



**Washington State  
Department of Transportation**

# **Washington State Freight Mobility Plan Task 2: Interim Data Report**

June 2012

**Freight Systems Division**

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**Contents**

**Executive Summary** ..... 1

    Overview ..... 1

    What is the Purpose of the Washington State Freight Mobility Plan Data Report? ..... 1

**Global Gateways: International and National Trade Flows Through Washington**..... 2

    The Importance of Trade in Washington’s Economy..... 2

        International Trade Increases the Number of State Jobs ..... 2

        Jobs Created by Local Seaports ..... 2

        Railroads and Interstate Trucking Employment ..... 3

    Washington’s Role in International Trade ..... 3

        Washington and Major U.S. Trading Partners..... 4

        Trade Continues to Grow – Worldwide and in Washington ..... 4

    East-West Trade: Washington is a Gateway for Asian Trade to and from the Midwest and the East Coast ..... 7

        Washington’s Seaports Are Global Gateways for Containerized Asian Imports..... 7

        Seattle and Tacoma Are Washington’s Major Container Ports..... 8

        Washington’s Two Major Ports Are Investing..... 10

        Washington’s Rail Corridors Move Containers to U.S. Markets..... 10

        Operations of Washington State’s Mainline Railroads..... 11

        Highways Are Also Important East-West Freight Corridors ..... 12

    Agricultural Exports: Washington Moves American Products to the Pacific Rim..... 13

        Washington’s Columbia River Ports Are Gateways for Agricultural Exports ..... 14

    Washington Supports Freight on North-South Corridors ..... 18

        The U.S.-Canadian Border Is a Major Freight Gateway ..... 18

        Rail Crossings at the U.S.-Canadian Border..... 18

        The Blaine Border Crossing Handles a High Volume of Truck Traffic..... 19

        Washington’s Border Links Canadian Trade With Other U.S. States..... 20

        Washington-Canadian Border Delays, Congestion, and Security Issues ..... 22

    Freight Movement Along the North-South Highway Corridors ..... 23

        Interstate 5 Freight Movements..... 23

        Other Important North-South Truck Corridors in Washington State ..... 26

        Washington’s Freight System Connects Alaska with the Continental United States and Points Beyond ..... 26

    Washington’s Airports Are Gateways for High-Value and Time-Sensitive Goods ..... 27

The Majority of Air Cargo Moves Through Sea-Tac .....	27
King County International Airport/Boeing Field Air Cargo.....	29
<b>Made in Washington: Freight Transportation Serves Washington State’s Own Producers</b> .....	30
Overview of the State’s Production Economies .....	31
Southeast Washington Sells Wheat to the World.....	32
The Columbia Basin and North Central Washington: Agricultural Growing and Processing Center .....	34
Central Puget Sound: Manufacturing, Construction, and Maritime Center.....	36
Central Puget Sound Maritime Sector .....	38
Seattle: Home of the North Pacific Fishing Fleet.....	38
Spokane Region: Eastside Center of Manufacturing and Commerce .....	39
Vancouver: Southwest Washington’s Metropolitan Area.....	40
Northwest Washington.....	41
Coastal Counties: Forestry and Manufacturing.....	42

**List of Exhibits**

Exhibit 1: Washington’s Rank in the Top U.S. International Freight Gateways in 2009..... 3

Exhibit 2: Value of International Trade of Goods by Country through Washington..... 4

Exhibit 3: International Trade Trends for the U.S..... 5

Exhibit 4: International Trade Trends for Washington State ..... 6

Exhibit 5: Goods Entering Washington State by Water\*..... 8

Exhibit 6: International Imports Entering Washington’s Seaports. .... 9

Exhibit 7: International Movement of Containerized Cargo at the Ports of Seattle and Tacoma 2000-2010.  
..... 9

Exhibit 8: Current and Projected Number of Trains on Rail Line Segments..... 11

Exhibit 9: Major Flows by Truck To, From, and Within Washington: 2007 ..... 12

Exhibit 10: Food and Food Products Leave Washington State by Water\* ..... 13

Exhibit 11: Foreign Shipments Leaving Washington’s Seaports in 2009 ..... 14

Exhibit 12: Farm Products Comprise the Majority of Goods Bound for Washington by Rail ..... 17

Exhibit 13: Barge Traffic on the Columbia-Snake River System, 2010 ..... 18

Exhibit 14: Trucks Entering Washington State from Canada, 1995-2011 ..... 19

Exhibit 15: Trucks Entering Washington from Canada, 2011 ..... 20

Exhibit 16: Blaine’s Border Crossing Ranks in the Top Six for Value and Top Four for Volume of Crossings  
Among Land Ports Along the U.S. – Canadian Border in 2011. .... 20

Exhibit 17: Truck Trade Value through I-5 Border (Blaine Crossing) by Origin and Destination, 2011 ..... 21

Exhibit 18: Commodities Transported Cross-Border at the Cascade Gateway by Truck: North-South  
Commodities Comparison, 2007-2010 (in Billions of Dollars)..... 22

Exhibit 19: Estimated Annual Daily Truck Traffic in Washington, 2007 and 2040 ..... 25

Exhibit 20: Air Cargo Through Sea-Tac International Airport ..... 28

Exhibit 21: Seattle-Tacoma International Airport Air Freight 2010..... 28

Exhibit 22: Washington State Regional Economies ..... 31

Exhibit 23: Grain Elevator ..... 32

Exhibit 24. Transportation Rates by Wheat Elevator Firms. .... 34

Exhibit 25: Loading a log truck..... 35

Exhibit 26: Washington Aerospace Suppliers – by County and Activity..... 37

Exhibit 27: Seattle Maritime Cluster Firms in 2008 ..... 39

Exhibit 28: Washington State Agriculture Production by County, 2007..... 44

## Executive Summary

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### Overview

The three components of Washington State's freight system are:

- Global Gateways – International and National Trade Flows Through Washington.
- Made in Washington – Regional Economies Rely on the Freight System.
- Delivering Goods to You – The Retail and Wholesale Distribution System.

These components underpin our national and state economies, support national defense, directly sustain hundreds of thousands of jobs, and distribute the necessities of life to every resident of the state every day.

First, Washington is a gateway state, connecting Asian trade flows to the U.S. economy, Alaska to the Lower 48, and Canada to the U.S. West Coast. More than 95 percent of U.S. cargo imports arrive by ship. West Coast ports, including Seattle/Tacoma, accounted for 75 percent of Asian imports. These imports are then connected to the U.S. intermodal system and are able to arrive at the U.S. East Coast in about 18 days start to finish. As the Panama Canal expansion project draws to completion in 2014, efficient intermodal movement of imports from the ports of Washington will become ever more vital to maintaining Washington's competitiveness.<sup>1</sup>

Second, our own state's manufacturers and farmers rely on the freight system to ship Washington-made products to local customers, to the big U.S. markets in California and on the East Coast, and worldwide. Washington's producers generate wealth and jobs in every region in the state.

Finally, Washington's distribution system is a fundamental local utility, since without it our citizens would have nothing to eat, nothing to wear, nothing to read, no spare parts, no fuel for their cars, and no heat for their homes. In other words, the economy of the region would no longer function.

The value and volume of goods moving in these freight systems is vast and growing.

### What is the Purpose of the Washington State Freight Mobility Plan Data Report?

This report updates the freight network description and statistics found in the 2008 WTP Freight Report. It is organized in three chapters that explain Washington's role as a gateway state, how freight transport supports Washington's regional economies, and the role of the local distribution system. It defines terms to create a common vocabulary, and summarizes data from state and federal freight studies relevant to Washington.

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<sup>1</sup> USDA-AMS. *Impact of Panama Canal Expansion on the U.S. Intermodal System.* (January 2010). Retrieved as of December 2011 from: <http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5082003> .

## **Global Gateways: International and National Trade Flows Through Washington**

Washington State is a global gateway to the Pacific Rim, Canada, and Alaska. The state's strategic location positions it as an important and growing gateway for trade access to Alaska; producers, suppliers and markets in Washington, Oregon, and California; and as a key transportation hub for Asian and Canadian trade. Washington's transportation system functions as an interconnected network of gateways and transportation corridors – inland barge, seaports, airports, borders, rail, and highway systems – that provide access to markets, create jobs and economic growth, and link business, government, and economic activities together locally, nationally, and internationally.

This chapter of the freight discussion focuses on markets and supply chains, including the gateways and corridors that support freight moving through Washington State. The economic impacts of this system are integrally related to exports produced in Washington and imports that become part of Washington's retail and wholesale distribution system.

This section is organized into three major parts:

- **The importance of trade in Washington's economy**
- **East-West trade**, including containers traveling from Asia to Chicago, agriculture from the Midwest to Asia, and military transport.
- **North-South trade**, including Canadian and North American Free Trade Agreement (NAFTA) related trade, freight along the West Coast, Alaskan freight movement.

### **The Importance of Trade in Washington's Economy**

International and national freight movements in Washington State create and support thousands of state jobs. The business and employment benefits derived from the state's freight system have been documented through numerous sources:

#### ***International Trade Increases the Number of State Jobs***

As the fifth largest exporting state in the country, behind only Texas, California, Florida and New York, a significant amount of Washington State jobs are linked to international trade. The \$52 billion in 2010 commodity exports activity supported 192,570 jobs. About 68% of these jobs are in the manufacturing sector and 31 percent is in agriculture.<sup>2</sup> A total of 8,480 companies exported from Washington in 2008. Ninety percent of exporting companies were small –to-medium sized enterprises, with fewer than 500 employees.<sup>3</sup>

#### ***Jobs Created by Local Seaports***

Economic impact studies prepared by Martin and Associates for the Port of Seattle shows 21,695 direct jobs generated by the port's seaport activities in 2007<sup>4</sup>; the Port of Tacoma's economic impact analysis reports 9,370 direct jobs in 2004<sup>5</sup>, a value that has held relatively constant in light of the economic recession of the

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<sup>2</sup> U.S. Chamber of Commerce. *Trade Supports Jobs: Washington*. Retrieved as of December 2011 from: <http://www.tradesupportsjobs.com/state/washington> .

<sup>3</sup> Washington Council on International Trade. *State of Washington: Trade Factsheet*. Retrieved as of April 2012 from: <http://wcit.org/wp-content/uploads/2011/08/WA-State2.pdf>.

<sup>4</sup> Martin Associates. *The 2007 Economic Impact of the Port of Seattle*. (February 2009). Prepared for the Port of Seattle.

<sup>5</sup> Martin Associates. *2004 Economic Impacts of the Port of Tacoma*. (July 2005). Prepared for the Port of Tacoma.

past several years<sup>6</sup>; the Port of Vancouver’s estimates about 2,300 direct jobs in 2010<sup>7</sup>; and other seaports in the state support a significant number of direct jobs, as well as indirect and induced jobs created by seaport activities.

### **Railroads and Interstate Trucking Employment**

The BNSF Railway Company employed 2,869 people<sup>8</sup> and the Union Pacific Railroad (UP) employed 319 in Washington in 2010<sup>9</sup>, generating in excess of \$222 million in combined wages.<sup>10</sup>

Interstate Trucking companies are also a source of employment in Washington. In 2009 there were 774 long-distance, freight trucking firms in the state, generating \$534.2 million in wages.<sup>11</sup>

### **Washington’s Role in International Trade**

International merchandise trade through our state is not just important for generating Washington jobs, it also supports the larger U.S. economy. Imports support U.S. manufacturers and provide goods to consumers. Agricultural exports support family farms throughout the Pacific Northwest and Midwest.

In 2010 over four percent of U.S. international trade entered or left the country through Washington State: 4.2 percent of total U.S. exports and 2.2 percent of total U.S. imports transited through Washington’s gateways.<sup>12</sup> As shown in Exhibit 1, Washington gateways rank high in the U.S. by value.

#### **Exhibit 1: Washington’s Rank in the Top U.S. International Freight Gateways in 2009**

By Value in Billion \$

<b>Gateway</b>	<b>Mode</b>	<b>Rank</b>	<b>Imports</b>	<b>Exports</b>	<b>Total</b>
Los Angeles, CA	Waterborne	1	124.8	26.5	151.3
Buffalo-Niagra Falls, NY	Land	10	27.8	33.2	61
Seattle, WA	Waterborne	22	24.8	8.1	32.9
Tacoma, WA	Waterborne	27	20.9	5.8	26.7
Blaine, WA	Land	41	5.5	9.1	14.6

United States Department of Transportation, Bureau of Transportation Statistics. *National Transportation Statistics, 2011*. “Table 1-51” Retrieved as of December 2011 from:

[http://www.bts.gov/publications/national\\_transportation\\_statistics/html/table\\_01\\_51.html](http://www.bts.gov/publications/national_transportation_statistics/html/table_01_51.html)

<sup>6</sup> Anderson, Megan, “Port of Tacoma Employment Numbers,” e-mail message, August 11, 2011.

<sup>7</sup> Brooks, Katy, “POV Jobs Impact Inquiry,” e-mail message, August 8, 2011.

<sup>8</sup> BNSF. Washington: A Crucial Gateway for International Trade. (May 2011).

<sup>9</sup> Nelson, Brock, “Washington Employee Numbers,” e-mail message, August 9, 2011.

<sup>10</sup> Union Pacific, *Union Pacific in Washington 2010 Fast Facts*, Retrieved as of August 2011 from:

[http://www.uprr.com/aboutup/usguide/attachments/state\\_factsheets/wa.pdf](http://www.uprr.com/aboutup/usguide/attachments/state_factsheets/wa.pdf)

<sup>11</sup> U.S. Census Bureau. *2009 County Business Patterns (NAICS): Washington State by Industry Code*. Retrieved as of 2011 from: <http://censtats.census.gov/cgi-bin/cbpnaic/cbpdet.pl>. Industry code 48412, “General freight trucking, long-distance.”

<sup>12</sup> Includes aircraft exported on own power, which does not use a transportation gateway. Excluding these commodities (\$23.2 billion), Washington’s share U.S. exports in 2010 was 2.3 percent.

United States Census Bureau, Foreign Trade Division. *U.S. International Trade in Goods and Services - Annual Revision for 2010. Exhibit 4. U.S. Trade in Goods*. (June 9, 2011). Retrieved as of October 2011 from

<http://www.bea.gov/newsreleases/international/trade/2011/pdf/trad1311.pdf>

**Washington and Major U.S. Trading Partners**

In 2011, \$111.7 billion in U.S. international trade entered or exited through Washington—\$64.6 billion in exports, of which \$27.1 billion was related to aircraft<sup>13</sup>, and \$47.1 billion in imports<sup>14</sup>. As shown in Exhibit 2, important U.S. trading partners are linked to the U.S. economy through Washington. Canada, China, and Japan were the top three international trading partners for goods moving through Washington in 2011; trade with these three countries together constitutes about 40 percent of exports through Washington and over 61 percent of imports to Washington. Other key trade partners include South Korea, Taiwan, the United Kingdom, and the United Arab Emirates which together comprise an additional 13.8 percent of international trade value.

**Exhibit 2: Value of International Trade of Goods by Country through Washington**  
2011 by Value

Country	Billion \$	Share of WA Total Trade	Share of U.S. trade with Country
Canada	22,831	20.4%	16.0%
China	19,939	17.9%	13.5%
Japan	11,945	10.7%	5.2%
Korea, South	5,198	4.7%	2.7%
Taiwan	4,045	3.6%	1.8%
United Kingdom	3,266	2.9%	2.9%
United Arab Emirates	2,880	2.6%	0.5%
Germany	2,225	2.0%	4.0%
France	2,210	2.0%	1.8%
Australia	1,991	1.8%	1.0%
Ireland	1,901	1.7%	1.3%
Mexico	1,872	1.7%	12.3%
Netherlands	1,854	1.7%	1.8%
Indonesia	1,793	1.6%	0.7%
Other	27,726	24.8%	34.6%
<b>Total</b>	<b>111,676</b>	<b>100%</b>	<b>100%</b>

Total Value of U.S. trade (Seasonally Adjusted) in 2011 = \$3,688.01 billion (Exports = \$1,480.65; Imports = \$2,207.36). Retrieved as of May 2012 from: <http://www.census.gov/foreign-trade/statistics/historical/gands.pdf>

**Trade Continues to Grow – Worldwide and in Washington**

Since 1950 world trade has grown faster than the average annual world Gross Domestic Product (GDP)—in the last 30 years, it has generally grown at an even faster pace. As shown in Exhibit 3, the value of total U.S. international trade more than tripled from 1980 to the peak year of 2008, while the

<sup>13</sup> U.S. Census Bureau, Foreign Trade Division. *Total U.S. Exports (Origin of Movement) via Washington, Top 25 Countries Based on 2010 Dollar Value*. Retrieved as of 2011 from: <http://www.census.gov/foreign-trade/statistics/state/data/wa.html#ctry>

<sup>14</sup> U.S. Census Bureau, Foreign Trade Division. *Total U.S. Imports (Origin of Movement) via Washington, Top 25 Countries Based on 2010 Dollar Value*. Retrieved as of 2011 from: <http://www.census.gov/foreign-trade/statistics/state/data/imports/wa.html>

value of total international trade for Washington State doubled. Despite 2009 drop-offs to near 2005 levels, Washington State's international trade value increased 14% from 2009 to 2010.

By value, Asia is the largest importer and exporter of merchandise to and from the U.S., comprising almost 29 percent of U.S. exports and over 38 percent of U.S. imports in 2010.<sup>15</sup> In contrast, 30 years ago Asia's share of U.S. imports and exports constituted roughly 20 and 17 percent of total U.S. trade respectively.

