in the State of Washington related to cargo moving via the Seattle seaport was developed. It is estimated that 135,084 jobs with regional manufacturing and distribution firms are related to cargo moving via the Port of Seattle marine cargo terminals. It is to be emphasized that these jobs are only related jobs, not jobs dependent upon the Port of Seattle. These jobs are with shippers/consignees and manufacturers located throughout the region who ship via the Port of Seattle terminals, as well as via other ports, including Tacoma, Los Angeles/Long Beach and Oakland. Therefore, jobs with these shippers and consignees cannot be classified as totally dependent upon the existence of the Seattle seaport.

The majority of the related jobs are with containerized cargo shippers and consignees.

## **2.4 Business Revenue Impact of the Seattle Harbor**

The revenue impact is a measure of the *total economic activity* in the state that is generated by the cargo moving via the Port of Seattle. In 2007, marine cargo activity at the Port generated a total of \$32.8 billion of total economic activity in the region. Of the \$32.8 billion, \$3.1 billion is the direct business revenue received by the firms directly dependent upon the Port and providing maritime services and inland transportation services to the cargo handled at the marine terminals and the vessels calling the port. The remaining \$29.7 billion represents the value of the output to the State of Washington that is created due to the cargo moving via the Seattle marine terminals. This includes the value added at each stage of producing an export cargo, as well as the value added at each stage of production for the firms using imported raw materials and intermediate products that flow via the marine terminals in the Seattle Harbor and are consumed by industries within the state.

The balance of the discussion focuses on the \$3.1 billion of direct business revenue generated from the provision of services to the cargo and vessels handled at the Port of Seattle marine terminals.

**2.4.1 Revenue Impacts by Sector**

Table II-6 shows the distribution of this revenue impact by category and economic sector. As this exhibit indicates, railroads receive the greatest revenue impact, followed by barge/bunkering operations, terminal operations, shipbuilding/repair and maritime construction activity, and trucking. It is to be emphasized that this revenue impact should not be viewed totally as a local or state impact, but instead as a national, even international impact. For example, the revenue received by firms providing services is used to hire labor, to pay state, local and Federal taxes, to pay stockholder dividends, invest, retire debt, and to purchase goods and services. These uses of revenue suggest that only the payment of wages and salaries to employees residing in the state, the purchase of local goods and services, and the payment of state and local taxes can be identified as remaining in the State of Washington. The other portions of the revenue impact cannot be isolated geographically with the same degree of defensibility.

Table II-6  
Revenue Impact by Category and Economic Sector

	<b>REVENUE (\$1,000)</b>
<b>SURFACE TRANSPORTATION</b>	
<b>RAIL</b>	\$1,512,956
<b>TRUCK</b>	\$160,481
<b>MARITIME SERVICES</b>	
<b>TERMINAL EMPLOYEES</b>	\$324,289
<b>TOWING</b>	\$5,399
<b>PILOTS</b>	\$3,851
<b>AGENTS</b>	\$1,747
<b>SURVEYORS/CHANDLERS</b>	\$113,418
<b>FORWARDERS</b>	\$116,859
<b>WAREHOUSE</b>	\$86,833
<b>SHIPYARDS/SHIPREPAIR</b>	\$309,562
<b>BARGE/BUNKERS</b>	\$413,376
<b>BANKING/INSURANCE/LAW</b>	\$11,669
<b>TOTALS</b>	<b>\$3,060,440</b>

**2.4.2 Revenue Impacts by Commodity**

About \$2.7 billion of the total \$3.1 billion revenue impact of the Port of Seattle marine cargo terminals can be allocated to commodities/commodity types. The remaining \$330.0 million of revenue cannot be allocated to specific commodities. Table II-7 shows the distribution of the direct revenue impact by commodity. Similar to the direct job impacts by commodity, the handling of international cargo generates the greatest revenue, followed by domestic cargo, primarily Alaskan cargo and petroleum.

Table II-7  
Distribution of the Direct Revenue Impact  
Generated by the Port of Seattle Marine Cargo Terminals Seaport

Commodity	Direct Revenue	1,000 Metric Tons	Revenue per Ton
Containerized Cargo			
International	\$1,982,133	13,344.0	\$148.54
Domestic	\$230,348	1,900.1	\$121.23
Grain	\$197,766	5,333.0	\$37.08
Breakbulk	\$91,943	116.6	\$788.53
Petroleum	\$226,614	1,240.8	\$182.64
Liquid Bulk	\$1,642	46.7	\$35.16
Not Allocated	<u>\$329,994</u>		
Total	\$3,060,440	21,981.2	

On a per ton basis, breakbulk cargo generates the greatest revenue impact per ton, reflecting the revenue from the more labor intensive handling of the breakbulk cargo, as well as supporting activity. Petroleum generates the second greatest revenue impact per ton, reflecting the bunkering and barge operations. International containerized cargo generates the next greatest revenue impact per ton, reflecting the greater involvement of rail operations, followed by domestic container operations. Liquid bulk and grain generates the lowest revenue impact per ton, since the movement of grain is less labor intensive in its loading process and moves by rail. The majority of the revenue generated by grain and liquid bulk cargoes is in the surface transportation sector, while for breakbulk and containers, the majority of the revenue impacts are concentrated in the maritime services sector, primarily with stevedores and terminal operators, agents, chandlers and warehousing operations.

The following two sections summarize the personal earnings impact and the tax impact created by the Port of Seattle marine terminals.

## **2.5 Employee Earnings Impact of the Seattle Seaport**

The 12,428 individuals directly employed as a result of activity at the Port of Seattle marine terminals received \$637.4 million in wages and salaries, for an average annual salary of \$51,285. These individuals, in turn, use the earnings to purchase goods and services (both from in-state as well as out-of-state sources), to pay taxes, and for savings. The purchase of goods and services from local sources creates a local re-spending effect known as the personal earnings multiplier effect. This re-spending, or multiplier effect, was estimated using a personal earnings multiplier of 4.095, which indicates that for every \$1 earned in the state, an additional \$3.095 is created due to re-spending of the initial \$1 throughout the state. Using the local personal earnings multiplier, an additional \$1.9 billion of income and local consumption are created in the local economy. In addition, the 4,224 indirectly employed workers receive indirect wages and salaries totaling \$186.7 million. Combining the direct, induced and indirect income impacts, the maritime activity at the Port of Seattle marine cargo terminals created nearly \$2.8 billion of wages and salaries.

The 135,084 related port users earned \$4.1 billion in wages and salaries.

## **2.6 State and Local Tax Impact**

Total state and local tax impacts generated by activity at the Port of Seattle marine cargo terminals is estimated at \$254.5 million. Of the \$254.5 million of state and local taxes generated annually by seaport activity, \$164.7 million was generated at the state level, \$89.8 million at the county and local level.

In addition, \$368.8 million of state and local taxes were created in the related users sector.

In the following section, the economic impacts generated by the Port of Seattle's Fishermen's Terminal and fishing vessels homeported at other Port facilities are presented.

### **3. THE ECONOMIC IMPACT OF COMMERCIAL FISHING ACTIVITY AT THE PORT OF SEATTLE'S FISHERMEN'S TERMINAL, TERMINAL 91 AND THE MARITIME INDUSTRIAL CENTER**

A second key component of the Port of Seattle seaport operations is the local and distant water fishing fleet based at the Port of Seattle's Fishermen's Terminal and Maritime Industrial Center, and the catcher processor vessels homeported at the Port of Seattle's Terminal 91. *It is to be emphasized that the Washington based fishing fleet uses other terminals and moorings throughout the Seattle and Puget Sound areas. The purpose of this impact analysis is to focus only on the impacts generated by the fleet using Fishermen's Terminal, Terminal 91 and the Maritime Industrial Center. As a result, the impacts of the fishing fleet measured in this report are only a subset of the total economic impacts generated by the fishing industry in Seattle and the Puget Sound region.*

Fishermen's Terminal is owned and operated by the Port of Seattle, and combines a working fish terminal with public restaurants, offices, retail shops, and boat yards. In 2007, 250 fishing boats were moored at Fishermen's Terminal. While tied up at Fishermen's Terminal, these vessels make numerous purchases of goods and services from local firms. Such purchases include expenditures for shipyard repair services, painting, electronic equipment, engine and propulsion services, fishing gear, packaging material, fuel, insurance, legal services, and ship stores (food and supplies for the crew). These purchases by the fishing fleet in turn support local jobs with shipyards, ship chandlers, electronics retailers, marine engine specialists, local retail and grocery stores, lawyers, ship brokers, insurance brokers, and hardware stores. Similar purchases are made by the 58 fishing vessels homeported at Terminal 91, of which 43 are catcher processor vessels. There were three factory trawlers/processors moored at the Maritime Industrial Center.

In addition to the direct jobs supported by the purchases by the fishing fleet using the Port of Seattle's Fishermen's Terminal, Terminal 91 and the Maritime Industrial Center, impacts are also generated by the public restaurants, retail stores and offices located at Fishermen's Terminal and the Maritime Industrial Center. Landside processing and cold storage facilities on Terminal 91 are also included in this impact.

To estimate the economic impacts generated by the commercial fishing activity at Fishermen's Terminal, Terminal 91, and the Maritime Industrial Center, the types of fishing vessels moored at each Terminal were profiled. It is necessary to estimate the economic impacts by type of vessels, since each type of fishing boat has a very different expenditure profile, which is a function of such factors as:

- The size of the boat;
- Designed purpose of the vessel -- a catcher boat which catches fish and delivers the catch to on-shore or off-shore processors, a tender -- which services the fishing fleet with supplies and ship stores, or a factory ship or processor -- which processes fish at sea;

- Type of fishing gear used, such as the use of longlines versus nets; and
- Where the fishing is done - in local or distant waters.

The fishing fleets based at the Port of Seattle's Fishermen's Terminal, Terminal 91, and the Maritime Industrial Center consist of the following types of vessels:



Purse seine vessels, which typically fish for salmon and herring using a purse seine net;



Gillnet boats, which use gillnets for salmon and herring fishing;



Trollers, which troll for salmon using lines;



Longline vessels, which fish for groundfish such as halibut and cod using a hook and line gear;



Crab boats, which include crab catchers using crab pots as well as crab processors which process the crab at sea;



Catcher trawlers, which catch fish by dragging a net;



Factory trawlers, which catch and process frozen fish at sea;



Processors, which are large "mother" vessels that receive fish from catcher boats and process the fish at sea; and



Tenders, which essentially supply boats servicing the various fishing fleets and transporting fish.

To estimate the expenditures for each type of vessel, Martin Associates conducted interviews with the various trade associations representing the types of boats operating from the Port of Seattle terminals. Interviews were also conducted with individual boat operators identified by the trade associations, as well as interviews with fleet managers of processing companies. Furthermore, interviews were conducted with shipyards specializing in providing services to the Seattle based fishing fleet, as well as with chandlers, brokers, hardware and electronics retailers, lawyers and engine and propulsion shops.

Interviews with the operators of the catcher processor vessels homeported at Terminal 91 and the factory trawlers at the Maritime Industrial Center were used to estimate the direct impacts of the homeporting activity as well as the shore-side activity that occurs to support these operations.

Exhibit II-1 presents the expenditures in Seattle per vessel for the fleet based at Fishermen's Terminal, Terminal 91, and the Maritime Industrial Center in 2007. These expenditures were then combined with jobs to value of sales ratios in corresponding supplying industries to estimate the number of local direct jobs supported by the vessels based at the Port's marine terminals. Added to these direct jobs are the number of crew employed by the fleet, attorneys, ship brokers, and insurance brokers providing services to the fishermen at the terminals, and employees with the restaurants and retail stores located at Fishermen's Terminal.<sup>6</sup>

Exhibit II-1  
Annual Expenditures in Seattle by Fishing Vessels at Fishermen's Terminal  
Smaller Boats

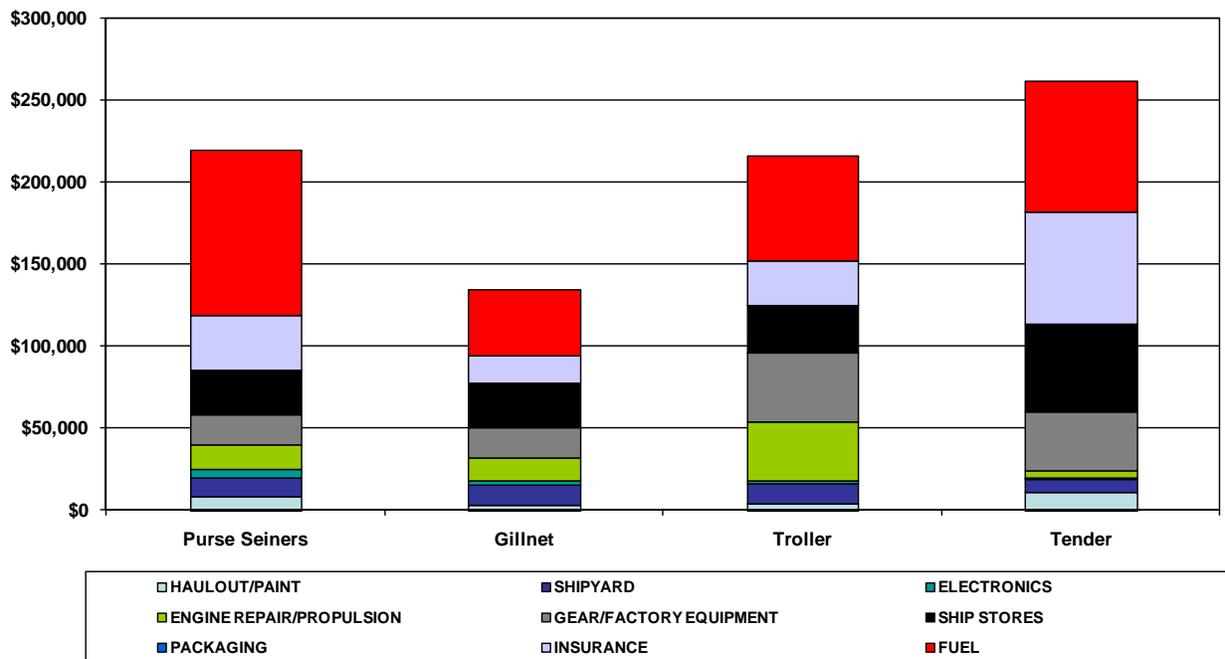


Exhibit II-1 (Continued)

<sup>6</sup> Some employees with the cold storage operators and fish processors are included as impacts of the Port of Seattle seaport, and cannot be double counted when combining the economic impacts of the Fishermen's Terminal and the Seattle seaport.

