
Freight Modes

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Freight Transportation Overview

As one of the nation's most trade dependent states per capita, Washington relies on an efficient freight transportation network. In 2013, Washington exported merchandise worth \$82 billion; it is estimated that \$37 million of freight moves on Washington roadways every hour of the day. Goods are shipped into, out of and around Washington by truck, rail, air, barge, and water.

In 2012, there were 1.23 million Washington jobs in freight-dependent industries (including wholesale, retail, manufacturing, construction, transportation, and agriculture/timber and wood products).

In 2012, total imports and exports were valued at \$123.2 billion and gross business income for freight dependent industries totaled \$450 billion.

Washington State's freight system has three components:

- **Global Gateway.** As a gateway state, Washington connects Asian trade to the U.S. economy, Alaska to the Lower 48 states, and Canada to the U.S. West Coast. Washington is the fifth largest exporting state in the country. Imports support U.S. manufacturers and provide goods to consumers. Goods coming into Washington by container ship are often headed to the Midwest and East Coast.
- **Made in Washington.** Washington's manufacturers and farmers rely on the freight system to ship Washington-made products to local customers, to U.S. markets in California and on the East Coast, and worldwide.
- **Delivering goods.** Washington's local distribution system is a fundamental local utility serving the retail, wholesale land business service sectors, and producing up to 80% of all truck trips in metropolitan areas.

Global Gateway

Many of the state's key international trading partners are in Asia. Washington's 2012 exports to Asia are valued at over \$37 billion. The Ports of Tacoma and Seattle handle the majority of Washington's international container exports and imports. The Ports of Vancouver USA, Kalama, Longview, Grays Harbor, Pasco, and Everett handle the majority of bulk goods.

Sea-Tac International Airport is the third largest airport for international cargo on the West Coast (excluding Alaska). The airport offers daily, non-stop service to 17 international destinations.

Alaska and Canada are major trading partners. 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. In 2011, Canadian goods valued at more than \$14.4 billion entered the U.S. economy through Washington, and American goods valued at \$8.4 billion entered Canada through Washington.

The U.S. military also depends on Washington's freight system to move cargo for national defense. Military bases employ more than 91,000 people in Snohomish, King, Pierce, and Kitsap counties.

Made in Washington

Some critical supply chains in Washington State include those supporting aerospace manufacturing, and the major agricultural products: apples, wheat and potatoes. A supply chain is defined as the movement of materials and information as they flow from the production source to the end consumer.

Aerospace manufacturing produced \$51.2 billion of the state's \$155 billion in gross manufacturing business income in 2012. While it has a global supply chain, many of its suppliers are in Washington State. To support its assembly plants in Everett and Renton, Boeing's supply chain requires an efficient Central Puget Sound highway network.

Apples are one of the state's top agricultural commodities by value, estimated at \$1.83 billion in 2011. In 2012, approximately 130 million, 40-pound boxes were harvested from Washington apple orchards. They then travel by truck in bins to processing facilities. After processing, 10 to 15% travel by rail to the Midwest and East coast. The remaining 85 to 90% travel by truck to other locations inside and outside of Washington. Approximately 38 million boxes were exported, including 10 million boxes exported to Mexico and 7 million to Canada by truck. The remaining 21 million boxes were trucked to container ports in the Puget Sound.

Washington was the nation's fourth largest **wheat** producer in 2011, producing 167.8 million bushels of wheat on 2.3 million acres. Farmers take harvested wheat by grain trucks to on-farm storage or nearby commercial grain elevations. After the wheat is sold it is transferred by truck to regional rail or barge-loading facilities. Some wheat travels by rail to coastal grain terminals, while some travels to Portland by barge from intermodal facilities along the Columbia-Snake River system. Nearly 74% of the down-river barge traffic on the Columbia-Snake River system is wheat. From seaport terminals, grain is loaded onto ocean freighters and exported around the world.

Potatoes are another top agricultural commodity, valued at \$771 million in 2011. Nearly 10 billion pounds are grown in three regions: the lower Columbia basin, the upper Columbia basin, and the Skagit Valley. Most move from fields to processing facilities by truck; after processing, 76% travel by truck to their final destinations; 12% travel by rail; 9% by container truck to an ocean port, and 2% by repacked truck to a railcar.

Delivering Goods

The freight transportation system supports retail/wholesale supply chains for consumer goods purchased in stores all across the state. Both goods produced in Washington and imported goods typically are consolidated in a distribution center before moving to their final destination. Approximately 735,000 employees work in the retail/whole sector in Washington, which produced over \$247 billion in gross business income in 2012.