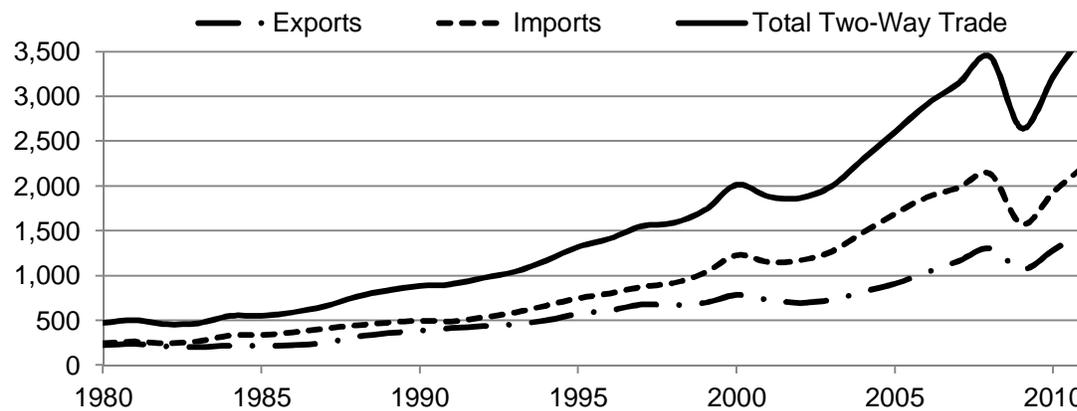
Continued trade growth with China is an important factor for future trade growth in the U.S. and Washington State. China has increased its rank among trading partners for the US from 24th in 1980 to the second largest by 2006, remaining there through 2010. In 2010 over 20 percent of U.S. trade with China moved through Washington State, compared with 10 percent in 1994.<sup>16</sup>

**Exhibit 3: International Trade Trends for the U.S.**

Value 1980 to 2011

International Trade Entering and Leaving the United States

Nominal Dollars in Billion \$ (Nominal Values are those observed in the market at that period of time)



Real Dollars in Billion \$ (Real Values are those that account for changes in purchasing power)

<sup>15</sup> U.S. Department of Commerce, Bureau of Economic Analysis. *U.S. International Transactions Accounts Data, Table 2: U.S. Trade in Goods* (September 15, 2011 Release date). Retrieved as of 2011 from:

[http://www.bea.gov/iTable/index\\_ita.cfm](http://www.bea.gov/iTable/index_ita.cfm)

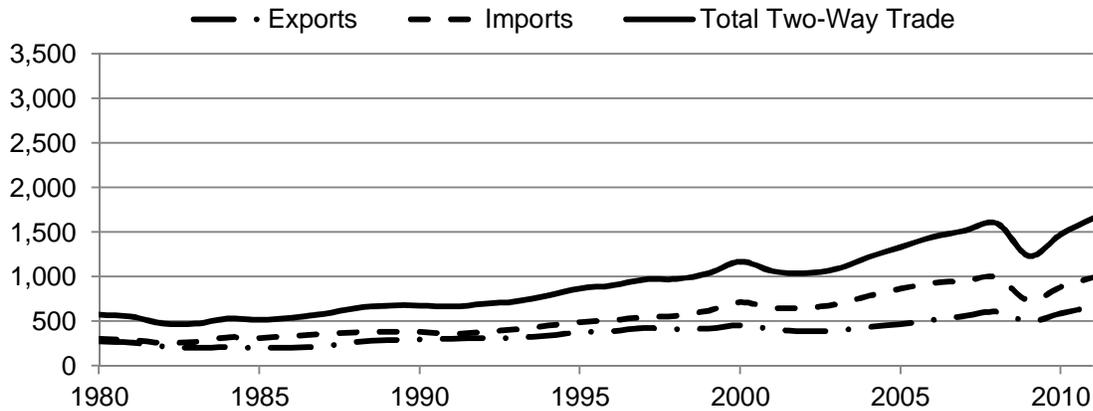
<sup>16</sup> Washington State Office of Financial Management. *2009 Washington State Data Book, 2005 State Data Book, and State of Washington 1995 Data Book*. U.S. Department of Commerce, *International Trade Administration*:

<http://www.ofm.wa.gov/databook/default.asp>

U.S. Census Bureau, Foreign Trade Division. *Total U.S. Imports/Exports (Origin of Movement) via Washington, Top 25 Countries Based on 2010 Dollar Value*. Retrieved as of 2011 from:

<http://www.census.gov/foreign-trade/statistics/state/data/imports/wa.html>

<http://www.census.gov/foreign-trade/statistics/state/data/wa.html#ctry>



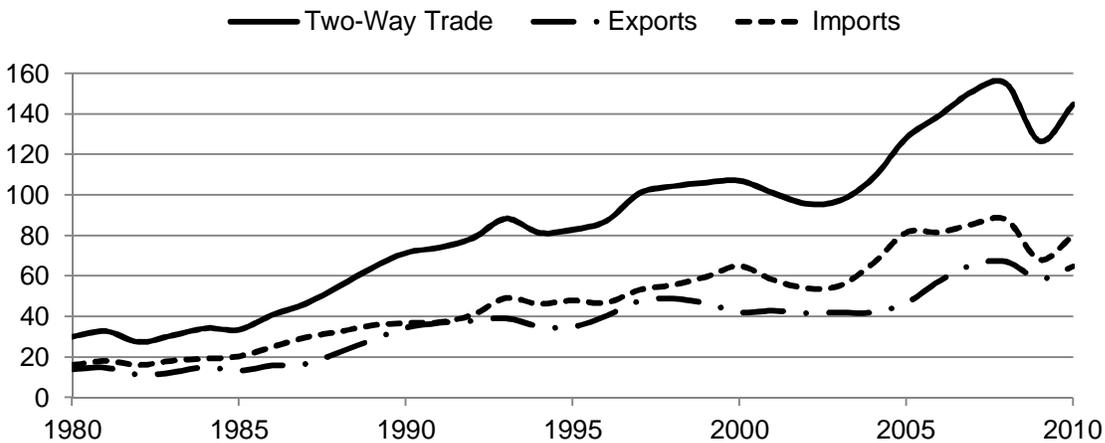
U.S. Census Bureau, Foreign Trade Division. *U.S. Trade in Goods and Services-Balance of Payments Basis*. Retrieved as of May 2012 from: <http://www.census.gov/foreign-trade/statistics/historical/gands.pdf>.

#### Exhibit 4: International Trade Trends for Washington State

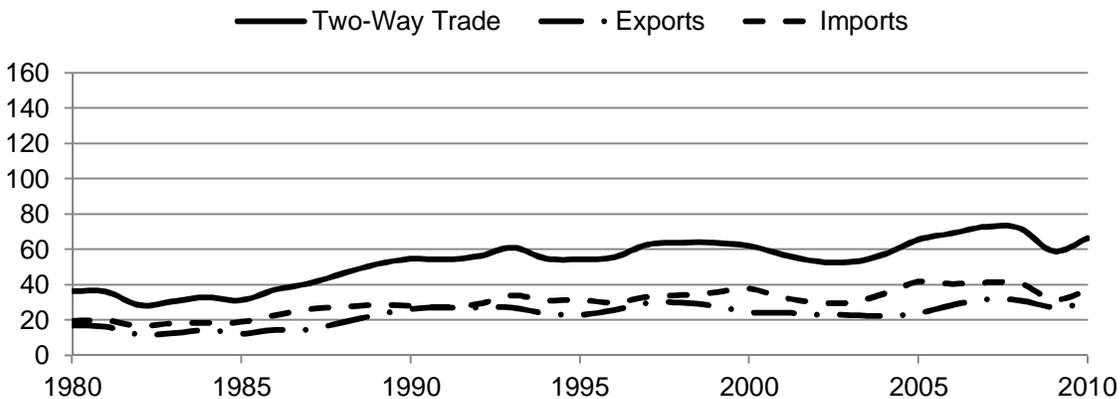
Value 1980 to 2010

International trade Entering and Leaving Washington State

Nominal Dollars in Billion \$



Real Dollars in Billion \$



1980 -2002: Washington State Office of Financial Management. *Washington State Data Book Versions 1995, 2003, 2005*. As cited and sourced by: <http://www.wsdot.wa.gov/planning/wtp/datalibrary/freight/GrowingVolume.htm> Retrieved December 2011.

2003-2010: WISERTrade: Port HS Database (<http://www.wisertrade.org>), as generated by Washington State Department of Commerce, December 2011.  
Real values are adjusted for inflation based on U.S. Department of Labor Bureau of Labor Statistics CPI. 1982-1984 = 100.

## **East-West Trade: Washington is a Gateway for Asian Trade to and from the Midwest and the East Coast**

Ocean freight vessels that transport goods to and from the West Coast are the most common means of moving U.S. trade with the Pacific Rim countries. Seventy-five percent of Asian exports destined for the U.S. enter through West Coast ports.<sup>17</sup>

### ***Washington's Seaports Are Global Gateways for Containerized Asian Imports***

A large majority of waterborne international trade moved through the Ports of Seattle and Tacoma. International trade moving through these two seaports exceeded \$78 billion in 2011. This made up over 89 percent of the value of international imports entering through Washington, and almost 63 percent of waterborne international exports.<sup>18</sup> Using weight as a distinguishing measure, in 2009 Washington State ranked as the fourth largest mover of international waterborne trade, handling 65 million short tons or almost 5 percent of the U.S. total. In 2009, Washington handled nearly 46 million short tons of foreign bound shipments, or more than 9 percent of the U.S. total. Similarly, Washington received more than 19 million short tons of inbound foreign shipment, ranking it ninth with just more than 2 percent of the U.S. total.<sup>19</sup>

As shown in Exhibit 5, crude petroleum was by far the largest volume waterborne commodity imported into Washington in 2010, and the majority originated from Alaska. Manufactured goods were the second largest commodities entering Washington State by water, most arriving in containers that originated from the Pacific Rim.

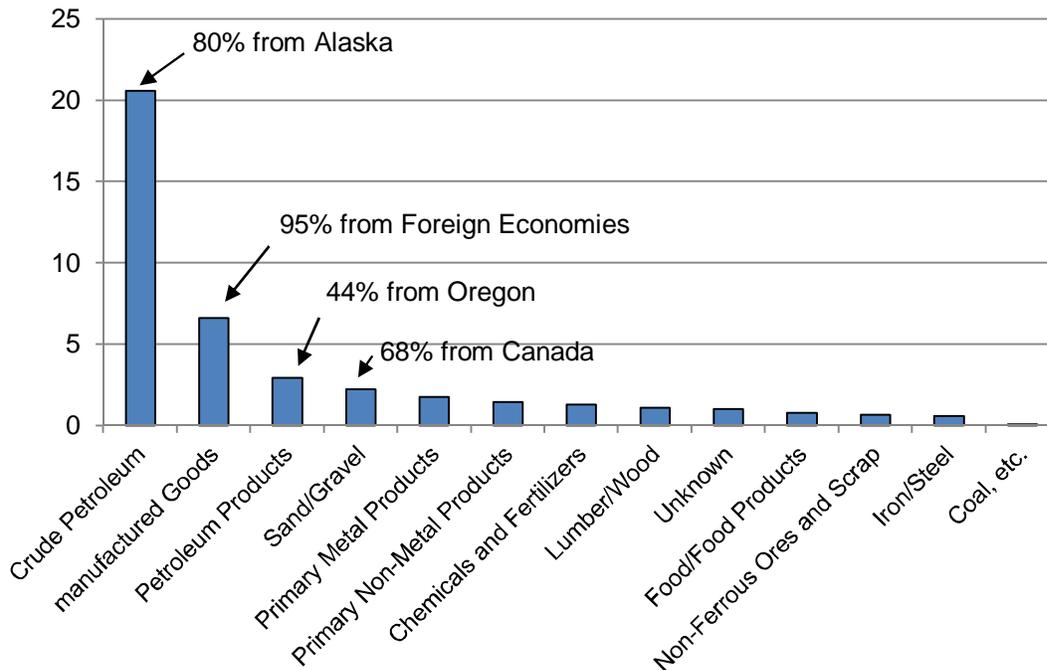
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<sup>17</sup> USDA-AMS. *Impact of Panama Canal Expansion on the U.S. Intermodal System.*(January 2010). Retrieved as of December 2011 from: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5082003> .

<sup>18</sup> Port of Seattle. *2011 Foreign Waterborne Trade Report*. Retrieved as of May 2012 from: [http://www.portseattle.org/About/Publications/Statistics/Seaport/Documents/Summary\\_Foreign\\_Waterborne\\_Trade.pdf](http://www.portseattle.org/About/Publications/Statistics/Seaport/Documents/Summary_Foreign_Waterborne_Trade.pdf) .

<sup>19</sup> BTS, *State Transportation Statistics 2010*, Table 3-5. Retrieved as of 2011 from: [http://www.bts.gov/publications/state\\_transportation\\_statistics/state\\_transportation\\_statistics\\_2010/index.html](http://www.bts.gov/publications/state_transportation_statistics/state_transportation_statistics_2010/index.html)

**Exhibit 5: Goods Entering Washington State by Water\***  
2010, Million Tons



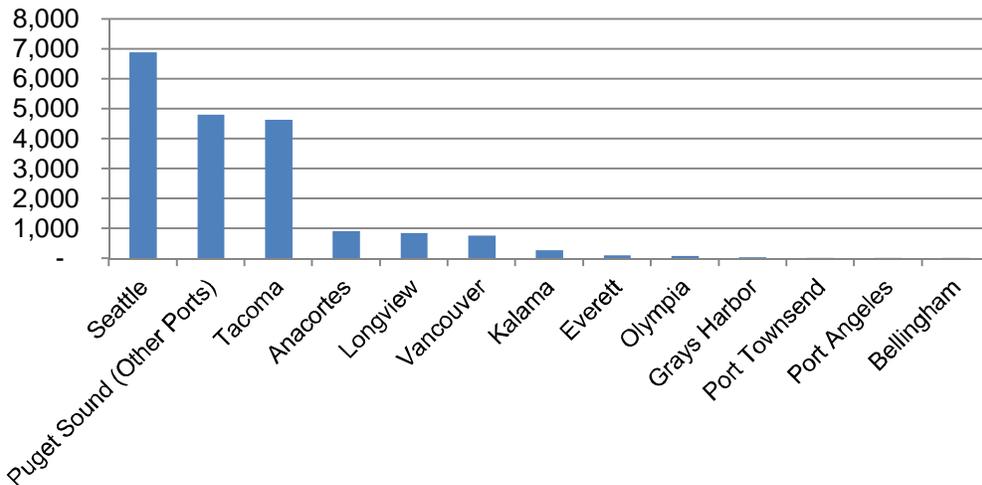
\* Excludes goods originating and terminating in Washington.  
U.S. Army Corps of Engineers Navigation Data Center - Waterborne Commerce Statistics Center. 2010 Commodity Movements from the Public Domain Database. State to State by Destination and Origin. Retrieved as of May 2012 from: [www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm](http://www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm)

**Seattle and Tacoma Are Washington’s Major Container Ports**

As shown in Exhibit 6, the Ports of Seattle and Tacoma handle the majority of Washington’s international waterborne imports along with other combined ports along the Puget Sound. Both the Port of Seattle and the Port of Tacoma experienced declining total international container movements between 2006 and 2009. The trend at the Port of Tacoma reversed in 2011 and its international container traffic increased 2.3% compared to 2010 (Exhibit 7). The international container traffic for Port of Seattle increased 42% from 2009 to 2010, and then experienced a slight decrease (6%) in 2011.

**Exhibit 6: International Imports Entering Washington’s Seaports.**

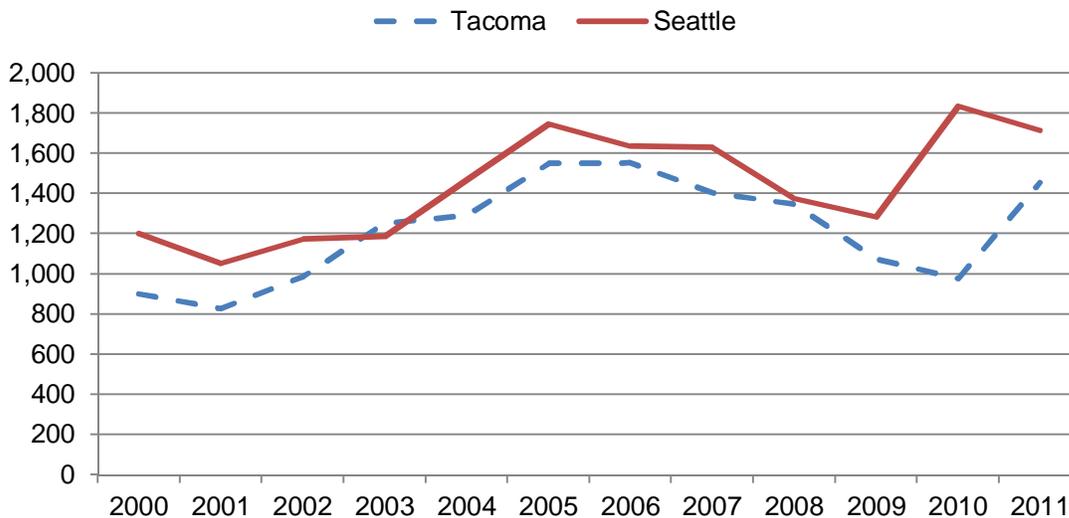
2009, Thousands of Short Tons



U.S. Army Corps of Engineers Navigation Data Center - Waterborne Commerce Statistics Center. 2009 *Waterborne Commerce of the United States Waterways and Harbors*. Retrieved as of August 2011 from: [http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part4\\_Ports\\_tonsbyTT\\_Dr\\_Yr\\_commCY20\\_09-2005.HTM](http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part4_Ports_tonsbyTT_Dr_Yr_commCY20_09-2005.HTM)

**Exhibit 7: International Movement of Containerized Cargo at the Ports of Seattle and Tacoma 2000-2010.**

Thousands of TEUs



Port of Seattle. *About the Port. Containerized Cargo in TEUs*. Retrieved as of December 2011 from:

<http://www.portseattle.org/About/Publications/Statistics/Seaport/Pages/10-Year-History.aspx>

Port of Tacoma. *About the Port. Monthly Cargo Statistics*. Retrieved as of December 2011 from:

<http://www.portoftacoma.com/Page.aspx?nid=155>

In 2010 Washington’s two largest seaports, the Port of Seattle and the Port of Tacoma, ranked as the third largest container port complex behind Los Angeles/Long Beach and New York/New Jersey. The two ports combined handled more than 2.2 million twenty-foot equivalent units (TEUs), which is

equal to 7.7 percent of all U.S. containerized exports and 8.3 percent of U.S. containerized imports.<sup>20</sup> By value, primary imports to the Port of Seattle are electrical and general machinery. Reflecting the Puget Sound's status as an import gateway, the value of imports exceeded exports at the Ports of Seattle and Tacoma by a ratio of over two to one: \$64.6 billion to \$32.6 billion in 2011.<sup>21</sup>

### **Washington's Two Major Ports Are Investing**

As the globalized economy continues to evolve and develop, so to must Washington's ports. The Port of Seattle has recently obtained six new cranes that will allow it to handle the largest container ships in the world. The port is also modernizing and replacing grain facility equipment and controls that will allow it to maximize operational efficiency and continue grain terminal operation.<sup>22</sup>

Meanwhile, the Port of Tacoma is similarly undergoing improvements and expansion to continue to support the changing needs of international trade. They have added 600 feet to the terminals existing 2,000-foot berth that will, like Seattle, allow it to serve the world's largest of container ships.<sup>23</sup>

### **Washington's Rail Corridors Move Containers to U.S. Markets**

Railroads play a major part in the movement of containers, automobiles, and merchandise from Washington's seaports to final markets. In 2007 roughly 40 percent of the state's rail traffic was related to activity at the ports.<sup>24</sup>

In 2010 the Washington state rail system carried 115.8 million tons of freight; 58.3 million tons arrived in the state from other states and Canada, while 18.5 million tons shipped from the Washington to other states and Canada. Over 39.0 million tons moved within the state's borders or through the state without loading and unloading. Farm products are the primary commodity and made up 35% of the total rail freight tonnage in Washington.<sup>25</sup>

In 2007, 72 percent of the freight shipped and received via Lower Columbia ports in Washington was moved by rail, and 34 percent via Puget Sound ports by rail. Rail accounted for approximately 40 percent of total Puget Sound container tonnage. Rail tonnage is dominated by corn, soybeans and sorghum shipped in from the Midwest, but is also critical for containerized cargo and automobiles.<sup>26</sup>

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<sup>20</sup> U.S. Department of Transportation Maritime Administration (MARAD). Official U.S. Waterborne Transportation Statistics: *U.S. Imports by U.S. Customs District and Port – 2010*.