## Processors and Trawlers

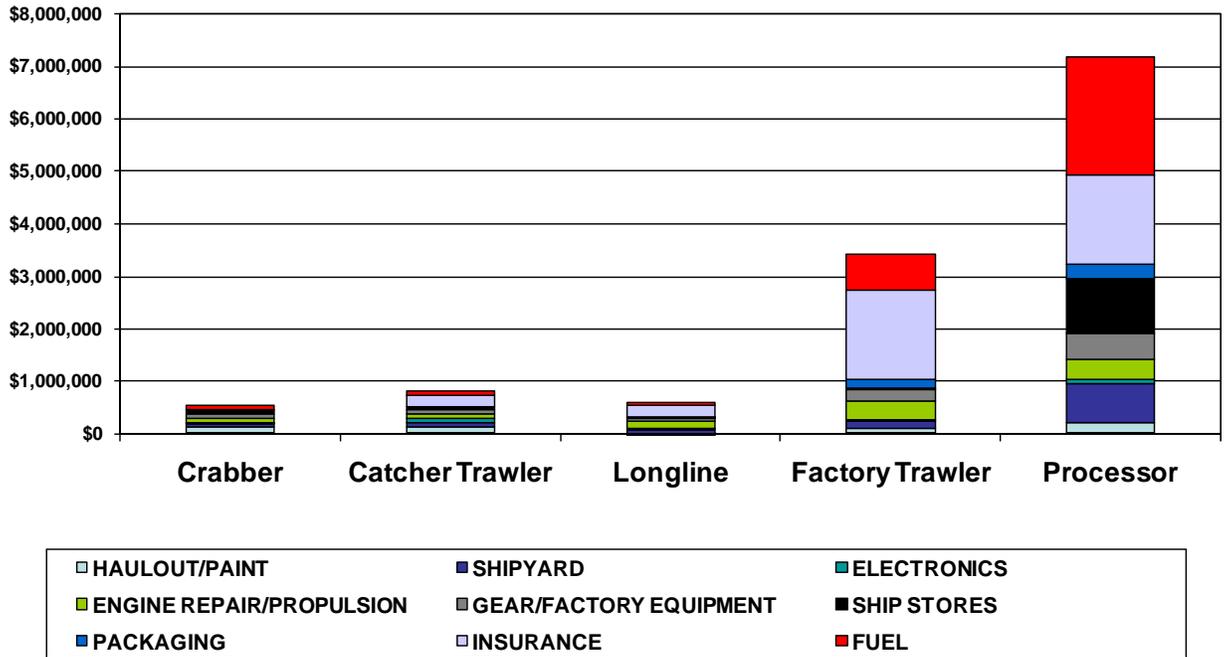


Table II-8 presents the economic impacts generated by the Port of Seattle's commercial fishing activity.

Table II-8  
Economic Impacts of Port of Seattle Related Fishing

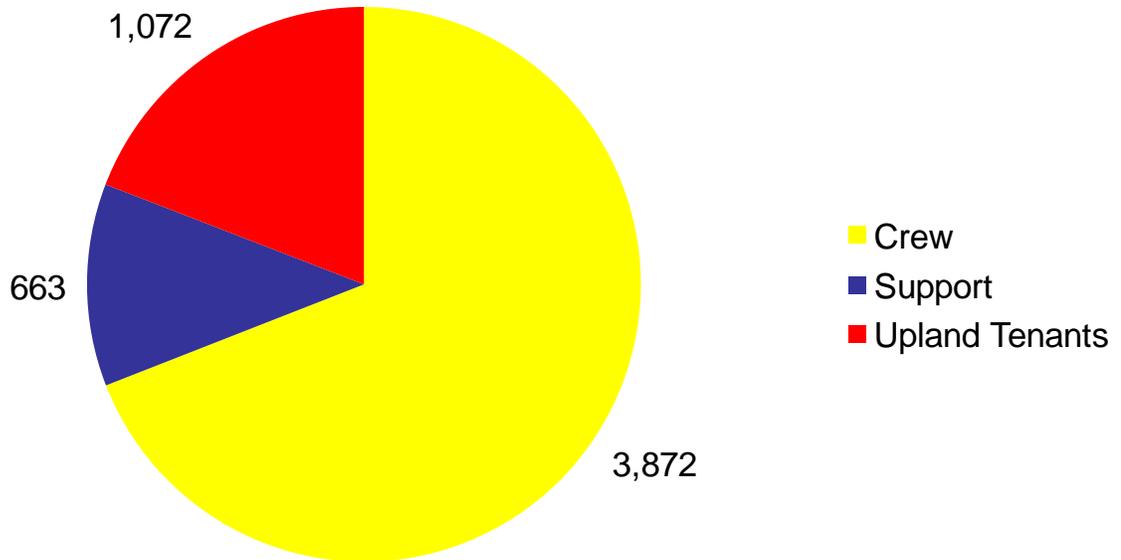
	TERMINAL 91	FISHERMEN'S TERMINAL	MARITIME INDUSTRIAL CENTER	TOTAL FISHING
<b>JOBS</b>				
DIRECT JOBS	4,068	1,310	229	5,607
INDUCED	6,220	1,578	230	8,028
INDIRECT	760	536	41	1,337
TOTAL	11,047	3,424	500	14,972
<b>INCOME (1000\$)</b>				
DIRECT	\$647,520	\$154,675	\$21,282	\$823,477
RE-SPENDING	\$760,124	\$181,573	\$24,983	\$966,679
INDIRECT	\$30,651	\$19,732	\$1,462	\$51,845
TOTAL	\$1,438,295	\$355,979	\$47,726	\$1,842,000
<b>REVENUE (\$1000)</b>	\$618,383	\$179,207	\$16,774	\$814,364
<b>POS REVENUE (\$1000)</b>	\$3,924	\$3,841	\$399	\$8,163
<b>LOCAL PURCHASES (\$1000)</b>	\$56,826	\$43,868	\$3,469	\$104,163
<b>STATE AND LOCAL TAXES (\$1000)</b>	\$130,885	\$32,394	\$4,343	\$167,622

In 2007, fishing activity at Fishermen's Terminal, Terminal 91 and the Maritime Industrial Center generated the following impacts:

- 5,607 direct jobs, including full-time equivalent jobs with the fishing crew based at the Port's Terminals, jobs with local shipyards, chandlers, engine/propulsion repair shops, retail stores, suppliers of fishing gear, insurance brokers, and public restaurants, retail stores, and offices located at Fishermen's Terminal.
- As the result of purchases by these 5,607 directly generated jobs, an additional 8,028 induced jobs are created in the local economy.
- As the result of \$104.2 million of local purchases by the firms located at Fishermen's Terminal, Terminal 91, and the Maritime Industrial Center, an additional 1,337 indirect jobs were created in the local economy.
- The 5,607 direct job holders earned \$823.5 million in direct wages and salaries. As the result of re-spending of this income, an additional \$966.7 million of personal income and consumption expenditures were generated. The 1,337 indirect jobs received \$51.8 million in indirect wages and salaries.
- Local businesses received \$814.4 million of revenue from the purchases by the fishing fleet at Fishermen's Terminal and homeported at Terminal 91 and the Maritime Industrial Center other Port terminals, as well as from retail sales. This does not include the landed value of the fish catch.
- State and local governments received \$167.6 million of tax revenue from the activity generated by the Port of Seattle's Fishermen's Terminal and by the commercial fishing vessels moored at Terminal 91 and the Maritime Industrial Center.

Because of the diversity of commercial fishing-associated activity at Fishermen's Terminal, Terminal 91 and Maritime Industrial Center, the distribution of the direct job impacts created by type of activity is shown in Exhibit II-2. As this exhibit demonstrates, the majority of the 5,607 direct jobs are held by crewmembers, followed by jobs with local firms supplying support services to the fleet based at the Port of Seattle terminals, such as jobs with shipyards/engine propulsion companies, ship chandlers and equipment supply firms and insurance brokers and lawyers. The balance of the jobs are with the retail, restaurant, office and landside fish processing services at the relevant terminals.

Exhibit II-2  
Distribution of the Direct Jobs Generated by Port of Seattle Related Fishing



#### **4. THE ECONOMIC IMPACT OF PASSENGER TRANSPORTATION OPERATIONS AT THE PORT OF SEATTLE MARINE TERMINALS**

The third component of the economic impacts generated by the Port of Seattle seaport is the economic impact of waterborne passenger transportation at the Port of Seattle marine facilities. This component includes the impacts generated by cruise service and harbor tours.

The economic impacts generated by the Seattle seaport passenger activity are estimated in terms of:

- Direct, induced and indirect jobs;
- Personal income, including the re-spending impact (personal income and consumption expenditures);
- Business revenue received by the businesses providing services to the cruise lines and harbor tours calling the Port of Seattle; and
- State and local taxes generated from passenger operations in the Seattle seaport.

To identify these impacts, interviews were held with cruise and tour boat operators to identify Seattle-based impacts, as well as the potential to initiate/expand cruise service in Seattle. A separate computer model has been developed by Martin Associates to measure the impacts of existing cruise and tour boat operations based at the Port of Seattle facilities.

##### **4.1 Impacts of Cruise Service Activity**

In 2008, the Port of Seattle hosted 187 calls by cruise lines carrying nearly 800,000 passengers. These 187 port calls included 163 homeport calls and 24 ports of call. For the vessels homeporting, passengers embark and disembark to begin and end their cruise, and the vessel often takes on supplies. For those vessels making port of calls, passengers embark and disembark for day visits in Seattle, but the vessels typically do not take on supplies. Each of these types of calls creates economic impacts in the local economy.

###### ***4.1.1. Economic Impact of Homeport Cruise Calls***

Homeport cruise activity at the Port of Seattle affects two sectors of the local and regional economy. These sectors are the:

- Maritime Service Sector; and
- Visitor Industry Sector.

The maritime service sector includes those firms that provide services to the cruise vessels while in port, such as:

- Chandlers and other local retailers and wholesalers that provide ship stores and provisions to be used by passengers and crew. These suppliers include Sysco, Dairy Valley, Pacific Seafood, United Electric, Charlie's Produce, Flower Masters, Harbor Ship Supply, International Paint and Unitor to name a few;
- Towing services that assist vessels in docking and undocking (a majority of the new cruise vessels are equipped with bow and stern thrusters and the need for tug assistance is minimized);
- Pilots, assist the vessels navigating the channels from the open sea to the docks;
- Stevedoring services performed by members of the International Longshore and Warehouse Union (ILWU) and other dockworkers including handling baggage and ship supplies;
- Linehandling services that are required when a vessel enters port;
- Bunkering firms that provide fuel to the vessels;
- Landside tours and other charters;
- Parking services for the passengers driving from their place of residence to embark on the cruise; and
- Ground transfers from the airport and hotels to the ship prior to and after the cruise.

The visitor industry sector consists of firms providing services to the passengers and crew of the current cruises prior to and after the cruise. Included in this category are:

- Hotels and motels;
- Restaurants/bars;
- Retail goods; and
- Entertainment establishments such as ground tours, movies, amusements, etc.

To estimate these impacts, the cruise lines currently calling the Port of Seattle were interviewed. The purpose of these interviews was to determine the amount of purchases, by

type of service, made by each vessel call and type of service. Types of purchases include vessel purchases for:

- Ship stores
- Bunkers
- Water
- Liquor
- Flowers
- Pilots
- Tugs
- Local advertising
- Local travel agents
- Linehandling
- Tendering services
- Stevedoring
- Retail items
- Maintenance and repair
- Trash disposal
- Laundry
- Crew allowance
- Wharfage and dockage

Cruise ship expenditure data was provided by Princess Cruises, Holland America Line and Norwegian Cruise Line. The results of these interviews were used to develop a typical ship disbursement account profile. Associated with each vessel expenditure category are jobs to sales ratios with the types of firms providing the goods and services to a homeported vessel. These jobs to sales ratios as well as personal income levels were developed from the U.S. Bureau of Census data sources for the Seattle Metropolitan Area. The total annual expenditures, by type of service, is multiplied by the corresponding jobs to sales ratios to estimate the total direct job impacts in the maritime service sector, by type of service.

As part of the 2003 Economic Impact Study, Martin Associates surveyed 35 local vendors to determine employment levels and dependency on the cruise service at Seattle. The vendors were also queried as to the origin of the goods (produce, liquor, flowers, and retail items) that are loaded onto the vessels at port. In general the cruise service at the Port of Seattle had minimum impact on employment levels with these firms, typically accounting for less than 5 percent of annual business with these firms. In addition, the survey of these firms indicated that the majority of the food and goods originate from all parts of the United States. With respect to produce, about 20 percent of the produce loaded on cruise vessels is locally grown, while the majority is purchased from distributors sourcing nationwide. Dairy products are typically purchased from local suppliers, while flowers are supplied from

Washington and British Columbia suppliers. Other suppliers of meat and cheese are located in Florida and California.

The revenue impacts are estimated directly from the expenditure profiles provided by the carriers. Direct income is estimated from the average annual salaries developed by type of firm, from the interviews.