ON THE WEB

Washington State Freight Advisory Committee, [Washington State Freight Trends and Policy Recommendations, May, 2014](#)

WSDOT Freight Systems Division, [Washington State Freight Mobility Plan, 2014](#)

[Gray Notebook Index](#) on Freight subjects

Trucking

BACKGROUND

- In Washington State, a total of 372.2 million tons of freight worth \$342.4 billion was moved by truck in 2012, accounting for 64% of total freight shipment by weight in WA. (FHWA, [Freight Analysis Framework](#)).
- Of the 1.45 million trucks (of all types) registered in Washington State in FY 2013, almost 231,000 carry freight for business or commercial purposes.
- In 2012, there were an estimated 1,788 trucking firms in Washington State, producing \$4.9 billion in gross business income.
- Trucking relies on highway and roads for long-distance transport, as well as for urban goods “last mile” delivery (i.e. transport from warehouses or intermodal freight terminals to final destinations). There has been a significant increase in short truck trips in urban areas due to online groceries and other e-commerce, trips to and from distribution centers, and point to point shipments.
- Truck-related jobs account for about 8% of Washington’s workforce. Many local employers rely heavily on trucks to move goods. Some examples:
 - Boeing directly employs over 300 drivers who drive over 8.5 million miles a year in the Puget Sound Region (does not include vendors). Boeing moves parts by water, rail and air, but all these modes require truck pick-ups.
 - PACCAR relies primarily on trucks for freight movement and moves less than 15% of its parts by rail.
 - SuperValue operates a 500,000 square foot grocery warehouse in Tacoma that makes deliveries to six states and overseas military bases.
 - Costco has 29 warehouses in Washington. In 2012, they had 130,000 forty-foot equivalent truckloads inbound to the state.

GOVERNANCE

- The Washington State Patrol enforces safety requirements and overweight limits on trucks ([Chapter 43.43 RCW](#)).
- The Department of Licensing administers the Prorate/International Registration Plan (Chapters [46.85](#) and [46.87](#) RCW), an interstate compact that allows payment of license fees based on fleet miles operated in various jurisdictions. The license plate issued through this plan allows users to operate through other member jurisdictions and pay fees through their base jurisdiction.
- WSDOT provides overweight and overheight vehicle permits ([Chapter 46.44 RCW](#)) and weigh station bypass capability via the Commercial Vehicle Information Systems and Networks (CVISN) program.

FUNDING

- Several user fees are imposed for highway construction, maintenance, and safety:
 - Additional tonnage permits (RCW [46.44.095](#))
 - Combined licensing fees (RCW [46.16A](#), [46.68.035](#))
 - Trailer fees (RCW [46.16A](#))
 - Monthly tonnage permits (RCW [46.16A](#))
 - Safety Inspection Fee ([RCW 46.32.080](#))

ON THE WEB

[WSDOT Commercial Vehicle Services](#)

[WSP's Commercial Vehicle Enforcement Bureau](#)

Freight Rail

BACKGROUND

In Washington State, rail system moved a total of 103.3 million tons of freight in 2012 (2012 Surface Transportation Board Carload Waybill Data). Railroads account for 40% of intercity freight volume. Nationwide, rail moves about 13% of the nation's freight tonnage.

The major rail corridors in Washington are:

- The north-south corridor that parallels I-5 from the Columbia River to Vancouver, BC
- The Columbia River Gorge route from Vancouver, WA to Pasco, Spokane and eastward
- Stevens Pass running from Everett to Spokane and east
- Stampede Pass from Auburn, Pasco, Spokane and east

Several systems operate on these lines, including freight, national and regional passenger rail, and local commuter rail services. The Surface Transportation Board classifies railroad carriers based on operating revenue and function. Each class of railroad is subject to a different degree of federal safety and labor regulation.

- **Class I Railroads.** Class I railroads are the largest rail carriers. There are two Class I railroads operating in Washington State: the BNSF Railway Company and the Union Pacific (UP) Railroad.
- **Class II Railroads.** There is one Class II railroad (Montana Rail Link) that operates in Washington State, but it does not own any railroad track in this state.
- **Class III Railroads (Short-lines).** There are 24 short-line railroads and switching railroads operating within the state. These railroads serve local shippers and communities with links to the large Class I railroads. WSDOT is currently preparing a Short-line Rail Inventory & Needs Assessment to be completed June 30, 2015. The following rail companies operate short-line railroads in Washington:
 - *Eastern Washington* – Great Northwest, Palouse River and Coulee City, Kettle Falls International, Pend Oreille Valley, Eastern Washington Gateway, and Washington & Idaho;
 - *Central Washington* – Tri-City and Olympia, Columbia River and Cascade, Columbia Basin, and Central Washington;
 - *Western Washington* – Columbia and Cowlitz, Tacoma Rail, Puget Sound and Pacific, Portland Vancouver Junction, Meeker Southern, Ballard Terminal, and several switching railroads.