<sup>21</sup> Port of Seattle. *2011 Foreign Waterborne Trade Report*. Retrieved as of May 2012 from: [http://www.portseattle.org/About/Publications/Statistics/Seaport/Documents/Summary\\_Foreign\\_Waterborne\\_Trade.pdf](http://www.portseattle.org/About/Publications/Statistics/Seaport/Documents/Summary_Foreign_Waterborne_Trade.pdf)

<sup>22</sup> Port of Seattle. *News Room*. Retrieved as of December 2011 from: <http://www.portseattle.org/Newsroom/News-Releases/Pages/default.aspx>

<sup>23</sup> Port of Tacoma. *News and Information*. Retrieved as of December 2011 from: <http://www.portoftacoma.com/Page.aspx?nid=41>

<sup>24</sup> BST Associates. *2009 Marine Cargo Forecast: Technical Report Final*. (March 23, 2009). Prepared for the Washington Public Ports Association and the Washington State Department of Transportation. Retrieved as of August 2011 from:

<http://www.wsdot.wa.gov/NR/rdonlyres/575F0BFF-16FF-4699-9005-32766227B3BE/0/MCF2009FinalReport3232009.pdf>

<sup>25</sup> WSDOT State Rail and Marine Office. 2010 Surface Transportation Board Waybill Data Analysis.

<sup>26</sup> BST Associates. *2009 Marine Cargo Forecast: Technical Report Final*. (March 23, 2009). Prepared for the Washington Public Ports Association and the Washington State Department of Transportation. Retrieved as of August 2011 from:

<http://www.wsdot.wa.gov/NR/rdonlyres/575F0BFF-16FF-4699-9005-32766227B3BE/0/MCF2009FinalReport3232009.pdf>

**Operations of Washington State’s Mainline Railroads**

The BNSF Railway Company owns and operates three east-west rail corridors in Washington: Stevens Pass, Stampede Pass, and the Columbia Gorge. The Union Pacific Railroad (UP) also owns and operates an east-west rail corridor just south of the Washington-Oregon border. Exhibit 8 displays the current and projected operations of mainlines in Washington.

Both BNSF and UP also operate on north-south corridors in western Washington. Capacity on these lines is important because trains must move on them to get from seaports or rail yards to the east-west lines. Additionally, these lines are used to move commuters and Amtrak trains in the greater Puget Sound region. BNSF has worked closely with the state to increase capacity of its north-south and east-west routes. Since 2008, 38 new or expanded facilities have undergone construction in Washington, using more than \$226 million in BNSF investments.<sup>27</sup>

**Exhibit 8: Current and Projected Number of Trains on Rail Line Segments**  
(Based on Peak Day Train Volumes and Assuming Operation of 8,000-ft Trains)

Line Segment	Baseline Year	Moderate Growth Scenario				High Growth Scenario			
	2011	2020		2030		2020		2030	
	Average	Average	Peak	Average	Peak	Average	Peak	Average	Peak
Pasco, WA to Wishram, WA (BNSF)	45	51	56	61	67	57	62	72	80
Wishram, WA to Vancouver, WA (BNSF)	41	46	51	56	61	52	57	67	74
Pasco, WA to Spokane, WA (BNSF)	45	59	65	73	80	71	78	93	102
Spokane, WA to Sand Point, ID (BNSF)	59	75	83	92	101	87	96	112	124
Vancouver, WA to Kalama/Longview, WA (Joint Line)	63	74	81	98	108	83	92	112	123
Kalama/Longview, WA to Tacoma, WA (Joint Line)	57	71	78	94	103	79	87	105	115
Tacoma, WA to Auburn, WA (Joint Line)	81	93	102	114	125	99	108	122	134
Auburn, WA to Seattle, WA (Joint Line)	81	94	103	119	131	102	112	131	144
Seattle, WA to Everett, WA (BNSF)	51	63	69	75	83	70	77	87	96
Everett, WA to Blaine, WA (BNSF)	17	26	28	35	38	34	37	47	51
Everett, WA to Spokane, WA via Stevens Pass (BNSF)	18	21	23	24	26	21	23	24	26
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)	6	14	16	19	21	20	22	27	30

Note: Train numbers represent average daily volume. Short term peak volumes may exceed daily average by 10%. For all non-unit trains, growth is absorbed by existing trains before adding additional trains. Train volumes include locals, switchers and non-revenue movements.

BTS Associates. Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment. Prepared for Pacific Northwest Rail Coalition. Retrieved as of May 2012 from <http://extra.bellinghamherald.com/pdf/news/portfreightstudy.pdf>

<sup>27</sup> BNSF. Washington: A Crucial Gateway for International Trade. (May 2011).

## Highways Are Also Important East-West Freight Corridors

As shown in Exhibit 9, there is also international trade moving on highway corridors in Washington.

### Exhibit 9: Major Flows by Truck To, From, and Within Washington: 2007



Note: Major flows include both domestic and international freight moving by truck on highway segments with at least 25 FAF (Freight Analysis Framework) trucks per day and between places typically more than fifty miles apart.

U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations. *Freight Analysis Framework, version 3.1.2, 2011*. Retrieved as of November 2011 from: [http://ops.fhwa.dot.gov/freight/freight\\_analysis/state\\_info/washington/truckflow.htm](http://ops.fhwa.dot.gov/freight/freight_analysis/state_info/washington/truckflow.htm) .

I-90 and Snoqualmie Pass are the main highway routes for east-west commerce in Washington. This route connects eastern Washington agriculture business and other industries with urban markets in northwest Washington and Puget Sound, along with global markets via the Port of Seattle and Tacoma. I-90 Snoqualmie Pass moved 6,600 daily trucks and 36.6 million tons of freight annually in 2010<sup>28</sup>. Snoqualmie Pass closure due to severe weather hinders the through movement of freight and east-west commerce and has big economic impacts. Eighty-nine hours of I-90 closure due to winter weather in January – February 2008 resulted in a total of \$27.89 million freight-related economic losses<sup>29</sup>.

<sup>28</sup> WSDOT. Washington State Freight and Goods Transportation System 2011 Update.

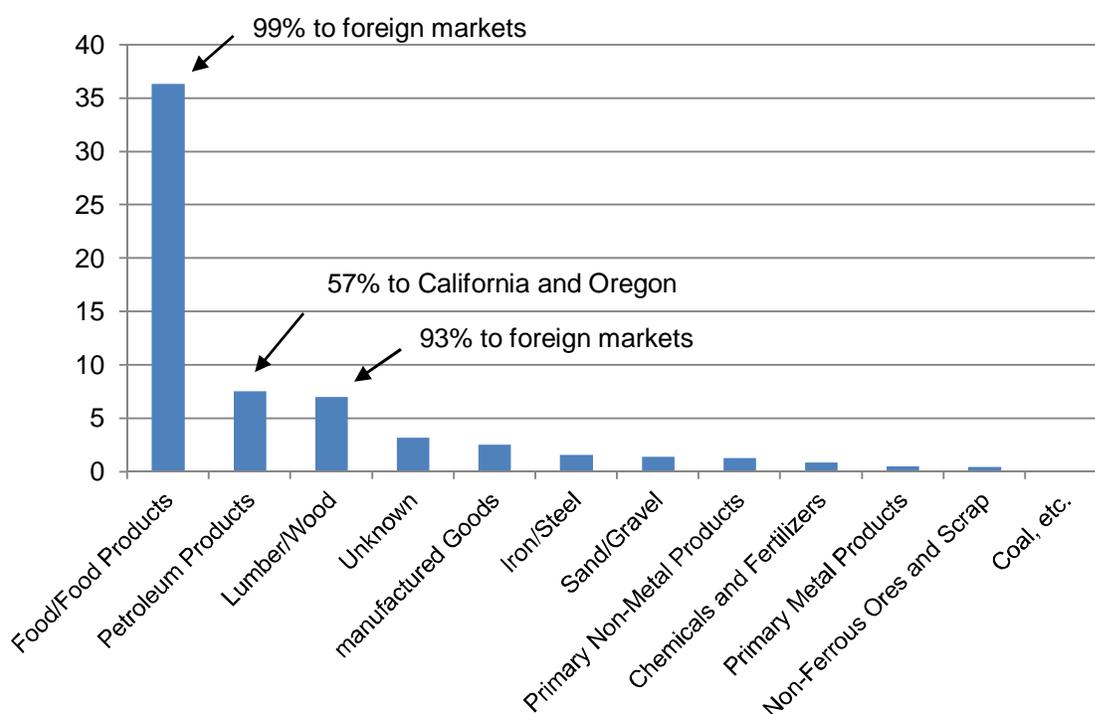
<sup>29</sup> WSDOT. Storm-related Closures of I-5 and I-90: Freight Transportation Economic Impact Assessment Report, Winter 2007-2008.

## Agricultural Exports: Washington Moves American Products to the Pacific Rim

Non-containerized bulk products are also exported to the Pacific Rim through Washington’s Seaports. In 2007, 88 percent of non-containerized goods leaving the Pacific Northwest’s seaports were bound for Asian markets; 30 percent to China alone.<sup>30</sup> Pacific Northwest grain and oilseed exports are expected to increase from 20.1 million metric tons in 2010 to 39.1 million metric tons in 2030 under a moderate growth forecast, and expected to reach 53.3 million metric tons in 2030 under the high growth forecast<sup>31</sup>.

Exhibit 10 shows that, by weight, food and food products, primarily grain, were the most significant commodities exported through Washington’s seaports in 2010. Other important international exports were lumber and wood products, as well as petroleum products heading down the Pacific coast to Oregon and California.

**Exhibit 10: Food and Food Products Leave Washington State by Water\***  
2010, Million Tons



\*Excludes goods originating and terminating in Washington.  
U.S. Army Corps of Engineers Navigation Data Center - Waterborne Commerce Statistics Center. 2010 Commodity Movements from the Public Domain Database. State to State by Destination and Origin. Retrieved as of May 2012 from: [www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm](http://www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm)

<sup>30</sup> BST Associates. 2009 Marine Cargo Forecast: Technical Report Final. (March 23, 2009). Prepared for the Washington Public Ports Association and the Washington State Department of Transportation. Retrieved as of August 2011 from: <http://www.wsdot.wa.gov/NR/rdonlyres/575F0BFF-16FF-4699-9005-32766227B3BE/0/MCF2009FinalReport3232009.pdf>

<sup>31</sup> BST Associates. Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment: Final Report. (December 2011). Prepared for Pacific Northwest Rail Coalition. Retrieved as of May 2012 from: <http://extra.bellinghamherald.com/pdf/news/portfreightstudy.pdf>

## Washington's Columbia River Ports Are Gateways for Agricultural Exports

Columbia River seaports, especially the Ports of Vancouver, Kalama, and Longview, play major roles in the movement of exported agricultural products. These ports face competition from the Mississippi River and Gulf Coast ports, although they are less exposed than their Puget Sound counterparts because of the volume of grain that is shipped to these ports by barge.<sup>32</sup> As shown in Exhibit 11, these ports rank relatively high in international waterborne exports, particularly by weight.

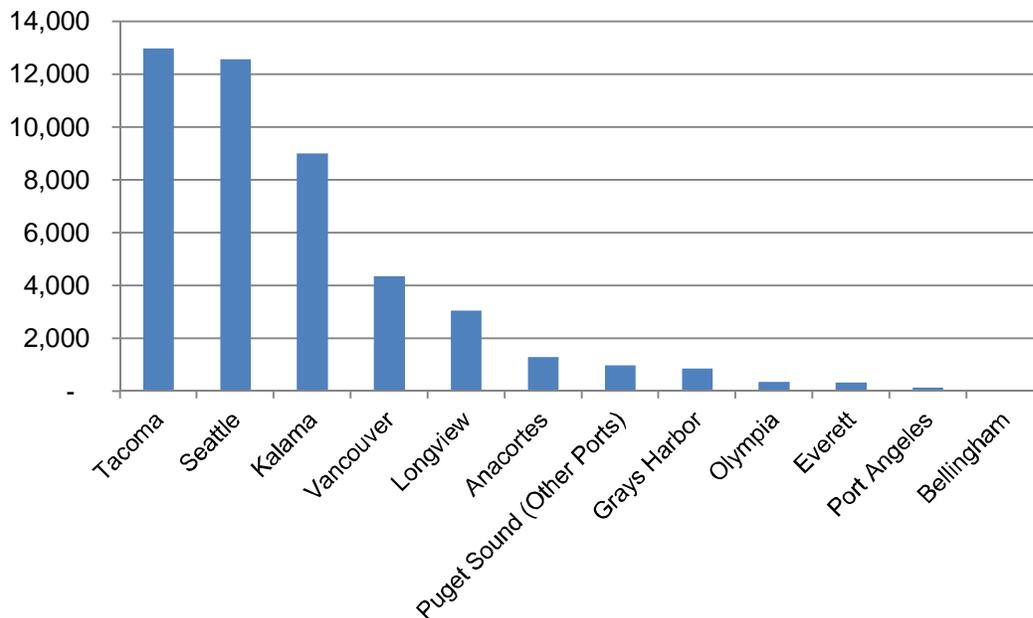
### Columbia River Channel Improvements Project

In 2010, the culmination of a 20-year endeavor was completed in a collaborative effort between the U.S. Army Corps of Engineers and six Oregon and Washington Ports. The improvement project deepens the 103 miles of the Columbia River navigation channel extending from near Portland and Vancouver to the mouth of the river. The deepening was vital to the export abilities of the state as the now 43 foot deep channel can accommodate the larger, more fuel-efficient ships that transport most bulk cargo and containers.

Columbia River Channel Coalition. *Columbia River Channel Improvements Project*. Retrieved as of December 2011 from: <http://www.columbiariverchannel.com/>

### Exhibit 11: Foreign Shipments Leaving Washington's Seaports in 2009

Thousands of Short Tons



U.S. Army Corps of Engineers Navigation Data Center - Waterborne Commerce Statistics Center. *2009 Waterborne Commerce of the United States Waterways and Harbors*. Retrieved as of August 2011 from: [http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part4\\_Ports\\_tonsbyTT\\_Dr\\_Yr\\_commCY2009-2005.HTM](http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part4_Ports_tonsbyTT_Dr_Yr_commCY2009-2005.HTM)

<sup>32</sup> BST Associates. *2009 Marine Cargo Forecast: Technical Report Final*. (March 23, 2009). Prepared for the Washington Public Ports Association and the Washington State Department of Transportation. Retrieved as of August 2011 from: <http://www.wsdot.wa.gov/NR/rdonlyres/575F0BFF-16FF-4699-9005-32766227B3BE/0/MCF2009FinalReport3232009.pdf>

## Port of Vancouver

The Port of Vancouver has four-mile long waterfront and five marine terminals that provide 13 shipping berths. In 2011 it received 457 vessel calls and handled 5.6 million tons of cargo<sup>33</sup>. The port handled much more exports than imports, with 85 percent of its freight tonnage as exports. Wheat, scrap steel, bulk minerals and pulp are among its top export commodities, while steel, wind turbines, pulp, liquid bulk and automobiles are its top import commodities. Japan, Australia, China, Europe, and South Korea are Port of Vancouver's top five trading partners<sup>34</sup>.

The Port of Vancouver's Terminal Two serves as its grain elevator wharf, and is leased by United Grain Corporation. This grain terminal is the largest wheat exporting elevator on the U.S. West Coast and among the most efficient handlers of grain in the world. It exported a total of 3.6 million metric tons of grain products in 2011. The facility can unload 40,000 bushels per hour and load at a rate of 80,000 bushels an hour. The elevator has a storage capacity of 5 million bushels and is continually being expanded and improved.<sup>35</sup>

The Port of Vancouver is a hub of industrial jobs in Southwest Washington. The port activities support 2,300 direct jobs, and nearly 17,000 jobs in the community. The Port has more than 50 industrial and marine tenants, and more than two million square feet in warehouses for industrial and marine activities at the port. Currently nearly 108 acres are being prepared for development at the port's Centennial Industrial Park<sup>34</sup>.

## Port of Kalama

The seven mile long Port of Kalama handles more bulk exports (e.g. grain, potash, and minerals) than any other port in the state, with 8.7 million metric tons of bulk cargo exported in 2011. This volume ranks it second only to Portland in the region. Corn, wheat and soybeans are the major export commodities of the port and shipped to Pacific Rim counties- mostly China, Japan, Korea and Taiwan. The port receives over 90,000 rail cars and 250 vessel calls each year.

To meet rising demands and to maintain competitiveness, the Port of Kalama has made substantial investments, \$36 million, in infrastructure improvements and expansion that is expected to increase Kalama Export facility throughput by 25 percent. Other improvements in recent years include additional rail, along with a hopper pit and dock improvements. This year, they plan to add a new dock and handling facilities.<sup>36</sup>

## Port of Longview

In 2010, Longview experienced its third consecutive record setting revenue year, grossing more than \$27.7 million in operating revenue. During 2010, the port handled 154 vessel calls, and 2.3 million metric tons of cargo, a 55 percent increase over 2009. It is largely due to a 70 percent increase in exports, particularly export logs and agricultural exports bound for Asia<sup>37</sup>. The Port of Longview has seven marine berths, of which it operates five. The remaining two berths are operated by Kinder Morgan and Export

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<sup>33</sup> <http://www.portvanusa.com/sites/default/files/tonnage-End%20of%20Year%202011.pdf>

<sup>34</sup> Port of Vancouver. Port 2012 Quick Facts. Retrieved as of May 2012 from:

[http://www.portvanusa.com/sites/default/files/tinymce/files/PORT-0165%202012%20Facts%20Book\\_FPO.pdf](http://www.portvanusa.com/sites/default/files/tinymce/files/PORT-0165%202012%20Facts%20Book_FPO.pdf)

<sup>35</sup> Port of Vancouver. Retrieved as of November 2011 from: <http://www.portvanusa.com/marine-terminals/dry-bulk>

<sup>36</sup> Port of Kalama. *Trade Winds, Winter 2011*. Retrieved as of November 2011 from:

[http://www.portofkalama.com/news\\_and\\_notices](http://www.portofkalama.com/news_and_notices)

Port of Kalama. *Fast Facts 2010*. Retrieved as of November 2011 from:

[http://www.portofkalama.com/news\\_and\\_notices](http://www.portofkalama.com/news_and_notices)

<sup>37</sup> Port of Longview. 2010 Annual Report. Retrieved as of May 2012.

<http://www.portoflongview.com/Portals/0/Documents/Document-Library/Financial/10%20Annual%20Report>.

Grain Terminal (EGT). Dry bulk is the leading cargo, primarily chemicals, minerals, and agricultural products. Three berths are used for exports of agricultural and mineral products only, while three others handle imports and exports of project cargo and dry bulk commodities, steel and logs. The remaining import berth primarily handles salt<sup>38</sup>.

EGT invested more than \$200 million in Port of Longview to build a grain terminal and completed the construction in fall 2011. The terminal is served by BNSF Railway and UP Railroad mainlines with a dedicated spur to the Port, and can accommodate six 110-car shuttle trains at any time. The export facility handles corn, wheat, soybeans, and DDGs (Dried Distillers Grains) through both barge and rail, and is able to unload 120,000 bushels of grain per hour. The terminal will generate significant benefits for the Port community. It is expected to more than double the number of vessels calling on the Port of Longview, generate \$5 to \$8 million in annual revenue for the port, and offer American farmers greater access to global markets, including Japan, South Korea, China, and Taiwan<sup>39</sup>.