The jobs generated in the Visitor Industry/Tourism Sector (for example, hotels, restaurants, etc.) are estimated based on a survey of 600 passengers and crew conducted by Martin Associates. These surveys were conducted on September 12<sup>th</sup> and 13<sup>th</sup>, 2008. Of particular interest is the total number of passengers per vessel call, the percent of those passengers arriving by air as well as the percent that stay in local hotels prior to or after the homeport cruise, as well as the purchases made by the passengers in the local economy. These purchases include expenditures on hotels for embarking and debarking passengers, as well as local purchases for retail items, food and local landside tours. The average expenditures on hotel lodging and nights stayed pre- and post cruise, as well as food and in-town cabs are entered into the visitor industry model. The key findings indicate that on average, 67% of the passengers arrive via air, and about 93% spend about 1.4 nights in Seattle area hotels (both post and pre cruise). The typical cruise passenger that stays in area hotels spend about \$83 per night per person in local hotels. For those passengers making local purchases on specific items, on average each passenger spends \$43 in restaurants, \$8 on retail purchases, \$42 on local transportation and rental cars and \$24 on entertainment and land-side tours. Also included in the visitor industry impacts are the impacts created by crew spending. On average, each crewmember spends an average of \$153 per call at Seattle, the majority of which is spent on restaurant and retail purchases.

Martin Associates has developed the Seattle-Tacoma economic impact model for the Port of Seattle, and this model is used to estimate the economic impact on the cruise passengers arriving for the cruise via Seattle-Tacoma International Airport. Using these purchase patterns, and the appropriate jobs to sales ratios and personal income measures for the supplying firms, the visitor industry model calculates the direct jobs, induced and indirect impacts that are generated by the homeport cruise service at the Port of Seattle.

#### ***4.1.2 Port of Call Economic Impacts***

Economic impacts created by a port of call, rather than a homeport call, generate impacts primarily on the landside consisting of tour packages and individual sightseeing excursions. To estimate these impacts, only passenger purchases for local retail/restaurants and tour packages were included in the impact analysis. Interviews with local tour operators provided an estimate of the share of passengers that typically purchase land-side tours while on a port of call at Seattle. These local purchases were converted into direct, induced and indirect impacts using the visitor industry methodology described above. In addition to the passenger expenditures, the vessels also spend money for linehandling, pilots, tender

services, and in some cases miscellaneous emergency purchases. These purchases are also included in the port of call impact analysis.

#### ***4.1.3 Cruise Service Impact Model***

In order to assess the economic impacts of potential cruise business at the Port of Seattle, Martin Associates developed a spreadsheet framework, which can be used to assess the impacts of changes in such factors as:

- Number of cruise vessel calls;
- Number of passengers;
- Passenger characteristics:
  - Local expenditures;
  - Local residents versus tourists;
  - Length of time and where stayed after disembarking;
- Different types of cruise service, including:
  - Homeport;
  - Port of Call;
- Size of crew; and
- Size of vessel.

This model will estimate the impacts of current and potential cruise operations at the Port of Seattle.

#### ***4.1.4 Economic Impacts of the Cruise Services at the Port of Seattle***

Cruise operations for the 2008 cruise season at the Port of Seattle created the economic impacts summarized in Table II-9.

Table II-9  
Economic Impact of Cruise Service at the Port of Seattle  
(2008)

	Cruise Only	Airport	Total Seaport and Airport
JOB			
DIRECT	1,675	280	1,955
INDUCED	953	172	1,125
INDIRECT	<u>513</u>	<u>188</u>	<u>701</u>
TOTAL	3,142	640	3,782
INCOME (\$1,000)			
DIRECT	\$52,546	\$11,601	\$64,147
RE-SPENDING/LOCAL CONSUMPTION	\$75,999	\$16,764	\$92,764
INDIRECT	<u>\$16,918</u>	<u>\$3,134</u>	<u>\$20,052</u>
TOTAL INCOME	\$145,464	\$31,498	\$176,963
REVENUE(\$1,000)	\$199,243	\$113,254	\$312,497
LOCAL PURCHASES	<u>\$24,670</u>	<u>\$6,549</u>	<u>\$31,220</u>
TOTAL REVENUE	\$223,914	\$119,803	\$343,717
STATE/LOCAL TAX (\$1,000)	\$13,237	\$2,866	\$16,104

The cruise vessel activity at the Port of Seattle in 2008 supported the following economic impacts:

***3,782 direct, induced and indirect jobs were created in the State of Washington due to the cruise activity at the Port of Seattle. Of the 3,782 jobs:***

- 3,142 direct, induced and indirect jobs were generated by the cruise operations, of which 1,696 jobs were supported in the visitors industry;
- 640 direct, induced and indirect jobs were created by the passenger activity at Seattle-Tacoma International Airport;
- Furthermore, of the 3,782 jobs:
  - 1,955 were direct jobs
  - 1,125 were induced jobs
  - 701 were indirect jobs

***Nearly \$177 million of local wages and salaries were generated by the cruise activity at the Port of Seattle in 2008:***

- \$64.2 million of direct wages and salaries were generated and received by the 1,955 directly generated jobs, for an average salary of \$32,812 per direct employee.
- As the result of re-spending, another \$92.8 million of re-spending and consumption purchases were generated and supported the 1,125 induced jobs.

- The 701 indirect job holders received \$20.1 million of wages and salaries.

*The 2008 cruise activity at the Port of Seattle generated \$312.5 million of business revenue to local businesses supplying services to the cruise vessels, passengers and crew as well as to the airport-related businesses at Seattle-Tacoma:*

- Of the \$312.5 million of direct business revenue generated by the cruise activity in 2008, the vessel expenditures generated:
  - \$199.2 million of revenue to local businesses, of which the visitors industry received \$85.4 million.
  - \$113.3 million was generated at the airport by the cruise passengers using Seattle-Tacoma International Airport.
- An additional \$31.2 million of local purchases were made by those firms dependent upon the cruise business at the Port of Seattle during the 2008 cruise season.

*\$16.1 million of state and local taxes were generated by the cruise activity at the Port of Seattle in 2008.*

#### 4.2 Harbor Tours

Based on the results of interviews, the impacts of the tour boat operations and harbor cruises based at Port of Seattle facilities were estimated and are presented in Table II-10.

Table II-10  
Economic Impacts of Harbor Cruises and Tour Boat Operations Based at the Port of Seattle

HARBOR	
<b>JOBS</b>	
DIRECT JOBS	190
INDUCE	106
INDIRECT	41
TOTAL	337
<b>INCOME (\$1000)</b>	
DIRECT	\$5,278
RE-	\$7,634
INDIRECT	\$3,553
TOTAL	\$16,466
<b>REVENUE</b>	\$28,606
<b>LOCAL PURCHASES (\$1000)</b>	\$8,742
<b>STATE AND LOCAL TAXES (\$1000)</b>	\$8,498

As this table indicates, the economic activity generated by the following impacts:

- 190 direct jobs;
- As a result of purchases by these 190 direct jobs, 106 induced jobs were generated in the local economy;
- As the result of \$8.7 million of local purchases by the firms dependent upon harbor cruises and tourboat operations at the Port of Seattle facilities, 41 indirect jobs were supported in the local economy;
- The 190 direct jobs received \$5.3 million of direct wages and salaries. As the result of the re-spending impact, an additional \$7.6 million of personal income and local consumption expenditures were generated. The indirect jobholders received \$3.6 million of indirect wages and salaries;
- The tour boat operators received \$28.6 million of business revenue from the operations at Port of Seattle facilities; and
- \$1.5 million of state and local taxes were generated by the harbor cruises and tourboat operations.

## **5. THE ECONOMIC IMPACT OF RECREATIONAL BOATING AT THE PORT OF SEATTLE MARINAS**

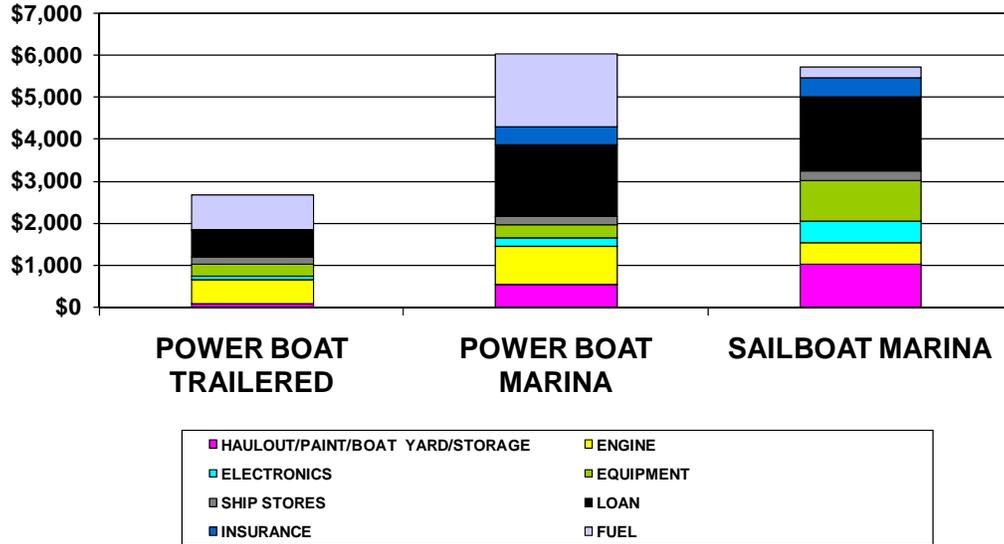
The fourth component of the Port of Seattle Seaport impact analysis is the economic impact generated by recreational boating at the Port of Seattle owned marinas – Shilshole Bay, Harbor Island, Fishermen’s Terminal and Bell Harbor. The impacts created by the recreational boating activity include the impacts generated by the vessels moored at each of these marinas, as well as the impacts of transient boats that temporarily use these marinas. To estimate the impacts, Martin Associates developed a profile and inventory of recreational boats, by size and type, at each Port of Seattle marina. For example, there were 1,414 recreational boats that were moored at the Port’s Shilshole Marina, of which 1,075 were sail boats. Eighteen boats were moored at Bell Harbor, 85 boats were moored at Harbor Island, and 63 recreational boats were moored at Fishermen’s Terminal. In addition to the recreational boats that are moored at each of these facilities, there are a large number of transient boats that tie up at these marinas and the passengers typically go ashore for eating, shopping and entertainment. For example, at Bell Harbor, 6,404 transient boats called this marina, while 6,485 transient boats were recorded at Shilshole Marina in 2007.

To develop the impact data, Martin Associates conducted interviews with tenants at each marina, including yacht clubs, sailing schools, restaurants, and retail stores. The results of these surveys were used directly in estimating marina tenant impacts. Next, typical annual expenditures by type of moored boat and for transient boats were developed from published sources, including:

- Boating 2000: A Survey of Boater Spending In Maryland, University of Maryland Sea Grant Program;
- Interviews with Northwest Marine Trade Association;
- Marine Manufacturers Association;
- The Economic Impact of Michigan’s Recreational Boating Industry, Michigan State University, Ed Mahoney;
- Marine Operators Association of America; and
- Clean Vessel Act, Michigan Boating Survey, 1994-1995.

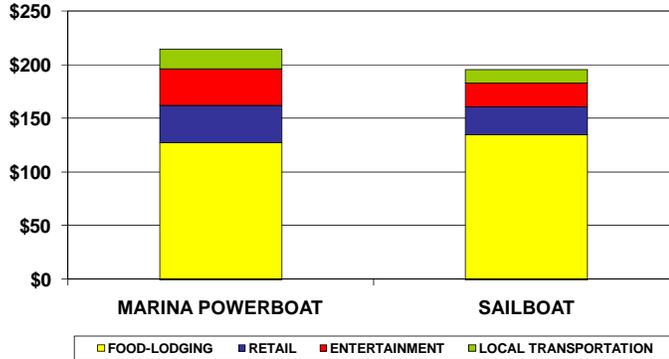
Based on interviews with the Northwest Marine Trade Association and the University of Maryland Sea Grant authors, it was concluded that the use of expenditure data per type of boat identified in Maryland would be representative of typical annual expenditures per boat in Puget Sound. Exhibit II-3 shows the breakdown of annual purchases by type of boat as developed from the “Boating 2000: A Survey of Boater Spending in Maryland”, Maryland Sea Grant Program, University of Maryland. Exhibit II-4 shows the breakdown for local spending by transient boat operations.

Exhibit II-3  
Annual Operating Expenses by Type of Boat



Source: Boating 2000: A Survey of Boater Spending in Maryland, University of Maryland Sea Grant Program – adjusted for current dollars

Exhibit II-4  
Local Spending per Trip for Transient Boats



Boating 2000: A Survey of Boater Spending in Maryland, University of Maryland Sea Grant Program – adjusted for current dollars

These annual purchases per boat are multiplied by the number of boats in each category at each of the Port of Seattle marinas. The annual purchases by type of boat at each marina are then converted into direct jobs using survey data from suppliers and marina support services firms interviewed by Martin Associates.

The local purchases per trip for transient calls at each marina are converted into jobs, income and revenue impacts using a visitor’s industry model developed for the cruise industry impact analysis, as well as for Sea-Tac International Airport.

Indirect impacts are developed from local purchases data supplied by support services providers (from interviews) and upland tenants (restaurants, retail, boat yard, sailing schools, etc.)

Table II-11  
Economic Impact of Recreational Boating at the Port of Seattle Marinas

<b>SUMMARY</b>	<b>TOTAL</b>
<b>JOBS</b>	
<b>DIRECT JOBS</b>	<b>123</b>
<b>INDUCED</b>	<b>129</b>
<b>INDIRECT</b>	<b><u>100</u></b>
<b>TOTAL</b>	<b>352</b>
<b>INCOME (\$1000)</b>	
<b>DIRECT</b>	<b>\$4,575</b>
<b>RE-SPENDING</b>	<b>\$14,161</b>
<b>INDIRECT</b>	<b><u>\$3,887</u></b>
<b>TOTAL</b>	<b>\$22,623</b>
<b>REVENUE (\$1000)</b>	<b>\$13,831</b>
<b>POS REVENUE \$(1000)</b>	<b>\$7,780</b>
<b>LOCAL PURCHASES (\$1000)</b>	<b>\$7,845</b>
<b>STATE AND LOCAL TAXES (\$1000)</b>	<b>\$2,059</b>

In 2007, the recreational boating activity at the Port of Seattle generated the following economic impacts.