### **Port of Grays Harbor**

The Port of Grays Harbor continues to show signs of growth and diversification. In 2010, the port's cargo exports increased 85 percent increase over 2009. New contracts in 2010 began to increase the automotive exports handled by the Port of Grays Harbor; in 2010 they moved one third of the west coast's auto exports in conjunction with Pasha Automotive Services.

Dry bulk exports topped one million tons in 2010. Additionally, construction of dry bulk storage silos will increase the capacity for future export volumes. Recent rail investments have also been approved to accommodate the growing automobile and grain export operations of the port..<sup>40</sup>

### **Rail and Barge Bring Agricultural Products to the Lower Columbia Ports**

Agricultural products such as wheat, corn, and soybeans, from the Midwest and eastern Washington, travel by barge and rail to these Lower Columbia seaports. The majority of commodities destined for Washington State, based on railroad waybills, are agricultural products. These commodities by tonnage are shown in Exhibit 12.

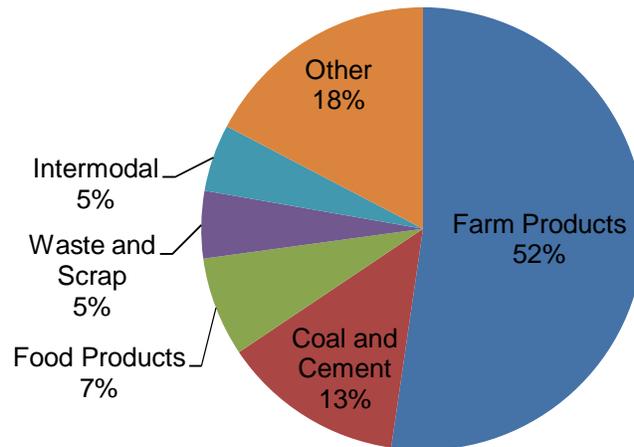
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<sup>38</sup> HDR. *Port Master Plan Report. HDR Project Number 144429.* June 14, 2011.

<sup>39</sup> EGT. <http://www.egtgrain.com/facility/>

<sup>40</sup> Port of Grays Harbor. *Grays Harbor to Increase rail Capacity on Washington's Coast.* Retrieved as of November 2011 from: <http://www.portofgraysharbor.com/news/Increase-Rail-Capacity.php>

## Exhibit 12: Farm Products Comprise the Majority of Goods Bound for Washington by Rail



AAR. *Freight Railroads in Washington-2009*. Association of American Railroads. Retrieved as of August 2011 from: <http://www.aar.org/Railroads-States/Washington-2009.pdf>

In 2007, rail and barge moved more than 80 percent of the freight shipped and received via the Lower Columbia ports of Washington, with rail alone accounting for 72 percent. All dry bulk cargo bound for the Lower Columbia ports, mostly grain, arrived by rail. Rail accounts for 83 percent of the inland movements of dry bulks, all of the grain exported from the Puget Sound is received by rail; more than 80 percent of the Puget Sound ports' share of dry bulk traffic moves by rail<sup>41</sup>.

Washington's rail traffic increased by 13 percent in 2010, after declining 11 percent in 2009 due to the economic recession. The primary reason for the traffic increase is greater rail traffic passing through Washington. Flows increased origins in Montana, North Dakota, and Saskatchewan; and increased to destinations in British Columbia, Oregon, and California. Shipments terminating, originating and moving within Washington all increased<sup>42</sup>.

### The Columbia River Barge System Supports U.S. Agriculture

The river system is the freight lifeline for the inland Northwest and the Midwest, connecting upriver ports with lower Columbia River export load centers. Barge traffic along the Columbia and Snake Rivers brings grain and other bulk goods downriver to lower Columbia River ports. 4.7 million tons of wheat was moved down the Columbia-Snake River system by barges, accounting for 74% of the total downstream shipments. More than 35 different commodities move up and down the river system, with about three times as much downstream as upstream (Exhibit 13).<sup>43</sup>

<sup>41</sup> BST Associates. *2009 Marine Cargo Forecast: Technical Report*. March 23, 2009.

<sup>42</sup> WSDOT State Rail and Marine Office. 2010 Surface Transportation Board Waybill Data Analysis.

<sup>43</sup> Simmons, Sara and Ken Casavant. [FPTI Research Report #1](#). "Historical Waterborne Commerce on the Columbia-Snake River System: Commodity Movements Up and Down River, 1991-2010." November 2010.

### Exhibit 13: Barge Traffic on the Columbia-Snake River System, 2010

Columbia-Snake River System	
Downstream	Tons
Wheat	4,750,234
Forest Products (Lumber, Logs & Woodchips)	811,240
Other	402,361
Sand, Gravel, Stone; Limestone Flux & Calcereous Stone; Phosphate Rock	376,607
Rye, Barley, Rice, Sorghum & Oats	2,240
Total Shipments (tons)	6,342,682
Upstream	Tons
Distillate, Residual & Other Fuel Oils	946,151
Gasoline, Jet Fuel & Kerosene	732,747
Waste Material (Garbage, Landfill, Sewage Sludge & Waste Water)	238,062
Other	122,309
Fertilizer (Nitrogenous, Potassic, Phosphoric)	45,460
Total Shipments (tons)	2,084,729

Simmons, Sara and Casavant, Ken. "Historical Waterborne Commerce on the Columbia-Snake River System: Commodity Movements Up and Down River, 1991-2010." November 2010. [FPTI Research Report #1](#).

## Washington Supports Freight on North-South Corridors

As Washington State serves as a hub between Asia and the U.S., the state also moves freight to and from the West Coast, Canada, and Alaska.

### ***The U.S.-Canadian Border Is a Major Freight Gateway***

Canada has a long history as a significant U.S. trading partner, and Canadian trade has a strong impact in the state. In 2011 Canadian goods valued at more than \$14.4 billion entered the U.S. economy through Washington, and U.S. goods valued at \$8.4 billion entered Canada through Washington State.<sup>44</sup>

With the establishment of NAFTA, this trading relationship has expanded. In Washington, this increase in trade activity has historically affected truck rather than rail traffic volumes. In 2010, 21.8 percent of the weight of Washington surface trade imports from Canada was transported by truck, 18.2 percent by rail, and the balance by other surface modes (such as airplane exports and movement by pipeline). 598,000 trucks entered Washington from Canada in 2011. This represents 87 percent of the recent high of 682,000 entries in 2006; however, the 2011 truck crossings increased 2.2 percent over 2010<sup>45</sup>.

### ***Rail Crossings at the U.S.-Canadian Border***

From 1995 to 2006, the number of trains entering Washington from Canada remained relatively constant at about 3,000 per year. However, the train crossings dropped to 1,999 in 2007 and

<sup>44</sup> U.S. Census Bureau, Foreign Trade Statistics. *State Imports and Exports for Washington*. Retrieved as of October 2011 from: <http://www.census.gov/foreign-trade/statistics/state/data/index.html>

<sup>45</sup> U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). *Border Crossing/Entry Data: Time Series Analysis*. Retrieved as of October 2011 from: [http://www.bts.gov/programs/international/transborder/TBDR\\_BC/TBDR\\_BCTSA.html](http://www.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BCTSA.html)

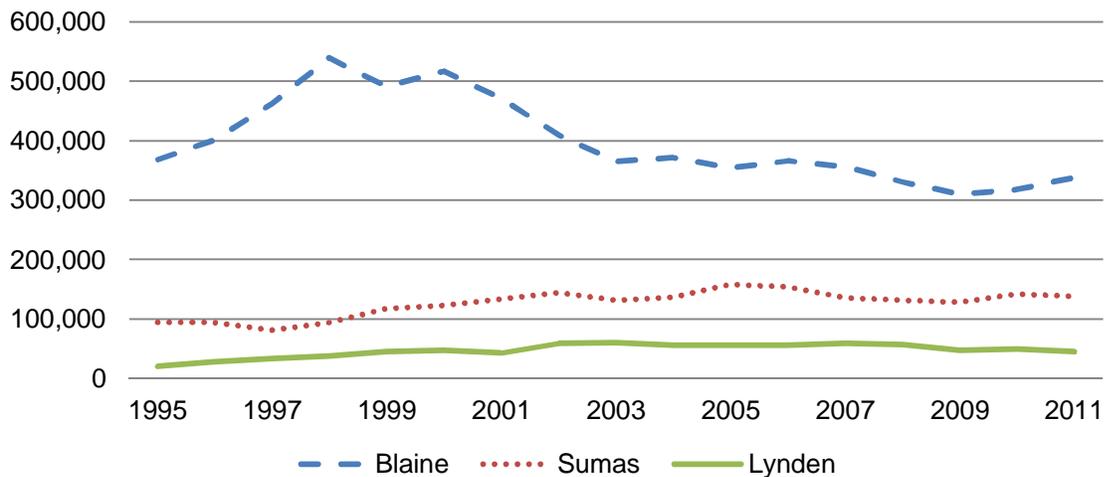
remained at this level through 2009. The total number of trains entering the state increased 13 percent from 2,409 in 2010 to 2,716 in 2011. This increase is likely due to recent economic improvements.<sup>46</sup>

**The Blaine Border Crossing Handles a High Volume of Truck Traffic**

Exhibits 14 and 15 show that most NAFTA traffic is west of the Cascades near the I-5 corridor, at the border crossings of Blaine, Sumas, and Lynden. As shown, in 2011 over 338,000 truck trips entered Washington from Canada through Blaine, and just over 138,000 trucks entered the state through Sumas. The border at Lynden ranked third highest in incoming truck crossing volume, followed by Oroville and Point Roberts.

**Exhibit 14: Trucks Entering Washington State from Canada, 1995-2011**

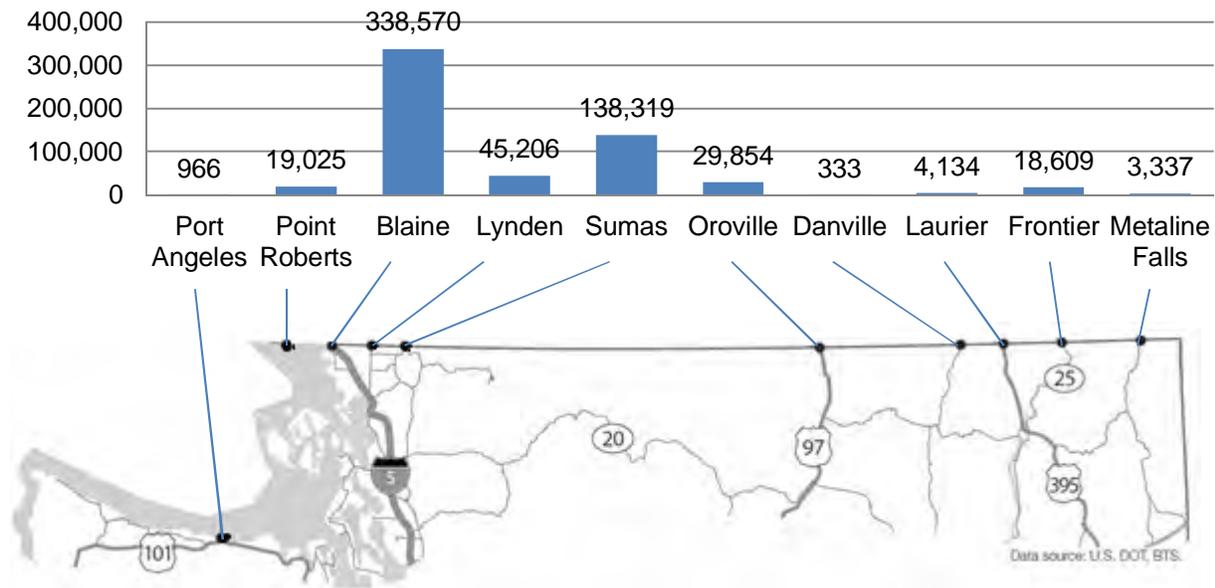
Number of Trucks



U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). *Border Crossing/Entry Data: Time Series Analysis*. Retrieved as of May 2012 from: [http://www.bts.gov/programs/international/transborder/TBDR\\_BC/TBDR\\_BCTSA.html](http://www.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BCTSA.html)

<sup>46</sup> U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). *Border Crossing/Entry Data: Time Series Analysis*. Retrieved as of October 2011 from: [http://www.bts.gov/programs/international/transborder/TBDR\\_BC/TBDR\\_BCTSA.html](http://www.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BCTSA.html)

**Exhibit 15: Trucks Entering Washington from Canada, 2011**



Washington State Department of Transportation. *The Gray Notebook (2012/Q1)*. Retrieved as of June 2012 from: [http://www.wsdot.wa.gov/NR/rdonlyres/63262743-5BFB-4026-97B6-32C3727B1F44/0/GrayNotebook45\\_Mar12.pdf](http://www.wsdot.wa.gov/NR/rdonlyres/63262743-5BFB-4026-97B6-32C3727B1F44/0/GrayNotebook45_Mar12.pdf)

As shown in Exhibit 16, the border crossing at Blaine ranks sixth among the 75 U.S. - Canadian crossings in terms of merchandise value transported. The exhibit also shows that in 2011, the Blaine border station ranked fourth in the U.S. by number of incoming truck crossings, with 338,570 total truck crossings in that year.

**Exhibit 16: Blaine’s Border Crossing Ranks in the Top Six for Value and Top Four for Volume of Crossings Among Land Ports Along the U.S. – Canadian Border in 2011.**

Rank, by Value	Land Ports	Value (billion \$)	Rank, by Trucks	Land Ports	Number of Crossings
1	Detroit, MI	120.0	1	Detroit, MI	1,474,775
2	Port Huron, MI	82.9	2	Buffalo-Niagara Falls, NY	926,447
3	Buffalo-Niagara Falls, NY	81.9	3	Port Huron, MI	673,707
4	Champlain-Rouses Pt., NY	24.2	4	Blaine, WA	338,570
5	Pembina, ND	22.1	5	Champlain-Rouses Pt., NY	285,246
6	Blaine, WA	18.9	6	Pembina, ND	208,509

U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). *Border Crossing/Entry Data: Time Series Analysis*. Retrieved as of May 2012 from: [http://www.bts.gov/programs/international/transborder/TBDR\\_BC/TBDR\\_BCTSA.html](http://www.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BCTSA.html)

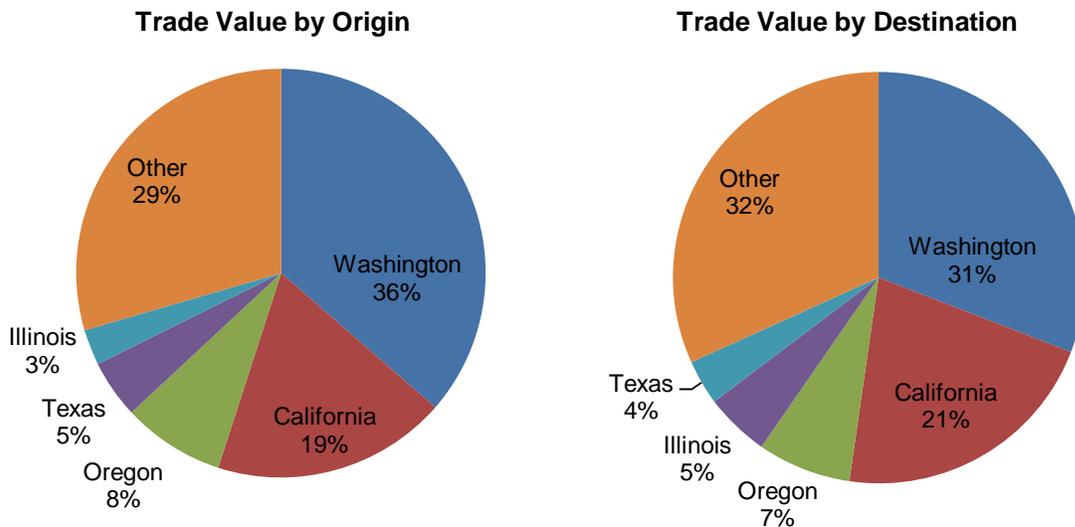
**Washington’s Border Links Canadian Trade With Other U.S. States**

In 2011 an annual value of \$10.7 billion moved north on I-5 to Canada through the Blaine Crossing on

truck. Another \$4.7 billion moved south from Canada through the same crossing. Only about 31 percent of this traffic originated from, or 36 percent terminated in Washington State (Exhibit 17). The rest is passing through, to, and from other states; namely, California and Oregon.

In 2010, imported wood products including pulp and paperboard comprised 47 percent of the weight at the Blaine Crossing by truck. However these products only make up 13 percent of the southbound value in U.S. dollars. The highest value commodities moved by trucks through Cascade Gateway were manufacturing goods, foods, farm products and wood. The manufacturing goods accounted for 60 percent of the total export value and 43 percent of the total import value through the gateway in 2010. The highest value of non-aircraft commodities exported northbound to Canada were computer related machinery and parts, electrical machinery and related parts, followed by motor vehicles, accounting for a combined 32 percent of the total export value through the gateway. Other exports accounted for less than five percent each, but comprise 63 percent of the total, displaying the large diversity of exports travelling north.<sup>47</sup>

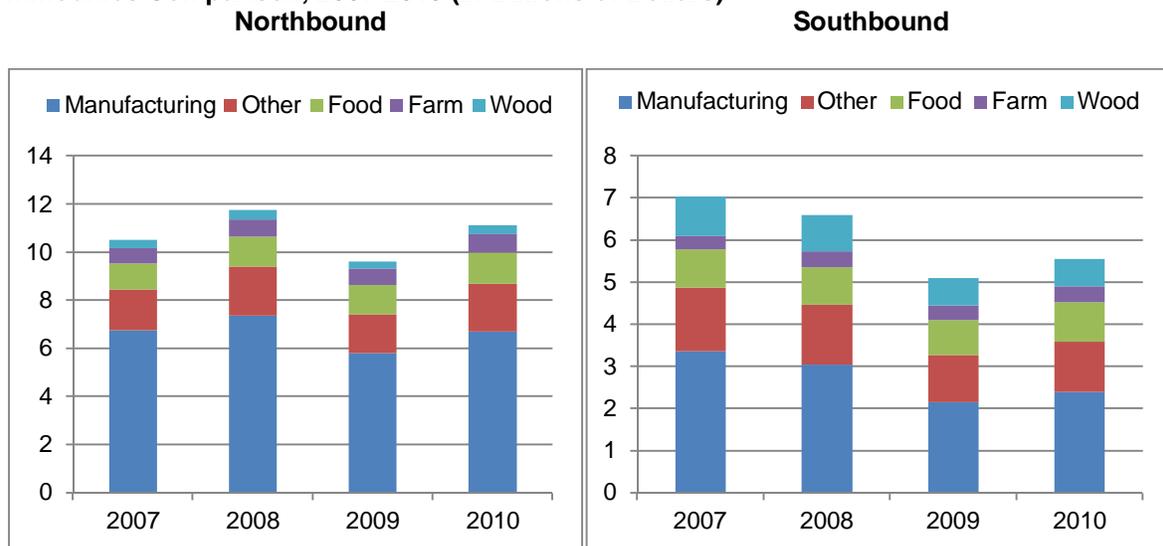
**Exhibit 17: Truck Trade Value through I-5 Border (Blaine Crossing) by Origin and Destination, 2011**



U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). U.S. States Trade with Canada and Mexico through a Specific Port or in a Specific Commodity. Retrieved as of May 2012 from: [http://www.bts.gov/programs/international/transborder/TBDR\\_QuickSearchPC.html](http://www.bts.gov/programs/international/transborder/TBDR_QuickSearchPC.html)

<sup>47</sup> U.S. Department of Transportation, Bureau of Transportation Statistics (BTS). *North American Transborder Freight Data - Query Commodity Trade Data by Port at Country Level* Retrieved as of October 2011 from: [http://www.bts.gov/programs/international/transborder/TBDR\\_QAPC07.html](http://www.bts.gov/programs/international/transborder/TBDR_QAPC07.html)

**Exhibit 18: Commodities Transported Cross-Border at the Cascade Gateway by Truck: North-South Commodities Comparison, 2007-2010 (in Billions of Dollars)**



International Mobility & Trade Corridor Project. 2012 Resource Manual. Retrieved as of May 2012 from: <http://resources.wcog.org/border/2012manual.pdf>

**Washington-Canadian Border Delays, Congestion, and Security Issues**

Trade across the U.S.-Canadian border changed in the wake of the 9/11 terrorist attacks. Evidence suggests that heightened security measures have increased the costs of freight movement across the border.<sup>48</sup> Heightened security measures in addition to increasing vehicle traffic have necessitated changes at the border to minimize the impacts.

In 2008, WSDOT completed a significantly improved Pacific Highway (SR-543) route through Blaine, to the Canadian border. The revamped passage included a reconstruction, lowering and repaving of the highway from Boblett Street to the U.S. Canadian border. The improvements also include a new truck lane to the east side of the Duty Free Store and lines up with the commercial inspection booths. Freight movement ease and congestion relief were key benefits sought from this project. Prior to the improvements, it had been estimated that \$22 million in operating costs were lost annually due to border crossing delays at the Blaine crossing.

The U.S. Customs and Border Protection (CBP) and Canada Border Services Agency (CBSA) have implemented the bilateral Free and Secure Trade (FAST) Program. The program aims to increase the integrity of supply chain security and efficiency by offering expedited clearance to carriers and importers enrolled in the Customs Trade Partnership Against Terrorism (C-TPAT) or Canada's Partner's in Protection (PIP).<sup>49</sup> At Blaine border crossing, state and provincial transportation agencies invested in the construction of highway lanes dedicated to FAST trucks, but to date there has been light use of these lanes. Only 23 percent of southbound trucks and just 2 percent of northbound trucks used the FAST lanes in 2009. Of the southbound FAST traffic, 73 percent of the trucks were empty. Border Policy Research Institute at

<sup>48</sup> Globerman, S., and Storer, P. 2009. *The Effects of 9/11 on Canadian-U.S. Trade: An update through 2008*. Metropolitan Policy Program at The Brookings Institute. Retrieved as of December 2011 from: [http://www.thetbvg.org/downloads/Effects\\_of\\_911\\_on\\_Canada\\_US\\_Trade.pdf](http://www.thetbvg.org/downloads/Effects_of_911_on_Canada_US_Trade.pdf).

<sup>49</sup> U.S. Customs and Border Protection. *Free and Secure Trade (FAST)*. Retrieved as of December 2011 from: [http://www.cbp.gov/linkhandler/cgov/trade/cargo\\_security/ctpat/fast/us\\_canada/fast\\_fact.ctt/fast\\_fact.pdf](http://www.cbp.gov/linkhandler/cgov/trade/cargo_security/ctpat/fast/us_canada/fast_fact.ctt/fast_fact.pdf).

Western Washington University worked with Whatcom Council of Governments to conduct a pilot project in spring 2011 to determine whether a reconfiguration of operations at the Port of Entry (POE) would lead to improved southbound freight mobility. In the pre-pilot configuration, one of Blain's three commercial booths has been used to serve trucks that participate in FAST program. The remaining two booths have been used to process standard trucks. During the pilot test, all three booths were used to process a mingled stream of FAST and standard trucks. The new configuration substantially reduced the overall average wait for standard trucks from 49.2 minutes to 11.8 minutes. The pilot configuration increased the wait time for FAST truck from 3.9 minutes to 11.8 minutes. The pilot configuration yielded a 71 percent reduction in aggregate wait time. The pilot configuration has been deployed permanently by U.S. Customs and Border Protection for southbound truck traffic entering the U.S.<sup>50</sup>

For the northbound truck traffic at Blain POE, the average wait time for standard trucks was 7.1 minutes in summer 2011, which is much less than the pre-pilot average wait time of 49 minutes in the southbound direction. The average wait time varied over the course of the day and had a midday peak, climbing to over 12 minutes at noon. The northbound FAST highway lane is very lightly used compared to standard booths<sup>51</sup>.

## **Freight Movement Along the North-South Highway Corridors**

### ***Interstate 5 Freight Movements***

The I-5 corridor is the critical north-south interstate corridor supporting U.S. trade with Asia and links marine and air cargo port complexes with essential state warehouse districts, industrial lands and other intermodal transportation hubs. The U.S. military depends on the I-5 corridor for logistical support of national defense in the Pacific region. Joint Base Lewis-McChord on the I-5 corridor is the only Power Projection Platform on the West Coast. In the event of a major conflict, military traffic will surge through I-5 in Central Puget Sound.

I-5 serves Washington's major population centers, and corridor performance is affected by the congestion associated with rapid population growth. In 2010, the average daily truck traffic at I-5 Columbia River Crossing was 6,200 vehicles, the average daily truck traffic on I-5 through downtown Seattle was 17,000 vehicles, and near the Canadian Border crossing, the average daily truck traffic was 780<sup>52</sup>. Truck traffic is expected to increase substantially in the future, about 122 percent between 2007 and 2040 according to the FHWA Freight Analysis Framework (FAF3).

The I-5 Corridor serves nine intermodal rail yards, where BNSF and Union Pacific railroads connect with freight trucks and ports. In the I-5 corridor a rail line runs the length of the state from the Canadian border through Bellingham, Everett, Seattle, and Tacoma to Vancouver and Portland. Rail absorbs some of the traffic growth from congested highways. Because most rail shipments are going long distances, investment in new rail capacity may not moderate growth in truck traffic—most of which is associated with short- and medium-distance trips—on the I-5 corridor.

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<sup>50</sup> Border Policy Research Institute. 2011. Testing a Reconfiguration of FAST at the Blain POE. Border Policy Brief, Volume 6, No.2.

<sup>51</sup> Border Policy Research Institute. 2011. Field Observations of Northbound Truck Traffic at Pacific Highway. Retrieved as of June 2012 from: [http://www.wvu.edu/bpri/files/2011\\_Oct\\_NB\\_Pac\\_Hwy\\_Report\\_No\\_14.pdf](http://www.wvu.edu/bpri/files/2011_Oct_NB_Pac_Hwy_Report_No_14.pdf)

<sup>52</sup> WSDOT. Washington State Freight and Goods Transportation System 2011 Update.

### **The Columbia River Crossing**

Interstate 5 (I-5) is the backbone of the Washington State transportation system and the West Coast freight system, crossing three states and linking three nations. As the most heavily used highway in the state, it is critical to the regional, state, and national economy. Congestion in the corridor has a major impact on Washington shippers and impedes trade with national markets. There is no practical alternative route to I-5 for freight trucked along the North-South corridor.

The Columbia River Crossing, a five-mile stretch along I-5 between State Route 500 in Washington and Columbia Boulevard in Portland, Oregon has been identified as a major, regional pinch point along the corridor. This crossing serves as an access point to both the Port of Vancouver, and the Port of Portland as well as rail connections and industrial, warehouse facilities.

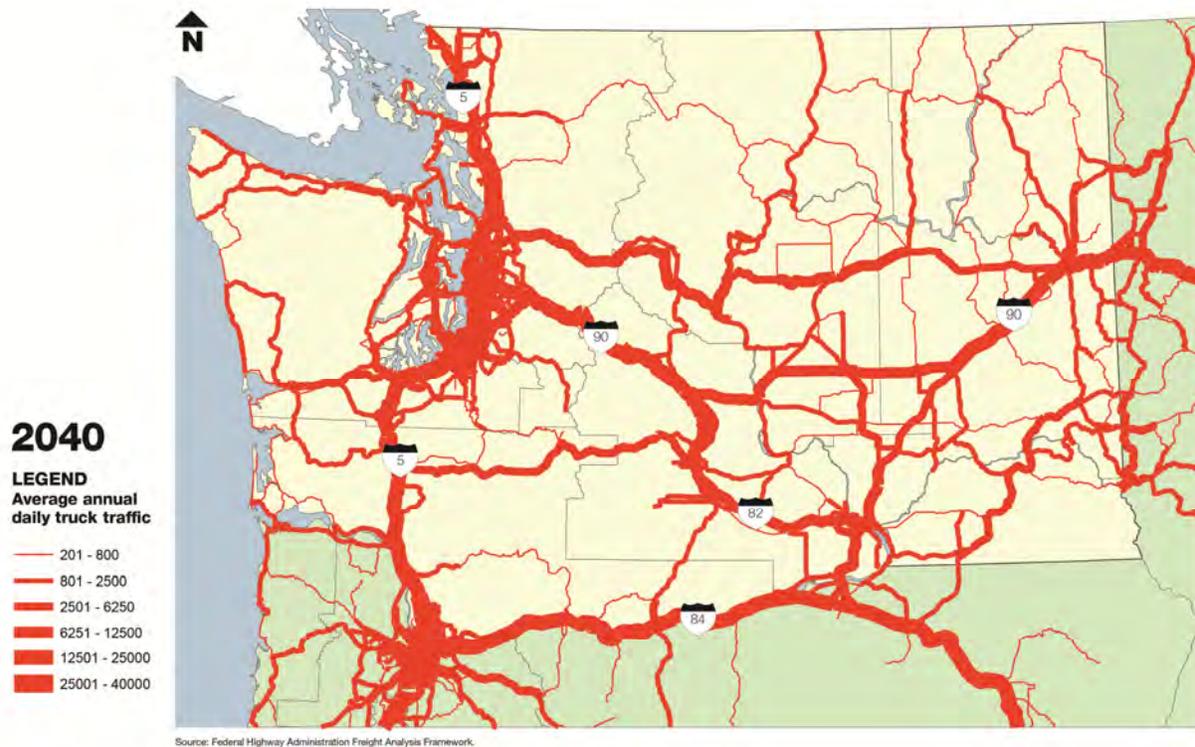
The crossing currently experiences four-to-six hours of daily congestion to do excess demand beyond system capacity, high collision rates, and a lift span for crossing marine traffic. As forecasts predict a 77 percent increase in truck traffic in the next 20 years, as well as burgeoning population growth of the metro area, congestion could expand to 15 hours a day by 2030.

Recognizing the impacts caused by increased congestion on the more than \$40 billion in annual freight trucked over the bridge in addition to other congestion related costs, a bi-state, multi-modal, effort has been underway since 2008. This effort is expected to relieve congestion by up to 70 percent by improving interchanges, replacing bridges, and improving access to all transportation modes in order to produce more reliable transit for freight and other users.

AASHTO. *Unlocking Freight (July 2010)*. Retrieved as of December 2011 from:

[http://expandingcapacity.transportation.org/unlocking\\_freight/images/FreightReportFinal\\_7710.pdf](http://expandingcapacity.transportation.org/unlocking_freight/images/FreightReportFinal_7710.pdf)

**Exhibit 19: Estimated Annual Daily Truck Traffic in Washington, 2007 and 2040**



Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations. *Freight Analysis Framework, version 3.1.2, 2011*. Retrieved as of November 2011 from: [http://ops.fhwa.dot.gov/freight/freight\\_analysis/faf/faf3/netwkdbflow/index.htm](http://ops.fhwa.dot.gov/freight/freight_analysis/faf/faf3/netwkdbflow/index.htm)

### **Other Important North-South Truck Corridors in Washington State**

Highway 395 is a congressionally designated NHS High Priority Corridor. In total, the highway runs from Laurier at the U.S.-Canadian border, south through Spokane where it then runs concurrently with I-90 west for 61 miles before again turning south towards Pasco and on into Eastern Oregon and California.<sup>53</sup> In 2010, the average daily truck traffic carried by US 395 is 150 vehicles near Canadian Border, 950 vehicles at US 2 in Spokane, and 3,700 vehicles merging onto I-82 in Benton County. Although Highway 395 carries a much smaller volume of through trucks than I-5, it is important for the regional natural resource industry.

US 97 is also a strategic freight corridor and a designated NAFTA freight corridor. In 2010, SR 97 carried 720 average annual daily trucks near Canadian border, 630 daily trucks at I-90 interchange, and 1,800 daily trucks through Washington/Oregon state line<sup>54</sup>. The highest value commodities moved by northbound trucks through Canadian border via US 97 were vehicles and parts, machinery and mechanical appliances, and plastics.

### **Washington's Freight System Connects Alaska with the Continental United States and Points Beyond**

The value and volume of freight moved between Puget Sound seaports and Alaska makes this one of the nation's most important routes for domestic waterborne commerce with Alaska.

By weight, the most significant commodity carried to Washington State from Alaska is crude oil. Oil travels south from Alaska onboard tankers through the inland waterway, and is offloaded at refineries in Cherry Point, Ferndale, March Point, and Tacoma. In 2009 Washington received 16.4 million tons of crude oil from Alaska by water, constituting 95 percent of all freight coming into Washington State from Alaska by water and 83 percent of Washington's total domestic, waterborne trade with Alaska.<sup>55</sup>

According to the 2011 Marine Cargo Forecast, the relatively flat volume of Alaskan crude petroleum that landed in Washington State in previous years will begin to decrease as Alaskan production drops. The refineries in the region are expected to begin receiving crude oil by rail from North Dakota, which may impact waterborne volumes.<sup>56</sup>

In turn, consumer products and supplies leave Washington seaports for Alaskan markets. Almost 30 percent of waterborne cargo tonnage entering Alaska originated from Washington State in 2010. Also in 2010, Washington's seaports sent more than 2.5 million tons of goods to Alaska. Manufactured goods constituted over 51 percent of this weight, or nearly 1.3 million tons. In 2010 trade with Alaska made up over 8 percent of the Port of Tacoma's total trade value—\$3 billion. Only China, Japan and

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<sup>53</sup> WilburSmith Associates. *Inland Pacific Hub Multimodal Infrastructure Report, Final (May, 2010)*. Retrieved as of October 2011 from:

[http://www.inlandpacifichub.org/documents/2.5%20Tech%20Memo%201/Technical%20Memorandum\\_1\\_final.pdf](http://www.inlandpacifichub.org/documents/2.5%20Tech%20Memo%201/Technical%20Memorandum_1_final.pdf)

<sup>54</sup> WSDOT. Washington State Freight and Goods Transportation System 2011 Update.

<sup>55</sup> U.S. Army Corps of Engineers Navigation Data Center - Waterborne Commerce Statistics Center. *2010 Commodity Movements from the Public Domain Database. State to State by Destination and Origin*. Retrieved as of May 2012 from: [www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm](http://www.iwr.usace.army.mil/ndc/wcsc/wcsc.htm)

<sup>56</sup> BST Associates. *2009 Marine Cargo Forecast: Technical Report*. March 23, 2009.

South Korea had higher trading value through the port.<sup>57</sup>

Cargo runs the gamut, from department store goods to building materials, new cars, military vehicles, and school buses. Most major retailers do not have distribution centers in Alaska. Companies are reliant on Alaskan shipping lines to transport retail goods in a timely manner to reach markets in Alaska.

## Washington's Airports Are Gateways for High-Value and Time-Sensitive Goods

Between 1985 and 2000, world air cargo grew at an annual rate of 7.3 percent. Washington State has kept pace with the world market. Between 1985 and 2000, total air cargo volume at Seattle-Tacoma

International Airport (Sea-Tac) and Boeing Field grew by 180 percent (an average annual growth rate of seven percent).<sup>58</sup> From 2000 to 2011, air freight moving through Sea-Tac has decreased by 39 percent.

In 2010, air cargo handled at Washington airports totaled 1,370,262 tons (measured in plane plus cargo weight). Despite there being more than 20 airports in the state that can handle cargo, activity is highly concentrated at three Washington airports: about 51 percent of all air freight was handled at Sea-Tac International

Airport, about 33 percent was handled at Boeing Field/King County International Airport, and about 16 percent was handled at Spokane International Airport.<sup>59</sup>

### Alaska Airlines Delivers Season's First Copper River Salmon

At 6 a.m. on Tuesday May 17, 2011, the first shipment of Alaska's now famous Copper River Salmon arrived at the Alaska Air Cargo Warehouse with fresh salmon from three seafood processors: Ocean Beauty Seafoods, Trident Seafoods and Copper River Seafoods. The arrival of the annual first fish is a celebrated event in the Northwest, as executive chefs compete in a "Copper Chef Cook-off". Alaska Air Cargo plays a vital role in the delivery of more than 25 million pounds of fresh Alaska Seafood, including 700,000 pounds of Copper River Salmon to the Lower 48 states.

Alaska Airlines. *Alaska Air Cargo Delivers Season's First Copper River Salmon To Seattle*. (May 17, 2011). Retrieved as of December 2011 from:

[http://splash.alaskasworld.com/Newsroom/ASNews/ASstories/AS\\_2011\\_0517\\_070408.asp?INT=AS\\_SPLASH\\_||20100514\\_AW||](http://splash.alaskasworld.com/Newsroom/ASNews/ASstories/AS_2011_0517_070408.asp?INT=AS_SPLASH_||20100514_AW||)

## The Majority of Air Cargo Moves Through Sea-Tac

Sea-Tac ranks 18<sup>th</sup> in the U.S. by tons of cargo handled in 2010. Total cargo passing through the airport in 2011 was over 279,625 metric tons, comprised of 152,211 tons of domestic freight, 81,918 tons of international freight, and 45,496 tons of air mail.

Exhibit 20 shows the history and trends for Sea-Tac's air cargo activity from 2000 through 2011. The last decade has seen a gradual decline in air freight moving through Sea-Tac International Airport. Since 2000, the volume of air mail fell significantly: 145,539 metric tons in 2000 compared to 45,496 in 2011.

International freight volumes have remained stable as domestic freight volumes have declined, with 236,527 metric tons in 2000 compared to 152,211 in 2011.

<sup>57</sup> Port of Tacoma. *Facts and Stats: 2010 at a Glance*. Retrieved as of December 2011 from:

<http://www.portoftacoma.com/stats>.

<sup>58</sup> Puget Sound Regional Council. *Regional Air Cargo Strategy Final Report*. (October 2006): Page IV-5.