- 123 direct jobs were created by recreational boating activity at the Port of Seattle marinas;
- As a result of purchases by these 123 direct jobs, 129 induced jobs were generated in the local economy;

- As the result of \$7.8 million of local purchases by the firms dependent upon recreational boating activity at Port of Seattle marinas, 100 indirect jobs were supported in the local economy;
- The 123 direct jobs holders received \$4.6 million of direct wages and salaries. As the result of the re-spending impact, an additional \$14.2 million of personal income and local consumption expenditures were generated. The indirect jobholders received \$3.9 million of indirect wages and salaries;
- The recreational boating created \$13.8 million of business revenue; and
- \$2.1 million of state and local taxes were generated by the Port of Seattle marina activity.

## **6. ECONOMIC IMPACT OF THE PORT OF SEATTLE REAL ESTATE TENANTS**

In addition to the marine cargo, commercial fishing, passenger, and recreational boating operations of the Port of Seattle Seaport Division, the Port also leases land to non-maritime related tenants. This property is leased for office and conference space, retail space, restaurants, and the Odyssey Maritime Discovery Center. Essentially these are tenants of the Port of Seattle that are not included in cargo, fishing, recreational boating, or cruise analysis.

With respect to the real estate analysis, the impacts created with the real estate tenants of the Port of Seattle are generated by the demand for the goods and services produced by the tenants, and not by activity specific to transportation services provided by the Port of Seattle. In contrast, the capital investments made by the Port in the marine terminals and airport facilities are essential for the existence of maritime operations and commercial aviation operations in Seattle. As a result, the impacts generated by tenants of the Port's real estate holdings are not as directly dependent upon the Port of Seattle and its investment as are the seaport and airport impacts. Some of these companies are located on Port-owned property as a direct result of efforts by the Port of Seattle to recruit them, and would likely not have located in Seattle otherwise. Other firms would likely have located in Seattle regardless of the Port's efforts and infrastructure investment.

The impact analysis of the real estate tenants are based on a survey of 291 tenants not included in other Seaport operations. Martin Associates developed a separate real estate impact model to estimate the impacts of these tenants on the Seattle economy. In addition, the impact model can be used to assess the impacts of potential uses of Port-owned property, including, office, restaurant, retail and industrial uses.

Table II-12 summarizes the economic impacts of the real estate tenants of the Port of Seattle.

Table II-12  
Economic Impacts of the Port of Seattle's Real Estate Tenants

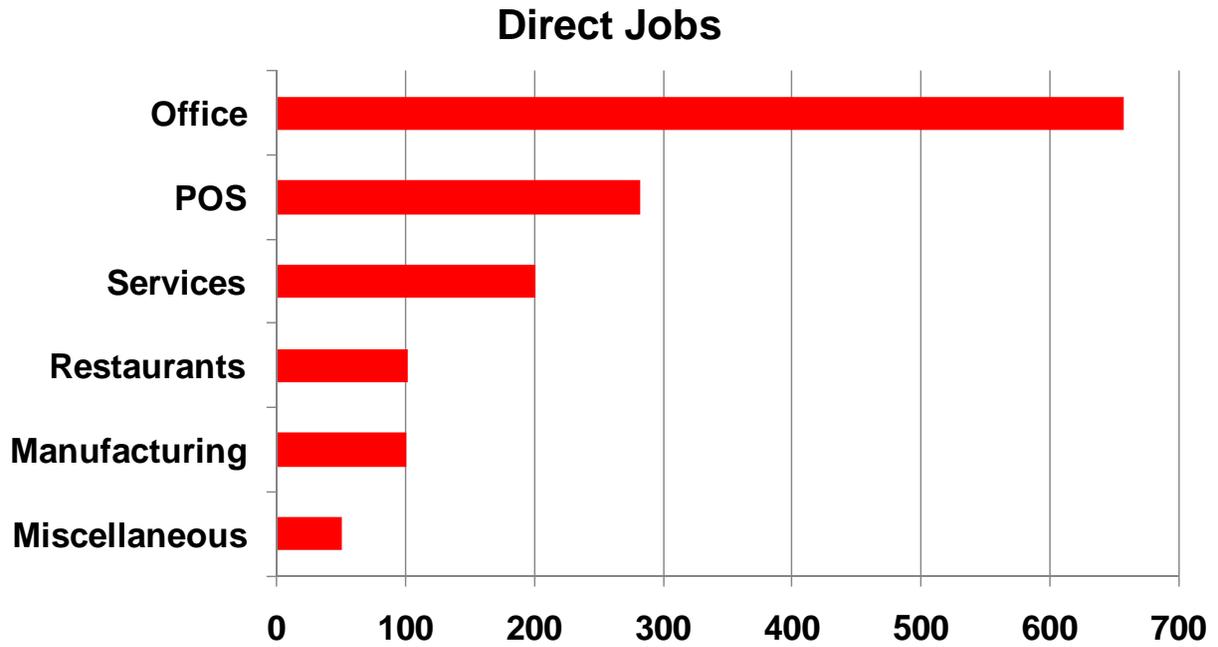
<b>REAL ESTATE</b>	
<b>JOBS</b>	
<b>DIRECT JOBS</b>	1,392
<b>INDUCED</b>	689
<b>INDIRECT</b>	1,441
<b>TOTAL</b>	3,521
<b>INCOME (1000\$)</b>	
<b>DIRECT</b>	\$79,575
<b>RE-SPENDING</b>	\$46,034
<b>INDIRECT</b>	\$46,689
<b>TOTAL</b>	\$172,298
<b>REVENUE (\$1000)</b>	\$304,225
<b>LOCAL PURCHASES (\$1000)</b>	\$69,759
<b>STATE AND LOCAL TAXES (\$1000)</b>	\$15,680

As summarized in Table II-12, the Port of Seattle Seaport real estate tenants create the following economic impacts:

- 1,392 direct jobs are generated by these tenants, and as the result of local purchases by these direct employees, another 689 induced jobs are supported in the Seattle area's economy. Due to \$69.8 million of local purchases, 1,441 indirect jobs are supported. This indirect impact reflects the dependency on the local economy supply infrastructure for port tenants such as business offices;
- The 1,392 directly employed workers received \$79.6 million of wages and salaries. As the result of the local purchases by these employees, another \$46.0 million of income and consumption expenditures were generated, resulting in the induced job impact. The 1,441 indirect jobholders received \$46.7 million of indirect wages and salaries for a total personal income impact of \$172.3 million;
- The Port tenants received \$304.2 million of revenue, of which \$69.8 million was used for local purchases, as identified from the surveys of these tenants. These local purchases supported the 1,441 local indirect jobs; and
- The Port of Seattle Seaport Real Estate Tenants generated \$15.7 million of state and local taxes.

Exhibit II-5 shows the distribution of the 1,392 direct jobs by type of business. Office tenants generate the greatest number of jobs, followed by the Port of Seattle employees allocated to the real estate operations.

Exhibit II-5  
Distribution of Direct Jobs by Type of Business



### **III. THE ECONOMIC IMPACTS OF SEA-TAC INTERNATIONAL AIRPORT**

This chapter presents the results of the economic impact analysis of the air passenger and cargo activity at Sea-Tac International Airport for calendar year 2007. The first section provides an overview of the airport impact structure, Section 2 details the employment impacts, Section 3 provides an overview of the business revenue impacts, Section 4 summarizes the employee earnings impact, state and local taxes and Federal aviation-specific taxes are summarized in Section 5, and visitors industry impacts are presented in Section 6.

#### **1. OVERVIEW OF THE AIRPORT IMPACT STRUCTURE**

An airport, like a seaport, is a diverse economic system. Passenger and cargo activities also generate impacts through various sectors of the economy. These sectors are:

- Airline/airport service sector;
- Freight transportation sector;
- Passenger ground transportation sector;
- Contract construction/consulting services sector; and
- Visitors' industry sector.

Each of these sectors covers a variety of activities. A discussion of these five sectors is provided below, with a description of the major participants in each.

##### **1.1 Airline/Airport Service Sector**

The airline/airport service sector consists of airlines providing passenger services, and firms (and government) providing support services to the airlines, passengers, and to the airport. This group consists of the following participants:

- Passenger Airlines;
- Catering Firms (those providing food services to airlines);
- Janitorial Firms;
- Sky Caps;
- Aviation Service Firms (including fixed base operators that supply aircraft parts, fueling, and other ground services to airlines);
- Airport Retail Tenants (i.e., newsstands, retail shops, restaurants, etc.);

- State, city, and Federal government agencies (i.e., Federal Aviation Administration, Department of Homeland Security, TSA, and U.S. Customs, etc.);
- Port of Seattle employees that are dedicated to overseeing the activity at Sea-Tac;
- Parking and miscellaneous (kennels, etc.); and
- Banks and insurance firms that provide services to passengers using Sea-Tac for currency exchange and flight insurance. Also, with respect to air cargo, banks perform such services as writing letters of credit for international transactions and insurance firms provide air cargo insurance.

Jobs in this category are typically located on the airport property.

## **1.2 Freight Transportation Sector**

Freight transportation includes freight airlines, freight forwarders, and trucking firms involved in transporting air cargo. The air cargo consists of airfreight and mail transported on dedicated freight airlines and in the cargo section of passenger airlines. Included in this group are air couriers, freight forwarders, and common carrier trucking firms located throughout the Seattle area. Jobs in this category are located both on and off the airport.

## **1.3 Passenger Ground Transportation Sector**

Passenger ground transportation consists of car rental firms and other ground transportation modes, such as buses, taxis and limousines. This group covers all transportation of individuals to and from Sea-Tac International Airport and includes both drivers and supporting dispatch and maintenance employees.

## **1.4 Contract Construction and Consulting Sector**

Individuals employed in this group include those providing construction and remodeling work at Sea-Tac, as well as architects and engineers providing planning and design services. These services are provided to the airlines as well as to the Port of Seattle.

## **1.5 Visitor Industry Sector**

Passengers arrive in the Seattle area via Sea-Tac for several purposes, including business, pleasure, and conventions. As a result of these out-of-town residents purchasing lodging, food, and entertainment, jobs are created in the service and retail industries in the area. Also included in this sector are jobs created with local travel agents. The impacts in this sector are based on a detailed passenger survey of 950 passengers conducted during the week of November 17, 2008.

Freight related jobs consist of firms using the airport for the shipment of airfreight. These users can and do use other airports and, hence, their impacts are considered related, not dependent, upon Sea-Tac. These related job impacts are estimated separately.

Consistent with measurement of the impacts generated by seaport activity, the four types of impacts estimated are:

- Jobs:
  - Direct jobs are those jobs that would be dislocated if the airport were to close;
  - Induced jobs are jobs generated in the State of Washington by purchases of goods and services by those directly employed; and
  - Indirect jobs are the result of local purchases by firms directly dependent upon the airport.
- Personal Earnings:
  - Direct personal earnings, which consist of wages and salaries received by those directly employed by airport activity;
  - Re-spending effect, which is earnings and consumption created in the local economy as the result of re-spending the direct employee earnings throughout the economy; and
  - Indirect wages and salaries are earned by those indirectly employed by the airport.
- Business revenue, which consists of revenue received by firms providing services to airlines, passengers and air cargo shippers/consignees.
- Tax impacts include state and county tax impacts, as well as taxes paid to airport-specific federal tax funds.

Table III-1 summarizes the economic impacts generated by passenger and air cargo activity at Sea-Tac International Airport.

Table III-1  
Summary of Economic Impacts Generated by  
Sea-Tac International Airport

	Sea-Tac (On-Site)	Sea-Tac (Visitors)	Total
<b>Jobs</b>			
Direct	18,773	71,129	89,902
Induced	11,538	24,046	35,584
Indirect	<u>4,723</u>	<u>8,161</u>	<u>12,884</u>
<b>Total</b>	35,034	103,336	138,370
<b>Wages/Salaries (Millions)</b>			
Direct	\$778.1	\$1,380.5	\$2,158.7
RE-SPENDING	\$1,124.5	\$858.7	\$1,983.2
Indirect	<u>\$210.2</u>	<u>\$180.0</u>	<u>\$390.2</u>
<b>Total</b>	\$2,112.9	\$2,419.2	\$4,532.1
<b>Business Revenue (Millions)</b>	\$7,596.9	\$5,541.6	\$13,138.5
<b>Local Purchases (Millions)</b>	\$439.3	\$345.3	\$784.6
<b>State/Local Taxes (Millions)</b>	\$192.3	\$220.1	\$412.4
<b>Aviation Taxes (Millions)</b>	\$439.4	na	\$439.4

Totals may not add due to rounding.

In total, 89,902 direct jobs were generated by activity at Sea-Tac and as a result of local purchases by visitors arriving in the Seattle area via Sea-Tac. As the result of local and regional purchases by these individuals, 35,584 induced jobs were supported in the local and state economies. As the result of the local purchases by firms dependent upon Sea-Tac, 12,884 indirect jobs are also generated in the local economy.

More than 161,350 jobs are related to the airfreight shipped through Sea-Tac. These jobs are classified as related to Sea-Tac, since it is the demand for the products shipped by air that generated the employment, not the fact that the air freight was shipped by air carriers using Sea-Tac. These related jobs also include the local support jobs with supplying firms required to produce the airfreight.

About \$2.2 billion of direct earnings were received by the 89,902 direct employees, and when the re-spending impact and indirect wages and salaries are considered, the total of income and consumption expenditure impact of Sea-Tac is estimated at \$4.5 billion.

Businesses providing services at the airport, as well as those local visitor industry businesses providing services to the air visitors received \$13.2 billion of total, direct revenue. The state and local governments received \$412.4 million of tax revenue, and \$439.4 million of Federal aviation-

specific tax revenue was generated, a portion of which is received by the Aviation Trust Fund for future airport development nationwide

The first section of this chapter details the employment impacts generated by activity at Sea-Tac. As with the seaport impacts, a more detailed discussion is provided for the employment impacts, since the direct job impacts drive the earnings and tax receipts.