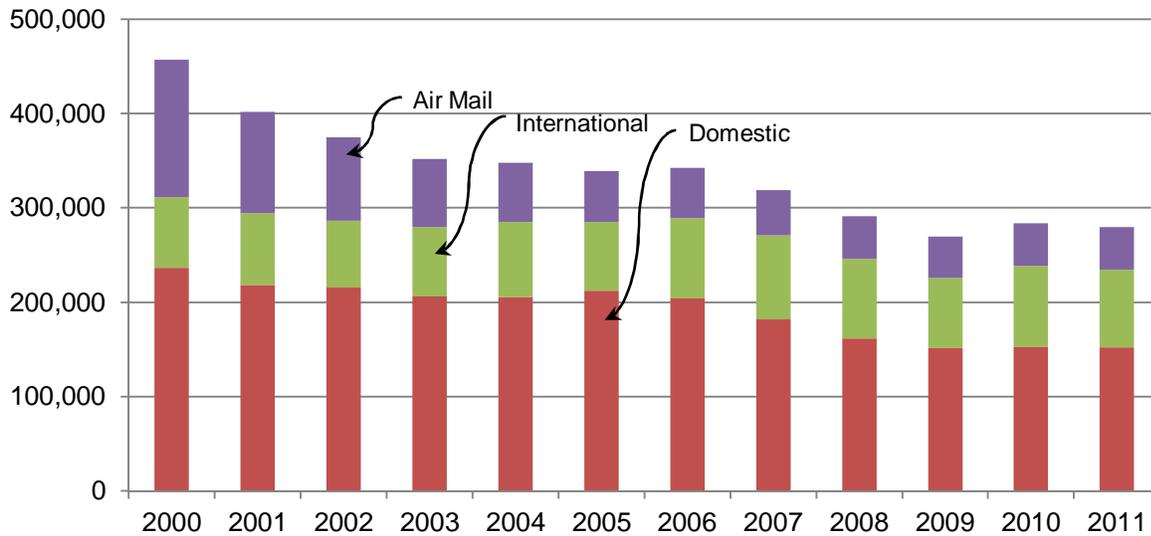
<sup>59</sup> Federal Aviation Administration (FAA). *Qualifying Cargo Airports, Rank Order, and Percent Change from 2009*. (October 2011).

Federal Aviation Administration (FAA). *Qualifying Cargo Airports, Rank Order, CY2000*. (October 2001).

**Exhibit 20: Air Cargo Through Sea-Tac International Airport**

**Total Sea-Tac air freight, by category**

*In metric tons, 2000 - 2011*



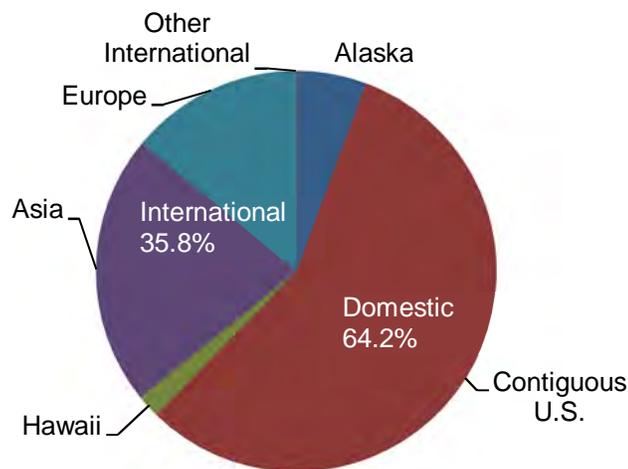
Data source: Port of Seattle.

Note: Data as reported to Port of Seattle by the airlines.

Exhibit 21 shows the split of air freight volume between U.S. and international destinations at Sea-Tac in 2010. As the exhibit reflects, over 64 percent of air freight is domestic, just over 35 percent is bound for or arrives from Europe or Asia, and less than one percent is related to other international partners including Canadian or Mexican origins and destinations.

**Exhibit 21: Seattle-Tacoma International Airport Air Freight 2010**

Percent Based on Tons



Port of Seattle. 2010 Seattle-Tacoma International Airport Activity Report. Page 23. As report to Port of Seattle by the Airlines. Retrieved as of October 2011 from: <http://www.portseattle.org/downloads/seatac/2010activity.pdf>

### **King County International Airport/Boeing Field Air Cargo**

Though readily overlooked in relation to Sea-Tac International when considering air passenger travel, Boeing Field holds its own in importance to freight movement in Washington. Boeing Field landed over 453,358 tons of cargo in 2010, a 1.35 percent increase over 2009. This landed weight ranks Boeing Field only seven spots behind Sea-Tac nationally, at 25<sup>th</sup>.<sup>60</sup> Among the leading exports making their way out of Boeing Field are cherries, seafood, and fishing industry support materials, with about \$3 million worth of cherries exported overseas. Seafood and electronics are the top import commodities.<sup>61</sup> Freight movement and other airport activities have been estimated to generate \$3.2 billion in terms of business sales locally and supported 4,900 direct jobs as well as 12,618 indirect jobs in 2008.<sup>62</sup>

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<sup>60</sup> Federal Aviation Administration (FAA). *Qualifying Cargo Airports, Rank Order, and Percent Change from 2009*. (October 2011).

<sup>61</sup> Transportation Issues Daily. *What do iPads and Seafood Have In Common?* (June 3, 2011). Retrieved as of December 2011 from: <http://www.transportationissuesdaily.com/what-do-ipads-seafood-have-in-common/>.

<sup>62</sup> William B. Beyers and Michael Babb. King County International Airport Economic Impact Study 2008. March 2009. Prepared for King County International Airport.

## **Made in Washington: Freight Transportation Serves Washington State's Own Producers**

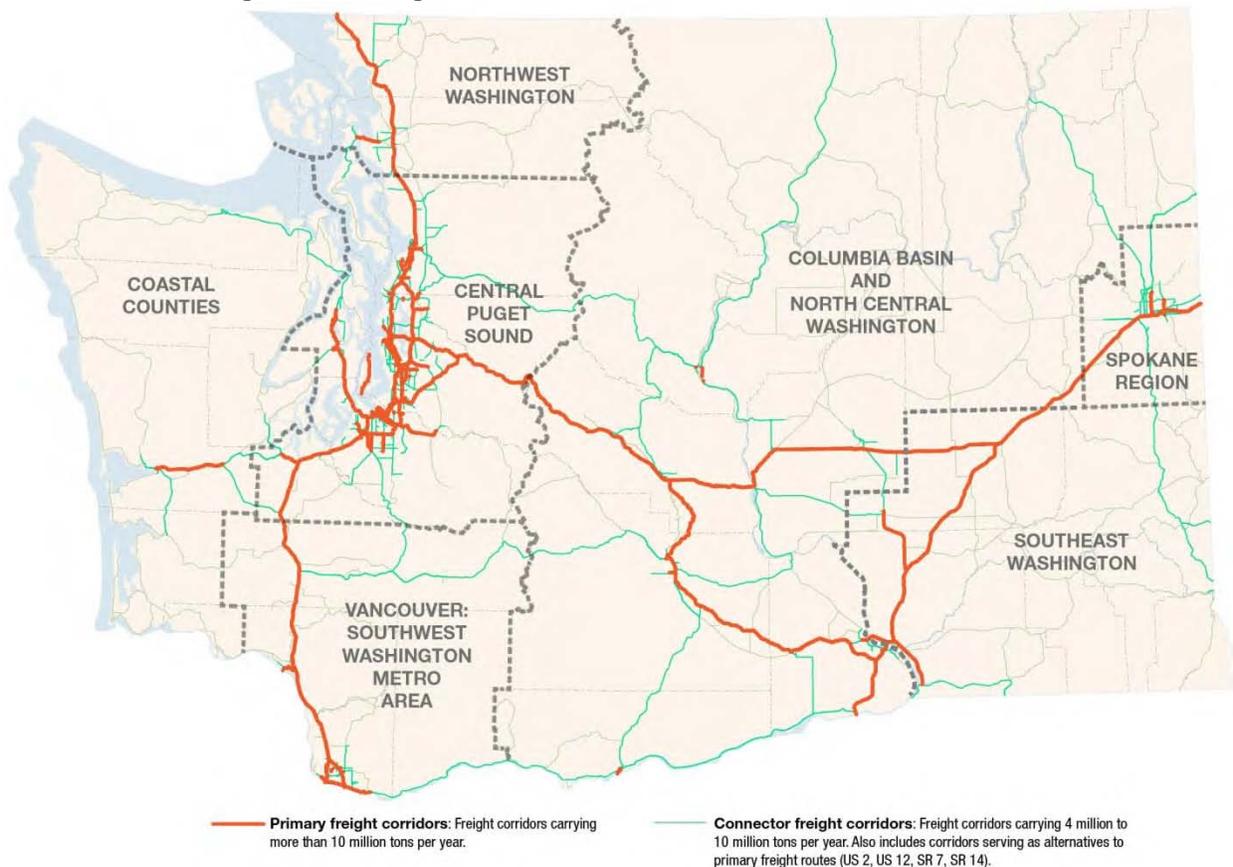
Washington State has built strong and distinct regional economies based on industry and agriculture. These regional economies and their manufacturing, agriculture, construction, and forestry components depend, in turn, on an effective and efficient freight transportation system.

Our state's manufacturers and farmers rely on the freight system to ship Washington-made products to local customers, to large domestic markets in California and the East Coast, and worldwide. Washington producers generate wealth and jobs in every region of the state.

This chapter is organized by the state's major regions as shown in the map on the following page. Seven regions are profiled:

- **Southeast Washington:** home to major wheat production and an agricultural export center.
- **Columbia Basin and North Central Washington:** center for agricultural products including potatoes, apples, onions, and hay; wine grape growing and wine production; and timber harvesting.
- **Central Puget Sound:** a manufacturing center for Boeing aircraft and thousands of other mid-market manufacturers, with strong construction and maritime sectors.
- **Spokane Region:** the manufacturing and commerce center for the east side of the state.
- **Vancouver and Southwest Washington:** connected economically with the Portland, Oregon area, and connected from a transportation perspective by the Columbia River Bridge system and the Ports of Vancouver and Portland.
- **Northwest Washington:** with a focus on the U.S.-Canadian border connection.
- **Coastal Counties:** home to forestry and manufacturing products transport, including lumber production and exporting, as well as plywood and value-added wood products.

## Exhibit 22: Washington State Regional Economies



### Overview of the State's Production Economies

Agri-business, a key industry in the state, supports family farmers, food processors, and other agricultural businesses. In 2010 Washington State's agricultural business employed approximately 87,643<sup>63</sup> people, contributing up to \$3.0 billion in state gross business income<sup>64</sup>. Food manufacturing contributed another \$9.5 billion in state gross business income along with 33,342 more jobs. The transportation network is especially important for Washington's agriculture industry, since the state produces about three times as much food as it consumes, and is separated by long distances from the majority of the nation's consumers. Washington ranked third in the U.S. in value of food and agriculture exported, with nearly \$13 billion moving through the ports<sup>65</sup>.

Manufacturing is rebounding in Washington State. In 2010 manufacturing Gross Business Revenues in Washington were \$123.2 billion, which was 21 percent of the total State Gross Business Income and up 16.6 percent from 2005's \$105.7 billion, though 7.6 percent lower than 2007's high of nearly \$133.3

<sup>63</sup> Washington State Employment Security Department. Quarterly Census of Employment and Wages, 2010 Annual Averages. Retrieved as of June 2012, <https://fortress.wa.gov/esd/employmentdata/reports-publications/industry-reports/quarterly-census-of-employment-and-wages>

<sup>64</sup> Washington State Department of Revenue. Quarterly Business Reviews. Calendar Year 2010. [http://dor.wa.gov/content/aboutus/statisticsandreports/stats\\_qbr.aspx](http://dor.wa.gov/content/aboutus/statisticsandreports/stats_qbr.aspx)

<sup>65</sup> Washington State Department of Agriculture. Agriculture: A cornerstone of Washington's Economy. <http://agr.wa.gov/AgInWA/>

billion<sup>66</sup>. In 2010, the sector employed 254,843 workers (9.1 percent of all jobs) and paid 12.1 percent of total wages in Washington. Average wages in manufacturing were \$64,925 in 2010. Several manufacturing sub-sectors paid even more, including transportation equipment manufacturing with an average wage above \$89,000. Each manufacturing job supports another 1.5 to 3 jobs in our state, according to *Washington Manufacturing Services* (now *Impact Washington*).<sup>67</sup>

In their publication of personal income statistics, the Bureau of Economic Analysis (BEA) defines a set of “high wage jobs” as those in industries that have higher average earnings per job than the national average, which is calculated by dividing total earnings by the total number of jobs. Between 2003 and 2007, the percentage of jobs in “high wage” industries in Washington had been declining at a slowing pace. This trend finally produced an increase in 2008, 49.8 percent, and again in 2009, 50.2 percent. This increase of 0.4 percentage points ranked 13th among the states and was higher than the U.S. average of a 0.1 percentage.<sup>68</sup>

Value-added wood and paper products produced \$13.4 billion of Washington’s Gross Business Revenues in 2010.<sup>69</sup>

## Southeast Washington Sells Wheat to the World

Washington wheat growers produce five types of wheat: soft white, hard red winter, hard red spring, hard white and durum. In 2011 Washington ranked fourth nationally in wheat production (167.8 million bushels grown on 2.3 million acres), after Kansas, North Dakota, and Montana.

**Exhibit 23: Grain Elevator**



Sixty-two percent of all wheat grown in Washington came from eight southeast Washington counties—Adams, Asotin, Columbia, Franklin, Garfield, Lincoln, Walla Walla, and Whitman—in 2010. Grant, Spokane, and Douglas Counties grew 17 percent of the total.<sup>70</sup>

Whitman County has been the number one wheat-producing county in the United States every year since 1978. Despite the physical growing of wheat being concentrated to a few counties, the ripple effects of wheat production is felt throughout the state in the form of jobs and revenue in food processing, transportation, as well as wholesale and retail industries. Wheat’s production value approached \$925 million in 2011, making it the third highest yielding crop for the state by value.<sup>71</sup>

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<sup>66</sup>Washington State Department of Revenue. Quarterly Business Reviews. Calendar Year 2010. [http://dor.wa.gov/content/aboutus/statisticsandreports/stats\\_qbr.aspx](http://dor.wa.gov/content/aboutus/statisticsandreports/stats_qbr.aspx)

<sup>67</sup> Impact Washington. Why Manufacturing Matters in Washington. <http://impactwashington.org/about-us>

<sup>68</sup> Economic Review and Forecast Council (ERFC). *Washington State Economic Climate Study*. December 2010, Volume XV. Retrieved November 2011 from: <http://www.erfc.wa.gov/publications/documents/climate2010.pdf>

<sup>69</sup> Washington State Department of Revenue. *Statistics and Reports, Gross Business Income*. Retrieved October 2011 from: <http://dor.wa.gov/content/aboutus/statisticsandreports/TID/StatisticsReports.aspx?query=gbinacis>

<sup>70</sup> United States Department of Agriculture: Washington Agricultural Statistics Service. 2011 Washington Annual Agricultural Bulletin. Retrieved as of June 2012 from: [http://www.nass.usda.gov/Statistics\\_by\\_State/Washington/Publications/Annual\\_Statistical\\_Bulletin/annual2011.pdf](http://www.nass.usda.gov/Statistics_by_State/Washington/Publications/Annual_Statistical_Bulletin/annual2011.pdf)

<sup>71</sup> Washington Grain Commission. *Washington Wheat Facts 2011-2012*. Retrieved as of June 2012 from: <http://www.washingtongrainalliance.com/PDFs/2011-12WF4Web.pdf>

Over 58 percent of total US wheat was exported. Washington is one of the nation's leading wheat-exporting states, with 85 to 90 percent of its production exported in 2011. Harvested wheat is taken by farmers' grain trucks to on-farm storage or nearby commercial grain elevators. After the wheat is sold, it is transferred by truck to regional rail- or barge-loading facilities. Over 60 percent of Washington's wheat exports ultimately travel by barge from ports along the 400-mile Snake-Columbia river system to Portland. About 36 percent of the wheat is transported by rail to coastal grain terminals. From these seaport terminals, grain is loaded onto ocean freighters and exported to nations around the world.<sup>72</sup>

Effective and efficient in-state transportation—from field to ship waiting at a Columbia River port—determines whether eastern Washington wheat farmers can compete internationally. Global wheat prices typically include delivery to port, so every cent of in-state transportation cost reduces farmers' profit by an equivalent amount. Washington State wheat growers' get a big boost from our state's low-cost multimodal system that allows them to deliver commodity goods on demand to global markets.

Recent extended lock outages along the Columbia River System provided ample opportunity to evaluate the importance of the river system to wheat movement. The scheduled maintenance outage was conducted between December 2010 and March 2011 and eliminated barge traffic on much of the upper Columbia River and the entirety of the Snake River system. Additionally, the outage placed increased demands on other modes of transportation. Between 1991 and 2010 downriver tonnage of commodities exceeded 139 million tons. Over this period, wheat comprised about 70 percent, or 96 million tons of the total 139 million tons, of commodities transported downriver.

During the months of January and February of the three-year period leading up to the lock outage, wheat movement constituted in excess of 80 percent of the tonnage moving down river.<sup>73</sup>

In the months leading up to the lock outage, researchers with the Freight Policy Transportation Institute (FPTI) at Washington State University conducted a survey of wheat elevators in the Pacific Northwest. Of the elevators surveyed in the southeast Washington region, 97.5 percent moved their wheat by truck-barge, 1.5 percent by rail and one percent by truck. These eight elevators processed more than a third of all Pacific Northwest wheat. Elevators in Northern Washington, generally north of I-90, handled another third of the wheat; however, these elevators typically move their wheat by rail, 71 percent, with only 15 percent moving by truck-barge. Exhibit 24 below elucidates the variation in transportation costs in the two Washington regions. Northern Washington wheat firms pay \$0.52 per bushel for trucking, \$0.57 per bushel for truck-barge and \$0.54 per bushel for rail. Southern Washington wheat firms pay \$1.12 per bushel to truck wheat, \$0.47 per bushel to barge wheat and \$0.55 to rail wheat.<sup>74</sup>

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<sup>72</sup> Washington Grain Commission. *Washington Wheat Facts 2011-2012*. Retrieved as of June 2012 from: <http://www.washingtongrainalliance.com/PDFs/2011-12WF4Web.pdf>

<sup>73</sup> Simmons, Sara and Ken Casavant. [FPTI Research Report #1](#). "Historical Waterborne Commerce on the Columbia-Snake River System: Commodity Movements Up and Down River, 1991-2010." November 2010.

<sup>74</sup> Simmons, Sara and Ken Casavant. [FPTI Research Report #2](#). "Industry Preparations for the Columbia-Snake River Extended Lock Outage, July – December 2010." February 2011.