## **2. EMPLOYMENT IMPACTS GENERATED BY PASSENGER AND AIR CARGO ACTIVITY AT SEA-TAC**

In this section, the employment generated by activity at Sea-Tac International Airport is estimated. Employment impacts with the visitors industry is discussed in Section 6 of this chapter. The section is organized as follows:

- Jobs are estimated in terms of the economic impact sectors, for job categories within each sector, and by type of activity;
- Job impacts are allocated to local jurisdictions based on the residence of those that are dependent upon airport activity;
- Induced jobs are estimated by industry for those industries supplying goods and services to individuals directly dependent on Sea-Tac;
- Indirect jobs are estimated as the result of local purchases by the firms dependent upon the airport activity; and
- Finally, jobs related to airport activity are discussed in the fourth section.

### **2.1 Job Impacts by Sector**

In 2007, 35,034 direct, induced and indirect jobs were created on-site by activity at Sea-Tac International Airport. Of these jobs:

- 18,773 direct jobs are dependent upon activity at Sea-Tac. These jobs would be discontinued immediately if airport activity ceased. Also, these jobs would be impacted as a result of changes in the number of flights and passenger levels;
- 11,538 induced jobs are created in the state due to the purchases of goods and services of those directly dependent upon activity at Sea-Tac; and
- 4,723 indirect jobs were supported in the local economy due to purchases by the businesses directly dependent upon the activity at Sea-Tac.

Table III-2 shows the distribution of direct employment within each major sector. Jobs with passenger airlines account for 38.2 percent of job impacts in the airline/airport service sector. The 7,175 direct jobs with airlines include flight crew and pilots living in Washington, jobs with ticket agents, dispatchers, equipment mechanics and technicians, sky caps, custodial workers who are employees of the airlines (and not contractors to the airlines), and airline management and clerical jobs. Some of these jobs are dependent upon the number of flights at Sea-Tac International Airport, others are dependent upon the number of passengers at the airport, while still other jobs, such as those with a system maintenance facility (i.e., Alaska Airlines) or with airline management, are dependent upon airline corporate decisions and airline system activity.

As a result of this diversity in the types of jobs with airlines and their dependency upon the airport activity, changes in the level of airport activity will not have a proportional impact on the level of total direct airline jobs. For example, the airline flight attendants living in Washington are not necessarily dependent upon the level of flights in and out of Sea-Tac International Airport, but instead on the growth in the specific airline system of which they are employees. Similarly, the level of employment with an airline system maintenance facility is dependent on the overall size of the airline's fleet and the repair and maintenance schedule of those aircraft, rather than on the level of activity at Sea-Tac International Airport. In contrast, certain jobs are directly dependent on the number of flights at Sea-Tac International Airport, such as the equipment service technicians, dispatchers, gate personnel and caterers.

Table III-2  
Direct Job Impacts by Category

Job Category	Direct Jobs
<b>Airline/Airport Services Sector</b>	
Passenger Airlines	7,175
Catering	608
Skycaps	564
Government Agencies	1,256
Airport Administration	1,137
Retail Concessions	1,525
General Aviation/FBO's	1,403
Custodial	179
Parking	146
<b>Subtotal</b>	<u>13,993</u>
<b>Freight Transportation Sector</b>	
Freight Airlines/Couriers	912
Freight Forwarders	247
<b>Subtotal</b>	<u>1,159</u>
<b>Passenger Ground Transportation Sector</b>	
Rental Cars	821
Cabs/Buses/Limos/Vans	1,205
	<u>2,026</u>
Construction/Consulting	1,595
<b>Total</b>	<u>18,773</u>

Based on an analysis of employee job classifications for the airlines servicing Sea-Tac, it was estimated that 40 percent of the direct airline employment would fluctuate on a short term, month-to-month basis, with the actual number of flights and passengers at Sea-Tac. The remaining airline employees would include flight crews living in Washington (but dependent upon the airline's longer-term performance at Sea-Tac), maintenance facility employees, and airline management stationed at Sea-Tac.

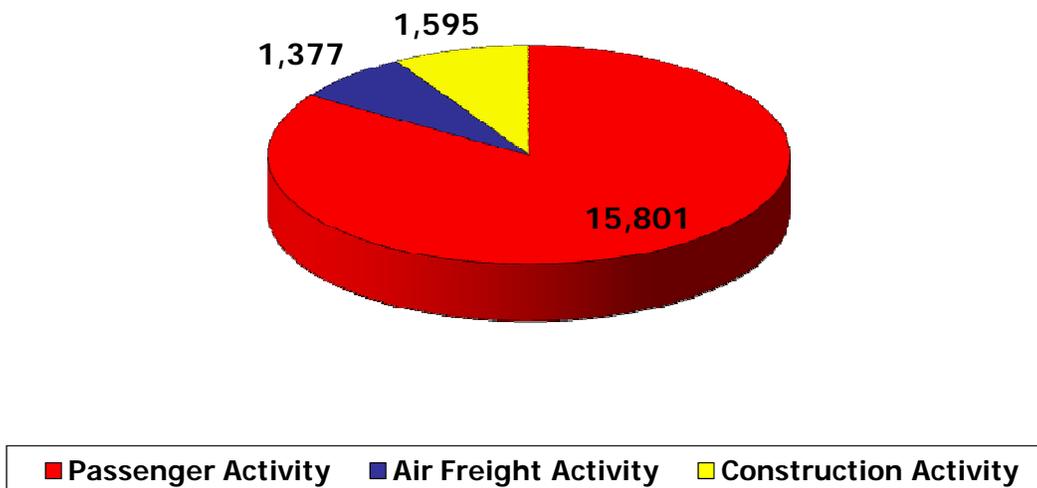
## 2.2 Jobs by Type of Activity

In this section, job impacts by type of activity, i.e., air cargo, air passenger, and international air passenger flights are detailed.

In 2007, a total of 319,018 metric tons of air cargo (which consists of airfreight and airmail) moved via Sea-Tac, and 31.3 million passengers used the airport. The direct job impacts associated with passenger and air cargo activity is presented in Exhibit III-1. Of the 18,773 jobs directly generated by airport activity, 1,377 jobs, are directly generated as a result of air cargo activity, while 15,801 direct jobs are generated by air passengers and 1,595 are related to construction projects and consulting projects at the airport.

Of the 31.3 million passengers, 28.6 million were on domestic flights, while 2.7 million were traveling on international flights. As a result of the international flights, 1,641 jobs were generated, or about 10.4 percent of the 15,801 direct jobs associated with passenger activity at Sea-Tac.

Exhibit III-1  
Distribution of Job Impacts by  
Type of Activity



### 2.3 Job Impacts by Residency

In order to estimate the local economic impact created by airport activity, data on residency of employees was collected from the interviews with service firms, Port of Seattle employee records, airport security identification badge records, and interviews with the leading airlines serving Sea-Tac. The direct job impact of 18,773 jobs was then allocated based on city and county of residence.

Table III-3 shows that 76.18 percent of the direct jobs are held by residents of King County. Nearly 18 percent of the 18,773 jobs are held by residents of Seattle, while 9.4 percent of the direct jobs are held by residents of Federal Way.

Table III-3  
Distribution of Direct Jobs by Residence

	PERCENT	DIRECT JOBS
Auburn	5.63%	1,058
Bellevue	1.41%	265
Bothell	0.46%	87
Burien	2.53%	475
Des Moines	3.03%	568
Enumclaw	0.70%	131
Federal Way	9.37%	1,759
Issaquah	1.10%	207
Kent	9.15%	1,717
Kirkland	0.66%	124
Mercer Island	0.50%	93
Normandy Park	0.93%	175
Redmond	0.61%	115
Renton	6.38%	1,197
Sea-Tac	6.61%	1,241
Seattle	17.69%	3,321
Tukwila	6.06%	1,138
Vashon	0.16%	31
Other King	3.18%	598
Edmonds	0.34%	64
Everett	0.50%	95
Mountlake Terrace	0.05%	9
Other Snohomish	1.03%	194
Tacoma	6.16%	1,155
Other Pierce	8.73%	1,639
Other WA	4.90%	920
Other US	2.11%	396
<b>TOTAL</b>	<b>100.00%</b>	<b>18,773</b>

## 2.4 Induced Job Impacts

A portion of the personal earnings received by those 18,773 individuals directly employed due to airport activity is saved, another portion is used to pay Federal, state and local taxes, while another portion is used to purchase goods and services from firms located in Washington, as well as out-of-state firms. The purchase of goods and services from firms located in Washington creates induced jobs for Washington residents in the firms supplying the goods and services. Furthermore, those individuals supplying the goods and services also receive personal earnings from their employers, and use a portion of it for additional purchases from firms located in Washington. This "trickle-down" effect of an initial expenditure results in a multiplier effect throughout the state economy known as the personal earnings multiplier. In 2007, \$778.1 million of wages and salaries were received by the 18,773 directly employed due to airport activity. As a result of re-spending of this direct income, \$1.1 billion of re-spending throughout the region occurred, creating 11,538 induced jobs for Washington residents.

The induced impacts are greatest in the state and local government, business and social services, and education sectors of the regional economy, followed by induced jobs generated with restaurants and grocery stores, and with jobs in the housing and home furnishings industry. Smaller induced jobs result in the entertainment, apparel, transportation, retail apparel industries, and health care.

## 2.5 Indirect Jobs

In addition to these induced jobs created due to purchases by the 18,773 individuals directly employed due to activity at Sea-Tac, additional indirect jobs in the local economy are created as the result of local purchases by the firms directly dependent upon Sea-Tac. For example, airlines purchase such items as fuel, catering services, parts and office supplies from local firms, thereby creating jobs in these supplying industries. Similarly, the airport itself purchases such services as contract construction, utilities, and maintenance services from local suppliers, also creating jobs in the local economy. For the most part, the jobs resulting from such purchases are included in the direct job impacts (see Table III-2). For example, the 608 jobs with caterers, the 1,403 jobs with suppliers of aircraft services, (including fixed based operators, fuel handlers, and parts suppliers), the 179 jobs with janitorial services, and the 1,595 jobs with contract construction and consulting firms are all included as direct job impacts. However, additional purchases are made in the local economy by these directly dependent firms for additional goods and services. Based on the surveys of the firms dependent upon Sea-Tac, a total of \$439.3 million of additional local purchases were made. These purchases supported the 4,723 indirect jobs in the local economy.

It is to be emphasized that these indirect jobs are estimated from the survey data provided to Martin Associates by each airport dependent firm. These are only local purchases, and exclude purchases for the goods and services conducted as direct impacts.

## 2.6 Related Jobs

Related jobs are with freight users of Sea-Tac International Airport. These shippers use Sea-Tac as well as other airports for airfreight (air cargo excluding mail) shipments. Therefore, these shippers are not directly dependent upon Sea-Tac in the same sense as are the firms that supply direct services to the airlines and/or passengers. However, the use of Sea-Tac by these shippers is important in stimulating economic activity in the region. To estimate the importance of Sea-Tac to the local and regional manufacturing and industrial community, the type and value of airfreight moving via Sea-Tac were based on a detailed analysis of Pacific Northwest air cargo shipments conducted by Martin Associates for the Port of Seattle.<sup>7</sup> The specific types of airfreight moving via Sea-Tac International Airport were then related to manufacturers of the specific type of air cargo commodity. The ratios of jobs to value of output for each manufacturing industry (associated with the air cargo) were then developed from data developed for Martin Associates by the Bureau of Economic Analysis for the State of Washington.

The value of enplaned airfreight by commodity type, multiplied by the ratios of jobs to output value of airfreight resulted in an estimate of related jobs. Based on the average value per pound of airfreight enplaned in the Pacific Northwest, \$54 per pound, the total value of airfreight enplaned at Sea-Tac is estimated at \$16.0 billion. Using the jobs to enplaned airfreight value, it is estimated that 136,201 jobs are related to the 296.7 million pounds of airfreight shipments via Sea-Tac International Airport in 2007. ***It is to be emphasized that these jobs are related, not dependent upon Sea-Tac, and the majority of these jobs also include jobs with regional supplying firms that support the direct manufacturer/producer of the airfreight.*** The level of employment with these users is determined by the demand for the firms' products, not the use of Sea-Tac for airfreight shipments. However, the ability to use Sea-Tac for airfreight shipments and receipts is a very important factor to be considered by industries and manufacturing firms evaluating a new plant location in the Pacific Northwest.

The 136,201 related users of the airport earned \$8.1 billion of wages and salaries, and a total of \$737 million state and local taxes were supported by the related users of Sea-Tac.

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<sup>7</sup> "The Economic Impacts of Air Cargo at Sea-Tac International Airport, conducted by Martin Associates for the Port of Seattle, March 7, 2001.

### **3. BUSINESS REVENUE IMPACT**

The movement of passengers and air cargo via Sea-Tac International Airport generates revenue for firms in each of the five sectors of the economy. For example, in the airline/ airport service sector, revenue is received by the airlines providing services to enplaning passengers, catering firms providing services to the airlines, and by airport tenants who sell retail merchandise to passengers in the airport. In the freight transportation sector, airlines receive revenue from moving the air cargo to and from the airport and freight forwarders receive revenue from arranging air transportation for the cargo. Similarly, the rental car agencies and the firms providing ground transportation receive revenue from transporting passengers to and from the airport, while contract construction and consulting firms receive revenue from the airport and airlines that have contracted these services. In the visitors industry sector, local service and retail firms receive revenue from passengers staying overnight in the Seattle area. (These visitor industry revenue impacts are estimated in Section 6 of this chapter.)

It is useful to estimate the revenue received by each economic sector, because the distribution is quite different from that of employment. However, only a portion of the revenue can be definitely traced to uses within Washington. The portions of revenue paid in salaries and re-spent within Washington, used for local purchases, and paid in taxes by individuals, and state and local taxes paid by firms, represent impacts that can be traced as remaining in the state. Other portions of the revenue are used to pay stockholders, retire debt, pay Federal taxes, purchase out-of-state supplies, services and capital equipment, and for other investments.

The revenue for firms in the airline/airport service sector is estimated from a combination of survey results and airport concession records. For airlines, the revenue is based on a per enplaning passenger revenue estimate, provided by each airline. For the other firms in this category, revenue estimates, by firm, were collected through the surveys, and from Sea-Tac concession reports.

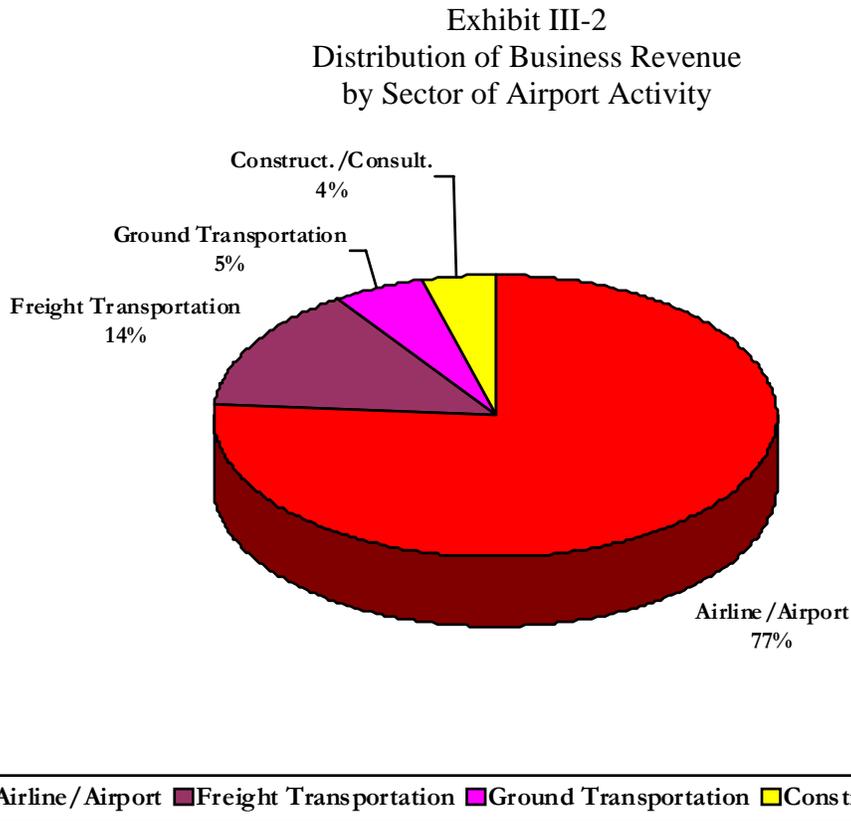
Freight sector revenue is based on average revenue per pound of enplaned air freight and air express (mail), as reported by major air carriers, and freight airlines. This revenue per pound includes pickup, delivery, and air transportation charges, and excludes the value of the air cargo.

Revenue for the Ground Transportation Sector is based on revenue per job estimates for rental cars as obtained from airport concession reports and survey results. Revenue for taxis/limos/buses is based on an average revenue per passenger multiplied by the corresponding number of passengers using that mode.

Revenue for the Construction and Consulting Sector is based on construction/consulting expenditures by the Port of Seattle at Sea-Tac.

In 2007, 31.3 million passengers boarded airplanes at Sea-Tac, and 136,201 metric tons of airfreight (both air cargo and mail) was loaded at Sea-Tac. This passenger and air cargo activity at Sea-Tac generated \$13.1 billion of business revenue to the firms supplying these services.

Exhibit III-2 indicates the distribution, by economic impact sector, of the \$7.6 billion of revenue generated by on-site airport activity.



As with the employment impact, the majority of revenue generated by airport activity (77 percent) is concentrated in the airline/airport service sector. About 14 percent of the revenue accrues to firms in the freight transportation sector. The relatively high revenue yield per employee resulting from the transportation of air cargo reflects the premium paid for air shipment of these high-value goods.

In addition to the \$7.6 billion of revenue generated in the four economic sectors described above, additional revenue is generated in the local visitors industry as the result of purchases by visitors to the area who used Sea-Tac. This visitor industry revenue is described in Section 6 of this chapter.

#### **4. EMPLOYEE EARNINGS IMPACT**

The portion of the \$7.6 billion revenue impact paid out in salaries and wages is described in this section. In total, activity at Sea-Tac created \$2.1 billion of direct, induced and indirect wages and salaries and local consumption expenditures. A breakdown of the income impact follows.

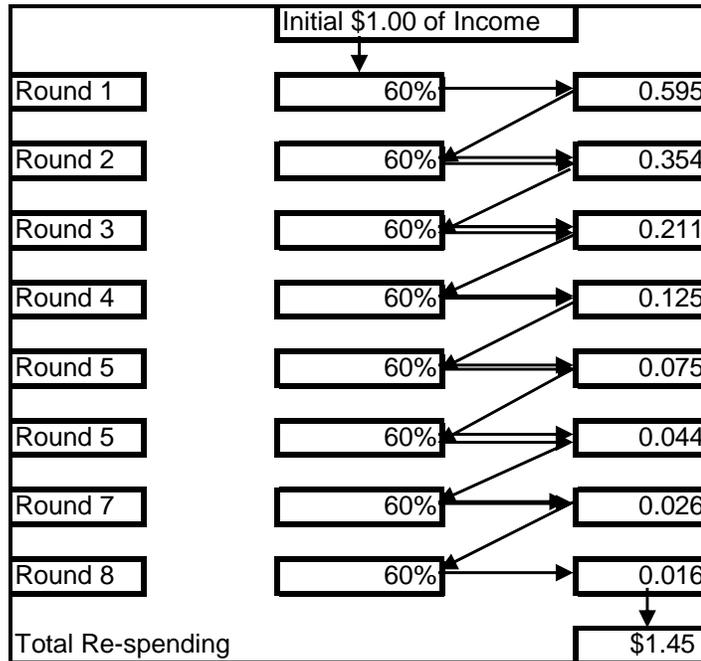
An estimated total of \$778.1 million was paid in wages and salaries to the 18,773 direct employees, representing an average annual salary of \$41,445. This \$778.1 million employee earnings impact is estimated based on the average wage and salaries for each job category, multiplied by the corresponding job impact in that category. The spending of these employee earnings within the state creates the additional employment estimated as induced jobs, which results in an additional \$1.1 million of personal earnings and purchases.

Re-spending of income within a state is measured by a local income multiplier. The size of the multiplier varies by state depending on the proportion of goods and services purchased locally by individuals. The higher this percentage, the lower is the income leakage out of the region. Based on data provided from the Bureau of Economic Analysis, for every one dollar earned by individuals in the Seattle regional economy, about 59.5 percent is spent locally, resulting in a total of \$1.45 additional spending for every dollar received in wages and salaries. This re-spending impact is known as the personal income multiplier. Hence, the personal income multiplier for the Seattle area is \$2.45, and was used to estimate the induced income and consumption impact of \$1.1 billion as a result of airport activity. According to the Bureau of Economic Analysis, for every one dollar earned in the Seattle regional economy, about 59.5 percent is spent on goods and services within the region, while the remaining share is used to purchase items produced out-of-area, or to pay Federal, state and local taxes or held as savings. The full income multiplier effect results from successive rounds of re-spending. For example, in the initial round, one dollar is earned. Of that \$1.00, nearly \$.60 is used to purchase goods and services. Of that \$.60, 59.5 percent, or \$.354, will be used for the next round of purchases of goods and services. Of this \$.354, again 59.5 percent, or about \$.211 will be used for further regional purchases. These successive re-spending rounds will continue until an additional \$1.45 of spending in the Seattle economy is generated for every dollar of income. At each stage of the re-spending, additional jobs are created. These are the induced jobs described in the employment section.<sup>8</sup> Exhibit III-3 graphically depicts this re-spending impact.

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<sup>8</sup> It is to be emphasized that the re-spending impact of \$1.1 billion does not represent the earnings of the 11,538 induced jobs. The \$1.1 billion re-spending impact does include the direct earnings received by the employees holding the induced jobs, but the re-spending impact also includes the revenue received by the firms providing the goods and services to the 18,773 directly employed.

Exhibit III-3  
Re-spending Impact



In addition to the re-spending impact, the 4,723 indirect jobholders earned \$210.2 million in indirect wages and salaries.

**5. TAX IMPACTS**

Airport activity generated Federal, state and local tax revenues paid by the total direct, induced and indirect jobholders as well as by the firms providing the services. In 2007, activity at Sea-Tac generated about \$192.3 million of state and local tax revenue, of which \$124.4 was collected at the state level and \$67.8 was collected at the municipal and county level. In addition, \$439.4 million of Federal aviation-specific taxes were collected from passenger and air freight activity at Sea-Tac.

**6. VISITOR INDUSTRY IMPACTS**

Sea-Tac International Airport plays an important role in the visitors industry in the U.S. Pacific Northwest, as well as in British Columbia. For Americans, Seattle is a gateway to destinations in the Pacific Rim countries, just as it is a gateway to the West for many Asians.

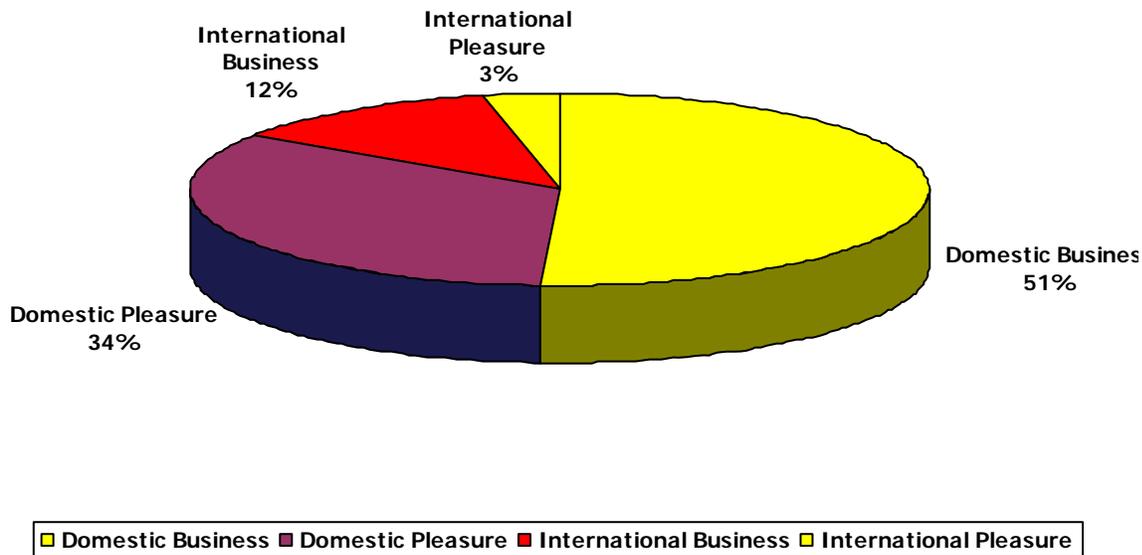
An in-terminal survey of 950 passengers at Sea-Tac was conducted by the Northwest Research Group as part of this study to determine visitor characteristics. The timing of the survey, the week of November 17<sup>th</sup>, may capture a larger share of pleasure travelers than is the annual

average. However a review of the monthly passenger statistics suggests that seasonality in passenger numbers is not a significant factor. To control for seasonality in the type of passenger, it is recommended that the Port of Seattle institute an on-going passenger intercept survey through the course of the year.

Results of the survey indicated that of the 15.7 million passengers boarding flights at Sea-Tac, about 7.6 million are visitors to the area. The remaining passengers are making connections at Sea-Tac or are Seattle area residents.

The composition of these visitors is presented in Exhibit III-4.

Exhibit III-4  
Distribution of 6.3 Million Visitors Using Sea-Tac

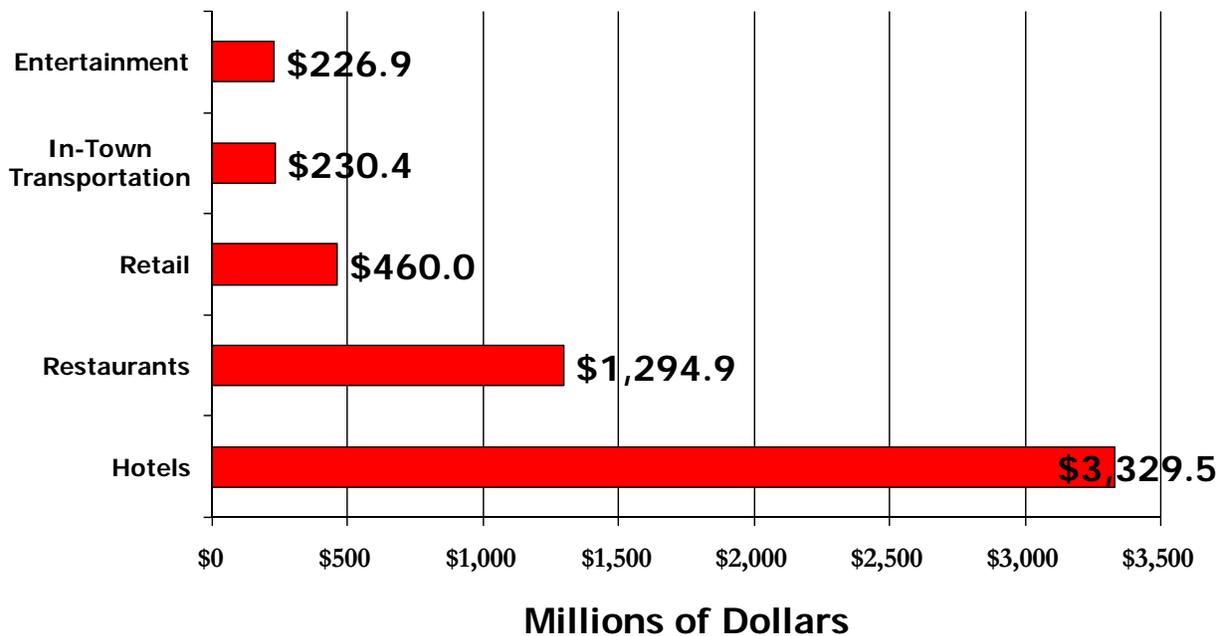


The majority, 51 percent, of the 7.6 million visitors consists of domestic business travelers, while 34 percent of the visitors are domestic pleasure travelers. International business travelers account for about 12 percent of the total visitors, and international pleasure travelers account for 3 percent of visitors. Visitor spending and length of stay patterns vary depending on the type of visitor. Domestic business travelers stay an average of 3.8 days and spend an average of \$233 daily. Domestic visitors on vacation, visiting friends and relatives, or attending conventions stay an average of 6.8 days and spend about \$123 per day after adjusting for the percentage of pleasure travelers that stay with friends or relatives. International visitors on vacation or visiting relatives stay an average of 10 days, and spend an estimated \$168 per day, while international business travelers stay an average of 3.3 days and spend about \$206 per day. Together, these guests from out-of-town bring \$5.5 billion to the Seattle area each year

## 6.1 Visitor Industry Revenue Impact

The bulk of visitor dollars are spent on accommodations, restaurants, and retail shopping, in that order. Business travelers tend to spend more of their travel dollar on hotels than their pleasure-seeking counterparts, whose budgets are more heavily weighted toward retail, entertainment, and sightseeing. The Seattle area benefits significantly from this visitor traffic. The 7.6 million air visitors to the Seattle area spent \$5.5 billion on local goods and services. The distribution of these purchases to the various industry categories in the visitors' industry sector is presented in Exhibit III-5.