## Exhibit 24. Transportation Rates by Wheat Elevator Firms.

Region	Average Rate in Cents per Bushel (Lower Columbia Terminals)		
	Direct Truck to Final Market	Truck-Barge	Rail
Eastern Oregon	\$0.50	\$0.29	\$0.58
Northern Idaho	\$1.50	\$0.58	\$0.73
Southern Idaho	\$0.71	\$0.86	\$0.83
Northern Washington	\$0.52	\$0.57	\$0.54
Southern Washington	\$1.22	\$0.47	\$0.55
Pacific Northwest	\$0.89	\$0.55	\$0.65

During the lock outage, transportation adjustments had to be made by all parties involved in the movement of wheat and other commodities up and down the river system. Class I rail operators increased the number of weekly trains. Mostly the number of trains moving west to accommodate wheat. Wheat producers and state commissions spread the word of the disruption and prepared for the changes by increasing movement prior to the lock outage as well as increasing storage capacity. Movement of wheat through the barge system in the months leading up to the outage was 15 percent higher than average. The high prices of wheat at this time made the choice to move more wheat sooner, a relatively easy choice for many producers.<sup>75</sup>

According to industry interviews conducted by FPTI researchers, wheat shipments that normally moved by barge transportation under normal conditions were moved by truck and rail during the lock outage. With several 110 railcar loading facilities in the Pacific Northwest including those located in eastern Washington shippers planned to take on high volumes of wheat during the lock outage. Ritzville Warehouse Company, a grain elevator in Washington expected three times the normal winter business during the lock closure. These railcar loading facilities have access to hundreds of miles of track and elevators, making this mode efficient and affordable, more so than direct trucking, for traditional barge customers. Southern Washington elevator firms typically moving 35 percent of the wheat between December and March, moved only 4 percent of the wheat during the outage, a 95 percent decrease, reflecting their great dependence on the barge system.<sup>76</sup>

### The Columbia Basin and North Central Washington: Agricultural Growing and Processing Center

In 2010, 137,166 jobs in the Columbia Basin and North Central Washington regions were directly dependent on the efficiency of our freight system: 57,487 in agriculture and forestry, 20,055 in manufacturing (processed food and other sectors), 6,476 in transportation, warehousing, and utilities, 41,593 in wholesale or retail trade, and 11,555 in construction.<sup>77</sup> This region is a national center of apple, potato, onion, hay, wine, and lumber production.

Washington State, the second largest potato producing state in the country<sup>78</sup>, produced 9.8 billion pounds of

<sup>75</sup> Simmons, Sara and Ken Casavant. [FPTI Research Report #2](#). "Industry Preparations for the Columbia-Snake River Extended Lock Outage, July – December 2010." February 2011.

<sup>76</sup> Simmons, Sara and Ken Casavant. [FPTI Research Report #9](#). "Industry Reactions to the Columbia-Snake River Extended Lock Outage, December 2010-March 2011." June 2011.

<sup>77</sup> Office of Financial Management. *2011 Washington State Data Book. Local Government and Special Districts*. Retrieved as of June 2012 from: <http://www.ofm.wa.gov/databook/>. Values include Benton, Chelan, Douglas, Ferry, Grant, Kittitas, Klickitat, Okanogan, Pend Oreille, Stevens, and Yakima Counties.

<sup>78</sup> The Washington State Potato Commission. *Washington State Potatoes and the Economy*. Retrieved as of June 2012 from: <http://www.potatoes.com/industryinformation.cfm>

potatoes on 160,000 acres in 2011, for an average of 61,500 pounds per acre. Washington's growers provide fully one fifth of the nation's potato supply. The industry harvested \$734 million in potatoes, trailing only apples, milk and wheat as the leading agricultural product in Washington State. These sales produced \$4.6 billion in total value for the State's economy.<sup>79</sup>

According to the Washington Potato Commission, Washington-based processors turn nearly 90 percent of the annual potato yield into value-added products, increasing the value of the crop nearly six-fold. Nine out of every ten of the state's potato crop is marketed outside of Washington; exports to overseas market account for a significant portion of sales.<sup>80</sup>

In the 2009-10 crop year, over 32.3 million boxes of Washington State apples, each weighing about 42 pounds, were harvested and exported to more than 60 countries around the world. These exports annually account for about 30 percent of the state's apple harvest and primarily come out of north central Washington and the Columbia Basin.<sup>81</sup> In 2010 Washington State produced a total of 2.78 million tons of apples. Washington State consistently ranks number one nationally in apple production, and grew 59.7 percent of all U.S. apples in 2010. Apples topped the list of all Washington State agricultural products with the value of production nearly \$1.5 billion, representing 18.2 percent of total agricultural value in 2010.<sup>82</sup>

U.S. trade volume in apples has increased since the early 1990s, largely due to increases in import traffic. Fresh apple imports have increased 46 percent since the early 1990s, through 2007/08; largely attributable to off-season imports. Exports similarly increased 44 percent over this period. Washington produced 57 percent of the 2007 apple crop in the US. Washington apples going to fresh markets increased to an all-time high of 84 percent in 2007. Nationally, 24 percent of fresh apples are bound for exports<sup>83</sup>.

With more than 740 wineries and over 350 wine grape

growers on 40,000 acres, Washington was the second largest premium wine producer in the United States in 2011. The retail value of production was \$610.76 million, with more than \$3 billion total economic impact on Washington State and \$4.7 billion total economic impact on U.S. economy. Washington has twelve recognized American Viticulture Areas (AVA): Yakima Valley, Walla Walla Valley, Columbia Valley, Puget Sound, Red Mountain, Columbia Gorge, Horse Heaven Hills, Wahluke Slope, Rattlesnake Hills, Snipes Mountain, Lake Chelan, and Naches Heights. The Columbia Valley is Washington's largest viticultural region and makes up 99 percent of the state's total acreage of wine grape producers. Shipments of Washington wine go to all 50 states and more than 40 countries; 12

**Exhibit 25: Loading a log truck**



<sup>79</sup> Washington State Potato Commission. *Spud Facts 2012*.

<sup>80</sup> Washington State Potato Commission. *Spud Facts 2012*.

<sup>81</sup> Washington Apple Commission. *International*. Retrieved as of November 2011 from:

<http://www.bestapples.com/international/index.aspx>

<sup>82</sup> USDA-NASS. *2011 Washington Annual Agricultural Bulletin*. Retrieved as of June 2012 from:

[http://www.nass.usda.gov/Statistics\\_by\\_State/Washington/Publications/Annual\\_Statistical\\_Bulletin/annual2010.pdf](http://www.nass.usda.gov/Statistics_by_State/Washington/Publications/Annual_Statistical_Bulletin/annual2010.pdf)

<sup>83</sup> US Department of Agriculture – ERS. 2010. *The U.S Produce Industry and Labor: Facing the Future in a Global Economy*. ERS Report 106, November 2010.

million cases were shipped in 2010 from a record harvest of 160,000 tons.<sup>84</sup>

Timber sales from tribal lands, such as those owned by the Confederated Tribes of the Colville Reservation and the Yakama Nation, have become an important industry in eastern Washington. Despite a large majority of the State's timber harvest occurring in western counties, just over 350 million board feet was harvested from eastern Washington private, state and federal lands in 2010. Stevens, Klickitat, and Pend Oreille Counties were the highest producers in the Columbia Basin and North Central Washington region, accounting for 67 percent of the total harvest from eastern counties.<sup>85</sup>

## **Central Puget Sound: Manufacturing, Construction, and Maritime Center**

In 2010 over 588,043 jobs in Central Puget Sound directly depended on the freight system to produce and ship goods: 170,949 in manufacturing, 269,236 wholesale trade, 56,608 transportation/utilities, 84,971 in construction, and 6,279 in agriculture.<sup>86</sup>

The Boeing Company, employing 84,000 statewide in early 2011, is Washington's largest manufacturer. Each job in the industry creates nearly three additional jobs throughout the economy, and therefore Boeing contributes to more than 250,000 jobs across the state. A total of 2,800 Boeing suppliers and vendors are located in Washington, and in 2010 Boeing purchases from Washington suppliers and vendors totaled nearly \$3.36 billion<sup>87</sup>.

Boeing's manufacturing supply chain covers the region, state, nation, and the globe. Its exports, though generally flown directly overseas from Boeing's assembly plants, lift Washington State from an 'average' exporting state to one of the highest rate of export value per citizen in the country. Boeing's customers span more than 90 countries, producing total revenue of \$60.9 billion in 2008. Seventy percent of revenue of Boeing's commercial planes is generated by sales to customers outside of the United States. In 2010, the Boeing Company delivered 462 airplanes to customers throughout the world, all of which were assembled in the company's plants in Renton and Everett, Washington. With 787 deliveries and production rate increases for 737s and 777s this number will grow in 2012 and beyond.

To manage such a production, Boeing maintains established manufacturing, service and technology partnerships around the world through contracts with 22,000 suppliers and partners. Exhibit 26 shows the distribution of aerospace suppliers by county and activity in Washington State.

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<sup>84</sup> Washington Wine Commission. *State Facts*. Retrieved as of June 2012 from:

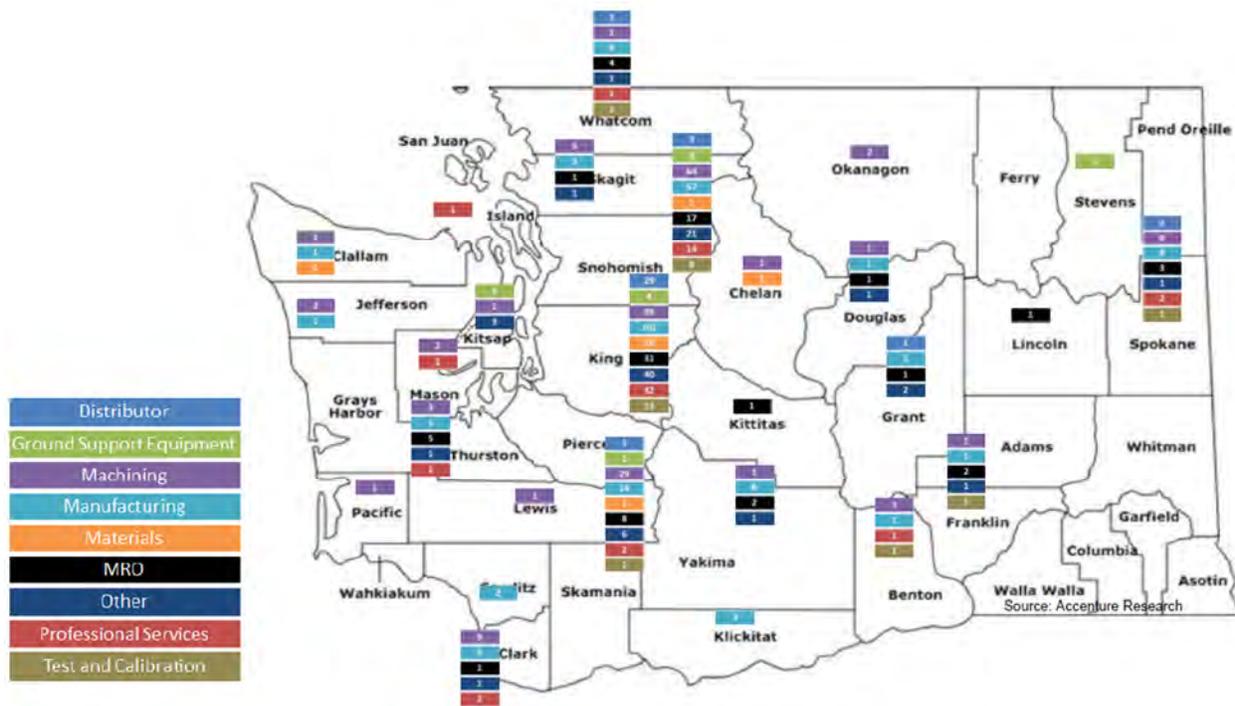
<http://www.washingtonwine.org/wine-101/state-facts/>

<sup>85</sup> Washington Department of Natural Resources. *Washington Timber Harvest 2009*. Retrieved as of November 2011 from: [http://www.dnr.wa.gov/Publications/obe\\_watimber\\_harvest\\_report\\_2009.pdf](http://www.dnr.wa.gov/Publications/obe_watimber_harvest_report_2009.pdf)

<sup>86</sup> Office of Financial Management. *2011 Washington State Data Book. Local Government and Special Districts*. Retrieved as of June 2012 from: <http://www.ofm.wa.gov/databook/>. Values include Island, King, Kitsap, Pierce, Snohomish, and Thurston Counties.

<sup>87</sup> Washington Aerospace Partnership. Aerospace competitiveness Study. November 15, 2011. Retrieved June 2012 from <http://www.washington-aerospace.com/study/Washington%20State%20Aerospace%20Partnership%20Competitiveness%20Report%20FINAL.pdf>

## Exhibit 26: Washington Aerospace Suppliers – by County and Activity



Source: Washington Aerospace Partnership. Aerospace competitiveness Study. November 15, 2011. Retrieved June 2012 from <http://www.washington-aerospace.com/study/Washington%20State%20Aerospace%20Partnership%20Competitiveness%20Report%20FINAL.pdf>

Boeing is greatly dependent on the central Puget Sound transportation system. Within their site services division alone, the company manages and maintains over 5,400 assets including everything from SUVs and limos, to buses and vans in support of product-buying customers and events. Passenger services in 2008 accounted for 4.6 million miles in support of freight movement between Boeing sites, pick-up service to/from local suppliers, airport transfer of freight, and aircraft fueling operations. These freight service fleets include semis, vans, trailers, fueling and straight trucks and specialized equipment.<sup>88</sup> According to Boeing, congestion is the greatest problem that must be taken into consideration for fleet support services. For a 75 mile trip from Frederickson to Everett, anywhere from 1.5 to 3 hours can be experienced.

The Central Puget Sound region also includes thousands of mid-size manufacturers that receive raw materials and ship finished goods to market. Aerospace subcontractors machine and bend high-tech metals; processed food companies package cookie and muffin mix, mints, and vitamins; various manufacturers mix printers inks and coatings, and form energy-efficient windows and composite decking for homes. In 2010, 2,232 manufacturing firms were doing business in King County, 762 in Snohomish County, and 598 in Pierce County.<sup>89</sup>

<sup>88</sup> Boeing Company. Presentation to the Regional Freight Mobility Roundtable (June 20, 2009).

<sup>89</sup> Office of Financial Management. 2011 Washington State Data Book. Local Government and Special Districts. Retrieved as of June 2012 from: <http://www.ofm.wa.gov/databook/>.

## **Central Puget Sound Maritime Sector**

Building on Central Puget Sound's natural advantages: deep water ports, fresh water berths, and a short all-water route to Alaska, and supported by a multi-modal freight system that converges in the urban area, the region has created a maritime industry that employed over 16,652 in King County in 2007. King County's maritime sector generated over \$5.6 billion in output in 2007, with total economic impact in reaching nearly \$10.4 billion when considering multiplier effects. The maritime sector includes fishing, water transportation, boat building, seafood processing and cold storage, marine construction, and water-dependent industries such as cement plants.<sup>90</sup>

## **Seattle: Home of the North Pacific Fishing Fleet**

Four of the top ten largest seafood companies in North America are headquartered in Central Puget Sound, with combined revenues of over \$3.5 billion in 2009, according to Seafood Business Magazine. These companies include the two largest in Trident Seafoods and Tri Marine International, both of whom reported in excess of a billion in sales. Trident Seafoods is a major actor in the Alaskan seafood market. It maintains a fishing and at-sea-processor fleet of more than 35 vessels in addition to its 17 land-based processing facilities in the Northwest. Trident operates plants all along the Puget sound, from Bellingham, south to the Tacoma Shipyard.

Fish products exported out of the Seattle District accounted for roughly 40 percent of the Pacific Region's \$3.2 billion in exports in 2010.<sup>91</sup> Anywhere from 200 to 270 fishing and processing vessels may be berthed at Fisherman's Terminal in a particular month.

Before every fishing season, vessel owners repair and restock their boats with fuel, groceries, bait, and fishing gear that comes by truck in the local distribution system. Upon their return, the catch is typically trucked to a cold storage facility, trucked to a secondary processing center, trucked to another cold storage facility, and then trucked to its final destination.

Exhibit 27 shows the location of Seattle maritime cluster firms. They are highly concentrated in the Ballard, Fremont, and Magnolia areas of Northwest Seattle, along the waterfront in downtown Seattle, and in the Duwamish and SODO districts of South Seattle. Seattle's maritime cluster directly supported 7,767 boat building, repair, and waterborne transportation jobs according to an updated University of Washington study commissioned by the city of Seattle Office of Economic Development. Seafood processing employs 3,655 in King County. The total employment impact of these industries exceeds 35,000. In Seattle alone, direct fishing output (equivalent to revenues) was \$1.1 billion, shipbuilding \$354 million, water transportation \$2 billion, seafood processing \$1.4 billion, cruise ships \$145 million.<sup>92</sup>

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<sup>90</sup> Sommers, Paul and Wenzl, Andrew (May 2009). *Seattle's Maritime Cluster*. Retrieved as of November 2011 from: [http://www.seattle.gov/economicdevelopment/pdf\\_files/Seattle%20Maritime%20Study%20-%202009.pdf](http://www.seattle.gov/economicdevelopment/pdf_files/Seattle%20Maritime%20Study%20-%202009.pdf)

<sup>91</sup> NOAA Fisheries: Office of Science and Technology. *Annual Trade Data by Product through U.S. Customs Districts*. Retrieved as of December 2011 from: [http://www.st.nmfs.noaa.gov/st1/trade/annual\\_data/TradeDataAnnualDistrictAllProducts.html](http://www.st.nmfs.noaa.gov/st1/trade/annual_data/TradeDataAnnualDistrictAllProducts.html).

<sup>92</sup> Sommers, Paul and Wenzl, Andrew (May 2009). *Seattle's Maritime Cluster*. Retrieved as of November 2011 from: [http://www.seattle.gov/economicdevelopment/pdf\\_files/Seattle%20Maritime%20Study%20-%202009.pdf](http://www.seattle.gov/economicdevelopment/pdf_files/Seattle%20Maritime%20Study%20-%202009.pdf)

## Exhibit 27: Seattle Maritime Cluster Firms in 2008



Source: Sommers, Paul and Wenzl, Andrew (May 2009). *Seattle's Maritime Cluster*. Prepared for the Seattle Office of Economic Development.

### Replacing the Alaskan Way Viaduct

Seismically vulnerable and approaching the end of its useful life, the Alaskan Way Viaduct (SR 99) has been slated for replacement. The replacement, approved in the summer of 2011, aims to increase public safety and provide essential vehicle capacity to and through downtown Seattle. The viaduct has served as a main north-south route for many commuters, industries, and particularly for the Port of Seattle. A major portion of the reconstruction will be the creation of a bored tunnel under downtown Seattle that then reconnects to the street grid at either end. The viaduct along Seattle's waterfront will be removed; however, operation of SR 99 will remain viable throughout the tunnel creation until completion in late 2015.<sup>93</sup>

### Spokane Region: Eastside Center of Manufacturing and Commerce

In 2010, 61,871 jobs in the Spokane region are directly dependent on the freight system: 14,117 in manufacturing, 33,631 in wholesale and retail trade, 8,849 in construction, 4,767 in transportation and warehousing, and 507 in the agricultural, forestry, and fishing sector. The regional health care center receives vital supplies via the I-90 corridor.<sup>94</sup>

<sup>93</sup> WSDOT. *SR 99 – Tunnel Project*. Retrieved as of December 2011 from: <http://www.wsdot.wa.gov/Projects/SR99/Tunnel/>.

<sup>94</sup> Office of Financial Management. *2011 Washington State Data Book. Local Government and Special Districts*. Retrieved as of June 2012 from: <http://www.ofm.wa.gov/databook/>.

Spokane County serves as the regional hub for health care and specialized health services, retail, education, business and industry, and cultural activities in Inland Northwest. To the east of the City Spokane in Orchard Park and Liberty Lake, a high technology manufacturing cluster has developed. Other manufacturing firms have concentrated east near Liberty Lake and to the west near US 2 and I-90.