Exhibit III-5  
Distribution of Air Visitors' Purchases in the  
Local Visitor Industry Sector

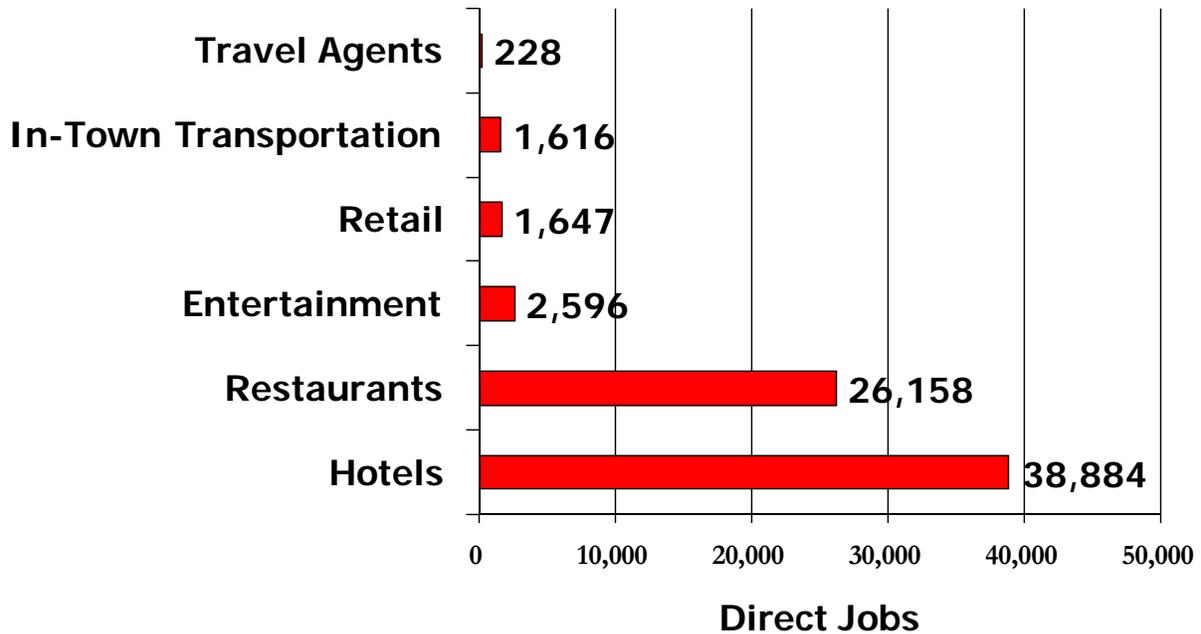


As the exhibit indicates, air visitors spend \$3.3 billion in hotels, about \$1.3 billion in restaurants and about \$500 million on retail purchases. With respect to where the visitors spend their money, 51 percent stay in hotels in downtown Seattle, 9 percent in Sea-Tac, and 8 percent in Bellevue.

## 6.2 Visitor Industry Direct Job Impacts

These direct purchases support direct jobs in these visitor industry sector categories. In total, the \$5.5 billion of visitor industry purchases generated 71,129 direct jobs. These jobs are generated in the various industry categories, as shown in Exhibit III-6. This exhibit shows that the majority of the direct visitor industry jobs are generated with hotels, followed by jobs with area restaurants.

Exhibit III-6  
Distribution of Direct Visitor Industry Jobs



**6.3 Visitor Industry Induced and Indirect Job Impacts**

As the result of local purchases by those 71,129 directly employed individuals, 24,046 induced jobs are supported in the Seattle area economy.

No local purchase data was collected from hotels and other sectors of the visitors industry. Instead, the Bureau of Economic Analysis developed indirect job multipliers for the various sectors of the Seattle visitors industry. These multipliers were combined with the direct job impacts by visitor industry sector to estimate the indirect impacts. The indirect income is based on personal income indirect coefficients for the respective visitors’ industry sectors. Using the indirect job multipliers for the Seattle visitors industry, it is estimated that \$345.3 million of local purchases were made by the visitor industry firms. These purchases supported 8,161 indirect jobs.

**6.4 Visitor Industry Personal Income Impact and State and Local Tax Impact**

These 71,129 directly employed individuals received wages and salaries totaling \$1.4 billion as a result of visitor spending. As a result of purchases for food, clothing, housing, entertainment, and other needs by these directly employed individuals, induced jobs and consumption expenditures are created locally. This re-spending fuels additional economic activity, creating further jobs and income.

Of the \$1.4 billion in direct income received by 71,129 direct visitor industry jobs, an additional \$858.7 million is spent before the cycle is exhausted. This spending and re-spending supports 24,046 induced jobs in the basic industries of housing, food, clothing, transportation, health care and entertainment, as well as business services, social services and education. The indirect jobholders received \$180.0 million in wages and salaries.

About \$220 million of state and local taxes were generated by the visitors using Sea-Tac International Airport.

## **IV. COMPARISON OF ECONOMIC IMPACTS GENERATED BY THE SEATTLE SEAPORT AND SEA-TAC INTERNATIONAL AIRPORT 2003-2007**

The purpose of this chapter is to provide a comparison of the economic impacts generated by seaport and airport activity between 2003 and 2007. The methodology used by Martin Associates to estimate the economic impacts generated by seaport and airport activity is, for the most part, identical to the methodology used by Martin Associates to estimate the economic impacts of the seaport and airport in 2007.

In the next section of this chapter, the key methodological changes between the 2003 and 2007 studies are presented. Comparisons between seaport cargo impacts are presented in Section 2 of this chapter, while the comparisons of airport impacts are made in Section 3. Changes in the impacts of the real estate sector are not included due to the fact that there have been changes in the classification of some of the tenants included in real estate line of business between 2003 and 2007.

### **1. CHANGES IN IMPACT METHODOLOGY**

The basic methodology used to measure the 2003 economic impacts is the same as that used by Martin Associates for this current study, with the following exceptions. In 2007, the personal income multiplier used to estimate the re-spending impact has been updated by the U.S. Bureau of Economic Analysis for the Seattle metropolitan area -- in 2003, the income multiplier was estimated by the Bureau of Economic Analysis for the entire transportation sector in the region. As of 2007, the Bureau of Economic Analysis now provides an estimate of the personal income multiplier for the water transportation sector and air transportation sector of the metropolitan region, which more accurately reflects the higher wages and re-spending impact associated with seaport and airport generated jobs compared to the transportation sector in total, which also includes mass transit, taxis, and surface transportation sectors. In 2003, the personal income multiplier was 1.98 while in 2007, the income multiplier for the water transportation sector is 4.095, reflecting the higher wages in this sector. For the airport, the income multiplier used in 2003 was 1.98, compared to an air transportation-specific income multiplier of 2.45. As a result, for a given dollar of income, the updated multiplier will generate a much larger induced job impact and greater re-spending impact.

Secondly, the continued growth in productivity in the United States Economy has resulted in a lower job impact per dollar value of expenditures for the indirect job impacts.

Also included in the 2007 study is an estimate of the total economic impact associated with the cargo moving via the seaport and airport. In past studies, only the related job impacts with port and airport users were estimated.

## 2. COMPARISON OF TOTAL PORT OF SEATTLE IMPACTS

Between 2003 and 2007, direct jobs at the Port of Seattle fell by 4,518 jobs, primarily reflecting changes in airline passengers spending activity between 2003 and 2007. Induced jobs increased as the result of the changes in the income multipliers used for the seaport and airport, as described in the previous section, and this change in the income multiplier definition also is reflected in the growth of re-spending and local consumption expenditures. The growth in the average salary reflects the growth in higher paying jobs related to the growth in containerized cargo activity, as well as the increased number of fish processing vessels and factory trawlers berthed at Port of Seattle facilities compared to 2003. The decline in indirect jobs over time is the result of the reduced level of local purchases, as well as the growth in productivity over the 2003-2007 period. Business revenue to service providers to seaport and airport operations increased as the result of the growth in seaport cargo as well as air passengers. The state and local tax impacts also grew as the result of the growth in the personal income and local consumption expenditures/re-spending impacts. The changes in impacts are summarized in Table IV-1.

Table IV-1  
Comparison of Overall Port of Seattle Economic Impacts  
2003-2007

	2007 IMPACTS	2003 IMPACTS	CHANGE
<b>JOBS</b>			
<b>DIRECT JOBS</b>	111,317	115,835	(4,518)
<b>INDUCED</b>	62,128	51,679	10,449
<b>INDIRECT</b>	20,540	27,319	(6,779)
<b>TOTAL</b>	193,986	194,833	(848)
<b>INCOME (MILLIONS)</b>			
<b>DIRECT</b>	\$3,761.5	\$3,006.5	\$755.0
<b>RE-SPENDING</b>	\$5,066.4	\$3,004.9	\$2,061.5
<b>INDIRECT</b>	\$699.8	\$795.9	(\$96.0)
<b>TOTAL</b>	\$9,527.7	\$6,807.2	\$2,720.5
<b>REVENUE (MILLIONS)</b>	\$17,559.2	\$12,121.3	\$5,437.9
<b>LOCAL PURCHASES (MILLIONS)</b>	\$1,438.6	\$1,502.5	(\$63.9)
<b>STATE AND LOCAL TAXES (MILLIONS)</b>	\$867.0	\$631.8	\$235.3

In the balance of this chapter, the changes in impacts by Port of Seattle operations are described in more detail.

## 3. COMPARISONS OF MARINE CARGO THROUGHPUT AND SEAPORT OPERATIONAL CHARACTERISTICS

In this section, change in tonnage activity at the Seattle seaport and changes in the operational structure of the Seattle seaport are documented.

### 3.1 Comparison of Port of Seattle Marine Terminal Tonnage

Between 2003 and 2007, tonnage moving over the Port of Seattle marine terminals increased by 8 million metric tons. Tonnage gains for all cargo with the exception of break bulk and liquid bulk, although these losses were very small. Containerized cargo grew by 5.5 million tons while grain exports increased by 2.2 million tons. Table IV-2 shows the changes in tonnage.

Table IV-2  
Comparison of Tonnage Handled at Port of Seattle Marine Terminals  
(1,000) Metric Tons

Commodity	2007	2003	Change
	1,000 Metric Tons	1,000 Metric Tons	
Containerized Cargo	15,244.1	9,790.9	5,453.2
Grain	5,333.0	3,107.7	2,225.3
Breakbulk	116.6	117.9	(1.3)
Petroleum	1,240.8	909.9	330.9
Liquid Bulk	46.7	46.8	(0.1)
Total	21,981.2	13,973.3	8,008.0

### 3.2 Comparison of the Economic Impacts Generated by Marine Cargo and Vessel Activity at the Seattle Seaport, 2003 - 2007

Table IV-3 shows that direct jobs grew by 2,747 jobs over the four-year period, while the direct income earned grew by \$157 million. The average annual earnings of the 12,428 direct employees was \$51,300 compared to a \$49,700 average salary earned in 2003. Business revenue grew by \$1.6 billion over the period, reflecting the growth in containerized cargo as well as grain exports.

Table IV-3  
Comparison of Seattle Seaport Impacts  
2003-2007

	Port of Seattle Cargo Operations 2007	Port of Seattle Cargo Operations 2003	CHANGE
<b>JOBS</b>			
<b>DIRECT</b>	12,428	9,681	2,747
<b>INDUCED</b>	16,639	5,804	10,835
<b>INDIRECT</b>	4,224	2,707	1,517
<b>TOTAL JOBS</b>	33,291	18,192	15,099
<b>PERSONAL INCOME (millions)</b>			
<b>DIRECT</b>	\$637.4	\$480.7	\$157
<b>RE-SPENDING</b>	\$1,972.7	\$471.5	\$1,501
<b>INDIRECT INCOME</b>	\$186.7	\$103.2	\$84
<b>TOTAL INCOME</b>	\$2,796.8	\$1,055.3	\$1,741
<b>BUSINESS REVENUE (millions)</b>	\$3,060.4	\$1,438.3	\$1,622
<b>LOCAL PURCHASES (millions)</b>	\$438.8	\$251.6	\$187
<b>STATE AND LOCAL TAXES (millions)</b>	\$254.5	\$104.5	\$150

Totals may not add due to rounding

Indirect jobs grew as the result of the \$187 million increase in local purchases, while tax revenue grew by \$150 million.