Spokane's manufacturing sector includes sectors producing aluminum casting, metal products for semiconductors, windows and cabinets for new homes, rugged laptops for military and telecom workers in the field; colorful dinnerware; plastic and metal parts for complex machinery and equipment; advanced medical devices; aircraft brakes, and engines for the aerospace industry; salsa, sausage, soups, and other processed foods for homes and restaurants; and much more. The Spokane area manufacturing sector is home to the Inland Northwest Aerospace Consortium (INWAC) and its more than 60 manufacturers, distributors and organizations who contribute to the statewide aerospace industry.

The largest import in Spokane County is lumber or wood products, which totaled 2.3 million tons in 2007. But it is expected to decrease by 37 percent over the next 20 years to 1.5 million tons. The second largest import is petroleum or coal products, which totaled more than 1.2 million tons in 2007. This product category is projected to grow by 17 percent to 1.4 million tons in 2027. The county's next largest exports in 2007 were chemicals or allied products, food or kindred products, clay, concrete, glass or stone products. Spokane County's largest export in 2007 was lumber or wood products, which exported more than 1.4 million tons. The county's next largest exports in 2007 were food or kindred products, chemicals or allied products, clay, concrete, glass or stone, and farm products. By 2027, the county's top five exports are all projected to decrease<sup>95</sup>.

## **Vancouver: Southwest Washington's Metropolitan Area**

In the Vancouver metro region 69,535 jobs depend on the freight system: 20,262 in manufacturing, 29,737 wholesale/retail trade, 10,819 construction, 5,868 transportation/warehousing, and 2,849 agriculture.<sup>96</sup>

Clark County's (433,418 population, 2011<sup>97</sup>) economy is integrally linked with that of the larger Portland-Vancouver metropolitan (2.12 million population, 2011<sup>98</sup>) area. Downtown Vancouver and Portland are just nine miles apart, yet separated by the Columbia River. The Vancouver/Portland metro region is connected by two bridges over the Columbia River on I-5 and I-205, while comparable metro areas such as Kansas City (pop. 2.03 million) has ten bridges and Cincinnati (pop. 2.14 million) has seven river bridges.

The ports along the Columbia River in Clark County are dominated by dry-bulk and break-bulk exports and are a significant intermodal point for truck, rail and barge. Congestion, travel-time reliability and need for

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<sup>95</sup> WilburSmith Associates in association with Halcrow and HNTB. Study Area Profile and Technology Assets. April 2010.

<sup>96</sup> Office of Financial Management. *2011 Washington State Data Book. Local Government and Special Districts*. Retrieved as of June 2012 from: <http://www.ofm.wa.gov/databook/>. Includes Clark, Cowlitz, Lewis, and Skamania Counties.

<sup>97</sup> U.S. Census Bureau. *State and County QuickFacts, 2011*. Retrieved as of June 2012 from: <http://quickfacts.census.gov/qfd/states/53/53011.html>

<sup>98</sup> U.S. Census Bureau. *State and County QuickFacts, 2011*. Retrieved as of June 2012 from: <http://quickfacts.census.gov/qfd/index.html>. The Portland Vancouver Metropolitan area includes the Oregon Counties of: Clackamas, Columbia, Multnomah, Washington, and Yamhill; and the Washington Counties of Clark and Skamania.

additional capacity have been identified as key issues for truckers in the county. Additional concerns for rail include congestion, port access and mainline capacity.

Beginning in 2007, the Port of Vancouver began a ten year concerted effort to create jobs and generate revenue by investing in freight rail infrastructure. The West Vancouver Freight Access (WFVA) project aims to reduce freight movement inhibitors not only within the port, but also along the BNSF Railway and UP Railroad mainlines. The project expects to reduce delays by as much as 40 percent. To date, the project has completed a unit-train facility at the newly developed Terminal 5, as well as rail improvement near the city of Vancouver's waterfront redevelopment. The completion of these projects is anticipated to yield 1,000 new, long term jobs. In the interim, 1,900 jobs are involved in the construction of the projects.<sup>99</sup>

Most of the freight-related jobs in Clark County are located within five miles of the Columbia River, nearly 30 percent in the urbanized area of Clark County in the vicinity of I-5, I-205, and the Columbia River. There are also pockets north and south of this area which are major centers of freight-related employment. Clark County's freight dependent sectors have a direct impact of over 66,000 jobs, producing an income of \$3.2 billion. When including indirect and induced effects, these sectors impact over 130,000 jobs. Southwest Washington hosts several freight intensive industries. Five sectors account for half of the freight movement in the Portland-Vancouver area. These sectors are petroleum products, minerals, food and beverages, wood products, and grain. The majority of freight moving in Clark County—55.2 percent by ton—is carried by truck. The remainder moves by ocean (18.3 percent), rail (17.3 percent), barge (7.0 percent), pipeline (2.0 percent), and air (0.1 percent). The most heavily traveled truck routes by shippers and motor carriers in Clark County are I-5, I-205, Mill Plain, Fourth Plain, SR 14, and I-84. Interstate bridges are very critical and used by 90 percent of shippers and 100 percent of motor carriers.<sup>100</sup>

## Northwest Washington

In 2008, 50,787 jobs in northwest Washington depend on the freight system: 12,598 in manufacturing, 20,858 wholesale and retail trade, 8,007 in construction, 3,387 in the transportation/utilities sector, and 5,937 in agriculture<sup>101</sup>.

Washington's 151 million cubic feet of public refrigerated warehouse space ranks sixth in the nation.<sup>102</sup> Bellingham Cold Storage (BCS) is the largest portside cold storage facility on the West Coast and the largest cold storage in Washington State, with one million square feet of refrigeration and freezer space. More than one billion pounds of product flow in and out of BCS annually, and the velocity of those moves has dramatically increased with new enabling technologies. BCS has a 900-foot deep-water dock, and in the fall 2011 the Port of Bellingham began improvement of its Squalicum Harbor's Gate 3 to increase the depth of several mooring areas. Additionally, BCS maintains 50 truck loading bays and 13 railcar loading stations.

Northwest Washington not only has a strong domestic manufacturing sector, it has unique transport issues related to the Canadian – U.S. border. Between 1994 and 2000, U.S. trade with Canada increased from \$243

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<sup>99</sup> Port of Vancouver. *West Vancouver Freight Access Project*. Retrieved as of December 2011 from: <http://www.portvanusa.com/industrial-property/west-vancouver-freight-access-project> .

<sup>100</sup> Southwest Washington Regional Transportation Council. *Clark County Freight Mobility Study, Summary report*. (December 2010). Retrieved as of November 2011 from: <http://www.rtc.wa.gov/studies/freight/> .

<sup>101</sup> Office of Financial Management. *2011 Washington State Data Book. Local Government and Special Districts*. Retrieved as of June 2012 from: <http://www.ofm.wa.gov/databook/>. Includes San Juan, Skagit, and Whatcom Counties.

<sup>102</sup> USDA. *Capacity of Refrigerated Warehouses 2009 Summary, (January 2010)*. Retrieved as of November 2011 from: <http://usda.mannlib.cornell.edu/usda/current/CapaRefrWa/CapaRefrWa-01-28-2010.pdf>

billion to \$406 billion, an average annual growth rate of 8.9 percent. Trade continued to increase through 2008, reaching \$596 billion before falling back to \$430 billion in 2009 and \$525 billion in 2010, and topped \$596 million in 2011.<sup>103</sup> Following similar trends, truck traffic across the Washington – British Columbia border has continued to grow since the late 1990s. In 2000 trade via truck was valued at \$6.68 billion. This trade mode increased to \$10.1 billion in 2008, dropping back to \$8.32 in 2009 and \$9.37 billion in 2010, and topped \$10.3 billion in 2011.<sup>104</sup>

## Coastal Counties: Forestry and Manufacturing

In 2010, 24,527 jobs in Jefferson, Clallam, Grays Harbor, Mason, Pacific, and Wahkiakum Counties were in freight-dependent industries: 7,239 in manufacturing, 2,918 in construction, 1,313 in the transportation and utilities sector, 2,563 in agriculture and forestry, and 10,494 wholesale/retail trade.<sup>105</sup> Seventy-one percent of Mason County's total manufacturing employment was in the forest products sector in 2008, as was 48 percent in Grays Harbor County.<sup>106</sup>

Of Washington's 43 million acres, approximately 21 million are forested<sup>107</sup>. Over 90 percent of Pacific County is in forestland. Over 88 percent of Grays Harbor County's land is in renewable forests; timber harvests in the two counties combine annually to produce over 500 million board feet. The whole Coastal Counties region produced over 726 million board feet in 2010.<sup>108</sup>

Resource-based industries, such as forestry and agriculture, rely heavily on county roads to move product to highways and on to market. Much of the log truck operations in Washington is characterized by small, independent operators.

Forty-three percent of Washington's forests are privately owned; 31 percent of these lands are managed by the forest products industry for timber production. These lands account for 67 percent of the timber harvested in the state in 2010; federal timber harvests currently account for only four percent of Washington's annual harvest of approximately 2.7 billion board feet.

The forest industry in Washington is the second largest in the nation, behind Oregon, with about ten percent of U.S. forestry employment. Employment in forest products industries declined in both Washington, by 2,200 jobs, and Oregon, by 2,100 jobs, in 2010 from 2009 numbers. Employment in forest products industries in Washington has steadily declined in the 21<sup>st</sup> century. In 2000, 49,000 jobs were supported by lumber and wood products as well as paper and allied products. In 2010, employment has dropped to roughly 26,100.

During the last decade, Washington lumber production has declined from nearly 4.2 billion board feet in 2000, to about 2.7 billion in 2010. Washington maintains about 10 percent of the nation's total softwood

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<sup>103</sup> BTS. *North American Transborder freight Data*. Retrieved as of November 2011 from:

[http://www.bts.gov/programs/international/transborder/TBDR\\_QA.html](http://www.bts.gov/programs/international/transborder/TBDR_QA.html). Data aggregated on all U.S. States, all Ports, and all Modes.

<sup>104</sup> BTS. *North American Transborder freight Data*. Retrieved as of November 2011 from:

[http://www.bts.gov/programs/international/transborder/TBDR\\_QA.html](http://www.bts.gov/programs/international/transborder/TBDR_QA.html). Data aggregated at the state level by truck.

<sup>105</sup> Office of Financial Management. *2009 Washington State Data Book. Local Government and Special Districts*. Retrieved as of November 2011 from: <http://www.ofm.wa.gov/databook/>. Includes Clark, Cowlitz, Lewis, and Skamania Counties.

<sup>106</sup> U.S. Census Bureau. *2008 County Business Patterns (NAICS)*. Retrieved as of November 2011 from:

<http://censtats.census.gov/cgi-bin/cbpnaic/cbpdet1.pl>.

<sup>107</sup> Washington's Forests, Timber Supply, and Forest-related Industries. Retrieved as of June 2012 from:

[http://www.dnr.wa.gov/Publications/em\\_fwfeconomiclow1.pdf](http://www.dnr.wa.gov/Publications/em_fwfeconomiclow1.pdf)

<sup>108</sup> Washington Department of Natural Resources. *Washington Timber Harvest 2009*. Retrieved as of November 2011 from: [http://www.dnr.wa.gov/Publications/obe\\_watimber\\_harvest\\_report\\_2009.pdf](http://www.dnr.wa.gov/Publications/obe_watimber_harvest_report_2009.pdf)

lumber production. Over 11 billion board feet of softwood lumber was harvested in the Western United States in 2010, 25 billion nationwide. Softwood log exports from the Seattle and Columbia-Snake customs districts has remained relatively stable over the last decade at about 640 million board feet; however, the Pacific Northwest Research Station's Resource Bulletin (PNW-RB-260) shows a marked increase to 1.1 billion board feet from the two districts in 2010. All lumber product prices were up in 2010, more than 37 percent higher than 2009. Lumber exports from the northwest were also up in 2010 from 2009 volumes, 542 versus 302 million board feet.

Plywood producers exported nearly 220,000 square feet of material from the Seattle customs district in 2010, 80 percent of which came from softwood production at an average value of \$45,253 per thousand square feet.

Large volumes of lumber imports coming from Canada, Europe, and South America affect Washington lumber producers and freight patterns. The Seattle customs district imported 1.1 billion board feet of lumber in 2010, mostly from Canadian production.<sup>109</sup>

In recent years, the state of Washington has demonstrated interest in increased promotion of Green Jobs. In 2009 the state legislature enacted the Evergreen Jobs Act (ESSHB 2227), establishing a goal of 15,000 new green jobs by 2020. Green Jobs specifically refer to those engaged in increasing energy efficiency, producing renewable energy, preventing and reducing environmental pollution, and providing mitigation or cleanup of environmental pollution. In the Legislature's follow up survey to the Jobs Act, the employment security department found that the number of green jobs identified by employers is growing and that green jobs exist in virtually every industry across the state.<sup>110</sup>

In the Coastal Counties, several green projects have been implemented or are in the process of being implemented. One such project is the Biomass Cogeneration facility Project by Nippon Paper Industries in Port Angeles. The Biomass facility will replace the existing boiler currently fueled by oil and biomass. The new boiler will generate steam for paper production, as well as use excess steam to power a turbine generator to create electrical power. Excess generated power will be sold and transmitted over the Bonneville Power Administration (BPA) power grid. This electrical production will help meet new state requirements for renewable energy sources (Initiative 937) of 15 percent by 2020. Nippon's long-term objective in this endeavor is to create a saleable, renewable energy that also retains and creates regional and mill jobs. The new facility will impact not only mill jobs, but also that of local truck operators. According to the released Environmental Impacts Statements, the new facility will increase the current 20 to 25 trips per day onto the facility for fuel delivery to about 45 truck trips per day, nearly double. These deliveries over forest biomass that are byproducts of current forest management activities are expected to occur throughout the day.<sup>111</sup> Three other similar biomass projects supported by the Department of Natural Resources' (DNR) Forest Biomass Initiative are expected throughout the state in the north central, south central, and northeast regions of the state.<sup>112</sup>

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<sup>109</sup> USDA – Forest Service. Production, Prices, Employment, and Trade in Northwest Forest Industries, All Quarters 2010. Retrieved as of December 2011 from: [http://www.fs.fed.us/pnw/pubs/pnw\\_rb260.pdf](http://www.fs.fed.us/pnw/pubs/pnw_rb260.pdf).

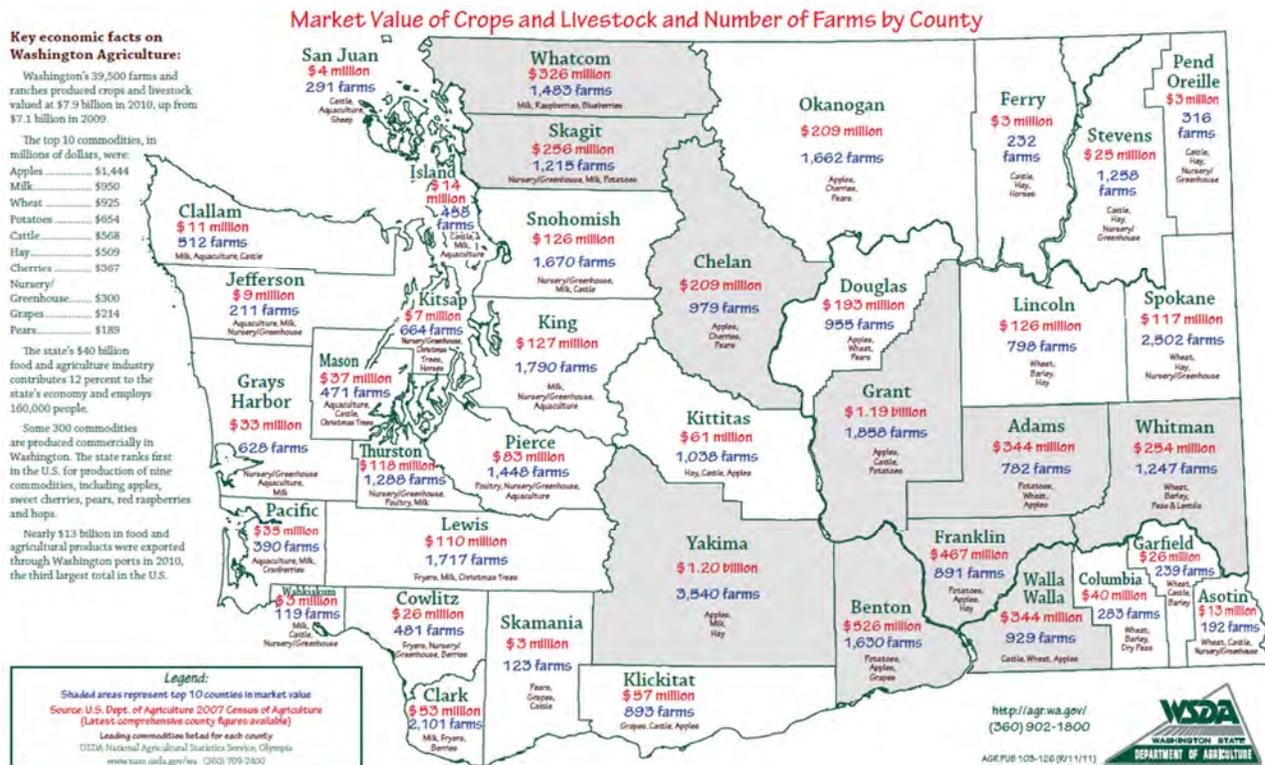
<sup>110</sup> Washington State department of Commerce. *Evergreen Jobs Initiative: Recovery Act Funds in Washington*. Retrieved as of December 2011 from: <http://www.wtb.wa.gov/EvergreenJobsTeam.asp>.

<sup>111</sup> City of Port Angeles. *Nippon Paper Industries USA Co., Ltd. Biomass Cogeneration Facility Project. Final SEPA Environmental Impact Statement*. Retrieved as of December 2011 from: <http://www.cityofpa.us/PDFs/PermitsPlanning/NipponDEIS.pdf>.

<sup>112</sup> Washington State Department of Natural Resources. *Forest Biomass Initiative*. Retrieved as of December 2011 from: [http://www.dnr.wa.gov/Publications/em\\_forest\\_biomass\\_brief\\_1\\_2010.pdf](http://www.dnr.wa.gov/Publications/em_forest_biomass_brief_1_2010.pdf).

The Coastal Counties are also important for specialty agricultural crops including nursery stock, Christmas trees, cranberries, and aquaculture, as well as milk and cattle production. The region supports over 2300 farms bringing in over \$125 million to the state's economy for county specific values (exhibit 28).<sup>113</sup> Food processing is also a significant manufacturing activity in the region, with the exception of Wahkiakum County. All of these products must reach the I-5 corridor for export markets.

**Exhibit 28: Washington State Agriculture Production by County, 2007**



Data source: Washington State Department of Agriculture. Top Crops & Food Processing Industries. Retrieved as of June 2012 from: [http://agr.wa.gov/aginwa/crop\\_maps.aspx](http://agr.wa.gov/aginwa/crop_maps.aspx)

<sup>113</sup> Washington State Department of Agriculture. *Agriculture-A Cornerstone of Washington's Economy*. Retrieved as of November 2011 from: <http://agr.wa.gov/AgInWa/docs/126-CropProductionMap11-11.pdf>.