### 3.3 Comparison of Direct Job Impacts by Commodity

Table IV-4 compares the direct job impacts by commodity between 2003 and 2007. The major growth in jobs was due to the significant increase in containerized cargo, primarily international containerized cargo moving via the port. Other cargoes recorded a smaller increase in jobs. The increase in jobs associated with break bulk cargoes despite the loss in tonnage of break bulk cargo reflects the inclusion of barge terminal jobs and crew based in Seattle that move cargo to and from Alaska. These crew jobs were not included in the 2003 study.

Table IV-4  
Comparison of Direct Jobs by Commodity

Commodity	2007 Direct Jobs	2003 Direct Jobs	Change
Containerized Cargo	7,034	4,919	2,115
Grain	468	324	144
Breakbulk	490	349	141
Petroleum	269	57	212
Liquid Bulk	26	28	(2)
Not Allocated	<u>4,141</u>	<u>4,003</u>	<u>138</u>
Total	12,428	9,681	2,747

### 3.4 Comparison of Direct Jobs by Job Category

Table IV-5 summarizes the changes in the direct jobs, by job category, for the vessel and cargo activity at the Port of Seattle's marine terminals. The biggest job growth was in the jobs with government, which reflects the growth in security. The next largest employment gain was with the barge and bunkering operations. This growth in jobs reflects the inclusion of crew based in Seattle that were not counted in 2003. Jobs with trucking and rail grew, driven by the growth in containerized cargo, and further the growth in rail also reflects the increased share of cargo moving via rail versus truck. In 2003 about 60% of containerized cargo moved by rail, while in 2007, about 75% of the international containerized cargo moved by rail out of the state. The ILWU also recorded an increase in jobs growing by 262 full time equivalent jobs.

Table IV-5  
Comparison of Direct Jobs by Job Category

	2007 DIRECT JOBS	2003 DIRECT JOBS	CHANGE
<b>SURFACE TRANSPORTATION</b>			
RAIL	1,621	1,080	541
TRUCK	1,931	1,535	396
<b>MARITIME SERVICES</b>			
TERMINAL EMPLOYEES	444	334	110
ILWU/DOCKWORKERS	1,038	776	262
TOWING	95	59	36
PILOTS	20	22	(2)
AGENTS	166	136	30
SURVEYORS/CHANDLERS	492	161	331
FORWARDERS	422	281	140
WAREHOUSE	1,036	982	54
GOVERNMENT	1,770	1,010	760
SHIPYARDS/SHIPREPAIR	1,865	2,354	(489)
BARGE	1,017	311	706
BUNKERS/MISCELLANEOUS	45	21	24
<b>BANKING/INSURANCE/LAW</b>	188	188	0
<b>PORT OF SEATTLE</b>	<u>282</u>	<u>432</u>	<u>(151)</u>
<b>TOTALS</b>	<b>12,428</b>	<b>9,681</b>	<b>2,747</b>

The growth in jobs with the other categories reflects the growth in cargo moving via the port.

#### 4. COMPARISON OF CHANGES IN THE CRUISE IMPACTS

Between 2003 and the 2008 cruise season, the number of cruise vessel calls at the Port of Seattle increased from 99 calls in 2003 to 187 cruises in 2008, and the number of passengers grew from 345,000 passengers to about 800,000 passengers in 2008. As a result of this more than doubling of the cruise business, impacts created by the Port of Seattle cruise activity have grown significantly as shown in table IV-6.

Table IV-6  
Comparison of Cruise Impacts

	2008 Impacts	2003 Impacts	Change
<b>JOBS</b>			
<b>DIRECT</b>	1,955	530	1,425
<b>INDUCED</b>	1,125	177	948
<b>INDIRECT</b>	<u>701</u>	<u>365</u>	337
<b>TOTAL JOBS</b>	3,782	1,072	2,710
<b>PERSONAL INCOME (1,000)</b>			
<b>DIRECT</b>	\$64,147.0	\$13,665.7	\$50,481.3
<b>RE-SPENDING</b>	\$92,763.5	\$13,629.4	\$79,134.1
<b>INDIRECT INCOME</b>	<u>\$20,052.2</u>	<u>\$11,635.7</u>	<u>\$8,416.5</u>
<b>TOTAL INCOME</b>	\$176,962.7	\$38,930.8	\$138,031.9
<b>BUSINESS REVENUE (1,000)</b>	\$312,497.0	\$106,897.6	\$205,599.5
<b>LOCAL PURCHASES (1,000)</b>	\$31,219.8	\$17,039.0	\$14,180.7
<b>STATE AND LOCAL TAXES (1,000)</b>	\$16,103.6	\$3,815.2	\$12,288.4

## 5. COMPARISON OF IMPACTS GENERATED BY FISHING BASED AT PORT OF SEATTLE TERMINALS

Between 2003 and 2007 the direct jobs impacts by the Port of Seattle based fishing industry have declined slightly, reflecting the closing of several fish processors, as well as a reduced number of jobs with boat repair operations. Induced jobs increased as the result of the changes in the income multiplier. The income impact has increased significantly reflecting the growth in average salary of crew, particularly with crew on the large factor processors now based at Terminal 91. Indirect jobs fell due to a reduction in local purchases. Also, the number of fishing vessels using Port of Seattle facilities fell from 370 vessels in 2003 to 250 vessels in 2007, but the number of processors berthed at Terminal 91 increased, resulting in an increase in the average earnings per crewman.

Table IV-7  
Comparison of Port of Seattle Fishing Impacts

	2007 FISHING	2003 FISHING	CHANGE
<b>JOBS</b>			
DIRECT	5,607	5,877	(270)
INDUCED	8,028	4,184	3,844
INDIRECT	<u>1,337</u>	<u>1,774</u>	(438)
<b>TOTAL JOBS</b>	14,972	11,836	3,136
<b>PERSONAL INCOME (millions)</b>			
DIRECT	\$823,476.6	\$392,243.3	\$431,233.3
RE-SPENDING	\$966,679.1	\$384,790.7	\$581,888.5
INDIRECT	<u>\$51,844.5</u>	<u>\$68,990.0</u>	(\$17,145.4)
<b>TOTAL INCOME</b>	\$1,842,000.2	\$846,024.0	\$995,976.3
<b>BUSINESS REVENUE (millions)</b>	\$814,363.6	\$672,008.5	\$142,355.1
<b>LOCAL PURCHASES (millions)</b>	\$104,163.2	\$113,712.3	(\$9,549.1)
<b>STATE AND LOCAL TAXES (millions)</b>	\$167,622.0	\$83,756.4	\$83,865.6

## 6. COMPARISON OF IMPACTS GENERATED BY MARINA ACTIVITY

Marina impacts fell over the four year period, reflecting the closing of several uplands tenants including restaurants and the loss of jobs with boat yards dedicated to marina operations. The number of recreational boats moored at Port of Seattle marinas fell by 195 boats since 2003. These impact comparisons are shown in Table IV-8

Table IV-8  
Comparison of Port of Seattle Marina Impacts

	2007 MARINAS	2003 MARINAS	CHANGE
<b>JOBS</b>			
DIRECT	123	315	(192)
INDUCED	129	164	(35)
INDIRECT	<u>100</u>	<u>209</u>	<u>(109)</u>
<b>TOTAL JOBS</b>	352	688	(336)
<b>PERSONAL INCOME (millions)</b>			
DIRECT	\$4,575.4	\$11,850.7	(\$7,275.3)
RE-SPENDING	\$14,160.8	\$11,625.5	\$2,535.3
INDIRECT	<u>\$3,886.6</u>	<u>\$8,254.2</u>	<u>(\$4,367.6)</u>
<b>TOTAL INCOME</b>	\$22,622.8	\$31,730.4	(\$9,107.6)
<b>BUSINESS REVENUE (millions)</b>	\$13,831.4	\$26,109.3	(\$12,277.8)
<b>LOCAL PURCHASES (millions)</b>	\$7,845.4	\$11,962.7	(\$4,117.3)
<b>STATE AND LOCAL TAXES (millions)</b>	\$2,058.7	\$3,141.3	(\$1,082.6)

## 7. COMPARISON OF IMPACTS GENERATED BY AIRPORT ACTIVITY AT SEA-TAC INTERNATIONAL AIRPORT

In this section, the 2003 and 2007 economic impacts generated by the passenger and air cargo activity at Sea-Tac International Airport are compared. The first section describes changes in airport operational characteristics that have occurred over the four-year period, while the comparisons of the impacts generated by the airport are presented in the second section.

Passenger activity at Sea-Tac International Airport increased between 2003 and 2007. Between 2003 and 2007, total passenger activity grew from 26.8 million in 2003 to 31.3 million passengers in 2007. Passengers on international flights at Sea-Tac remained at the same level as in 2003, 2.2 million. Between 2003 and 2007, total air cargo handled at Sea-Tac decreased from 351,418 metric tons in 2003 to about 319,013 metric tons in 2007.

Table IV-9 presents the comparison of on-site economic impacts generated by Sea-Tac between 2003 and 2007.

Table IV-9  
Comparison of Economic Impacts Generated by Sea-Tac

	2007 (On-Site)	2003 (On-Site)	Change
<b>Jobs</b>			
<b>Direct</b>	18,773	19,017	(244)
<b>Induced</b>	11,538	10,205	1,333
<b>Indirect</b>	<u>4,723</u>	<u>3,917</u>	<u>806</u>
<b>Total</b>	35,034	33,139	1,895
<b>Wages/Salaries (Millions)</b>			
<b>Direct</b>	\$778.1	\$762.4	\$15.7
<b>Re-Spending</b>	\$1,124.5	\$747.9	\$376.6
<b>Indirect</b>	<u>\$210.2</u>	<u>\$166.5</u>	<u>\$43.7</u>
<b>Total</b>	\$2,112.9	\$1,676.8	\$436.1
<b>Business Revenue (Millions)</b>	\$7,596.9	\$4,329.4	\$3,267.5
<b>POS Revenue</b>			
<b>Local Purchases (Millions)</b>	\$439.3	\$376.7	\$62.6
<b>State/Local Taxes (Millions)</b>	\$192.3	\$166.0	\$26.3
<b>Aviation Taxes (Millions)</b>	\$439.4	\$264.3	\$175.1

As this table indicates, despite the growth in passengers, on-site direct jobs generated by passenger and air cargo activity fell by 244 jobs. This reflects the move of the post office operations to an off- airport site in Kent, as well as a decline in construction activity at the Airport. The growth in passenger activity is reflected in the growth of all other impact measures since 2003.

The number of visitors arriving via Sea-Tac has grown 7.1 million in 2003 to 7.6 million in 2007. However, the impact in visitor industry impacts actually declined since 2003, as shown in Table IV-10. The major change in visitor impacts is that there was a significant shift in the share of domestic travelers that were on business compared to the share in 2003. In 2007, about 60 percent of the domestic travelers were business travelers compared to 30 percent in 2003. While this may reflect the timing of the surveys in 2003, which occurred in August, 2004, compared to the passenger survey conducted in November, 2008, the more critical change was in how the visitors spent money in the local economy. In 2008, a much larger share of the visitor expenditures was with hotels than was the case in 2003, and the jobs created per dollar of revenue is smaller for hotels than for restaurant and retail sales. Thus the lower direct job impact in 2007 compared to 2003, even though the revenue increased by \$214 million over the four year period.

Table IV-10  
Comparison of Visitor Industry Impacts  
2003-2007

	Visitors Industry 2007	Visitors Industry 2003	Change
<b>Jobs</b>			
Direct	71,129	78,982	(7,853)
Induced	24,046	29,926	(5,880)
Indirect	<u>8,161</u>	<u>18,127</u>	<u>(9,966)</u>
<b>Total</b>	103,336	127,035	(23,699)
<b>Wages/Salaries (Millions)</b>			
Direct	\$1,380.5	\$1,272	\$109
Re-Spending	\$858.7	\$1,248	(\$389)
Indirect	<u>\$180.0</u>	<u>\$425</u>	<u>(\$245)</u>
<b>Total</b>	\$2,419.2	\$2,945	(\$526)
<b>Business Revenue (Millions)</b>	\$5,541.6	\$5,328	\$214
<b>Local Purchases (Millions)</b>	\$345.3	\$695	(\$349)
<b>State/Local Taxes (Millions)</b>	\$192.3	\$249	(\$57)

Table IV-11 compares the direct job impact by job category. The comparison of jobs by category underscores the continual reduction in employment by airlines, as well as the movement of the non-airport dependent post office operations to an annex in Kent. The reduction in jobs in the construction sector reflects the reduced level of construction expenditures from \$95.6 million to \$56.3 million in 2007. The growth of jobs with FBO's is the result of the growth in work tasks previously performed by airlines that are now performed by outside FBO's. The growth in air cargo jobs despite the decline in freight airlines/couriers is the result of the inclusion of airport based Post Office employees with freight airlines/couriers, rather than with the government category.

Table IV-11  
Comparison of Direct Airport Generated Jobs by Category

Job Category	Direct Jobs 2007	Direct Jobs 2003	Change
<b>Airline/Airport Services Sector</b>			
Passenger Airlines	7,175	7,594	(419)
Catering	608	505	103
Skycaps	564	573	(9)
Government Agencies	1,256	1,712	(456)
Airport Administration	1,137	1,171	(34)
Retail Concessions	1,525	1,137	388
General Aviation/FBO's	1,403	445	958
Custodial	179	215	(36)
Parking	146	<u>182</u>	<u>(36)</u>
Subtotal	13,993	13,534	459
<b>Freight Transportation Sector</b>			
Freight Airlines/Couriers	912	712	200
Freight Forwarders	247	<u>259</u>	<u>(12)</u>
Subtotal	1,159	971	188
<b>Passenger Ground Transportation Sector</b>			
Rental Cars	821	874	(53)
Cabs/Buses/Limos/Vans	<u>1,205</u>	<u>906</u>	<u>299</u>
	2,026	1,780	246
<b>Construction/Consulting</b>	1,595	2,732	(1,137)
<b>Total</b>	18,773	19,017	(244)