GOVERNANCE

Railroads have traditionally been privately owned. Public ownership of short-line infrastructure has grown over the last several decades. The Palouse River and Coulee City, Eastern Washington Gateway, Washington & Idaho, Tri-City and Olympia, Central Washington, Pend Oreille Valley, and Tacoma Rail operate on rail infrastructure owned by the state, a county, a city, or a Port Authority.

The USDOT Surface Transportation Board, the successor agency to the Interstate Commerce Commission, has broad economic regulatory oversight over railroads, including rates, service, the construction, acquisition and abandonment of rail lines, carrier mergers and interchange of traffic among carriers.

The federal agency with primary responsibility for oversight of safety and security of railroads is the Federal Railroad Administration (FRA, also part of USDOT). Oversight of hazardous materials is jointly performed by FRA and the Pipeline and Hazardous Materials Safety Administration (PHMSA). A limited amount of rail safety regulation is delegated to the Washington Utilities and Transportation Commission.

[WSDOT's Freight and Rail Operations Division](#) is responsible for developing and implementing Washington's State Rail Plan and programs.

FUNDING

State funding was appropriated for the Freight Rail Capital Program in the 2014 Supplemental Budget at the following levels:

- \$4.4 million Multimodal Transportation Account —State;
- \$0.7 million Multimodal Transportation Account – Federal and Local;
- \$1.0 million Essential Rail Assistance Account--State; and
- \$9.2 million Transportation Infrastructure Account -- State.

WSDOT FREIGHT RAIL PROGRAMS

Freight Rail Assistance Program. This is a grant program available to both public and private sector rail applicants. Projects must pass certain evaluation criteria and be shown to maintain or improve the freight rail system in the state and benefit the state's interests.

Freight Rail Investment Bank Program. This is a loan program available to the public sector only (the state may not lend to the private sector). This program is intended for small projects (no more than \$250,000) or as a small part of a larger project, where state funds would enable the project to be completed. A 20 percent local match is required and the project must pass a cost/benefit analysis.

Washington State Grain Train. Operations of the Grain Train began in 1994 and the program has grown to a fleet of 100 grain cars. The state owns these grain cars and charges a fee for use which is deposited into the Grain Train Revolving Fund. Funds are used to manage, operate and sustain the program, including periodic replacement of the fleet. The program is financially self-sustaining and operates without taxpayer subsidy.

Produce Rail Car Program. Enacted in 2003, this program was modeled on the Grain Train program. Funded by \$2 million in federal funds, the program provided refrigerated rail cars for Washington farmers and agricultural shippers. Between 2005 and August 2014, a private company, Cold Train, offered a similar shipping service. The state program was suspended in 2012 but is now being reviewed in light of the cancellation of [Cold Train](#).

PCC Rail System. The Palouse River and Coulee City Rail System (PCC) is owned by the state. WSDOT contracts for operations and maintenance of the system with independent, private rail operators. This 297-mile rail line is made up of three separate branch lines spanning four eastern Washington counties. The PCC Rail System provides service to grain cooperatives and other shippers as well as manufacturers and farmers. Wheat, barley, peas, lentils, fertilizer, and lumber are among the products transported on the PCC. Washington's farmers shipped 20 percent of their wheat in 2013 on the PCC, removing close to 37,000 truckloads from state roadways.

In the 2013-2015 biennium, \$2.8 million has been appropriated for the PCC. [RCW 47.76.290](#) allows funds collected from leases or sales of property on the PCC line to be reinvested in the PCC line. In addition, [RCW 47.76.360](#) allows any funds collected through the grain train program, but deemed in excess of the needs of the grain train, to be invested in the PCC line.

Individual Capital Projects. Projects are added to the transportation budget as funds allow and are listed in the project list that accompanies the adopted transportation budget.

ON THE WEB

[WSDOT's Freight and Rail Operations Division](#)

The [State Rail Plan](#) was completed in 2013 and incorporates both passenger and freight rail into one plan.

Commercial Shipping (Waterborne)

BACKGROUND

There are 11 deep-draft public ports in Washington with commercial marine terminals, and six shallow-draft public marine terminals. There are shallow-draft ports frequently used for fish landings at the Ports of Willapa Harbor, Peninsula, Ilwaco, and Chinook. In addition, there are many privately-owned marine terminal facilities throughout the state.

Washington has seven deep-draft ports in Puget Sound, one on the Pacific Coast and three deep-draft ports on the Columbia River. In addition, there are seven inland ports on the Columbia-Snake Rivers that are served by barge.

Crude oil was the largest volume waterborne commodity imported into Washington in 2012, 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.

The ports ship cargo in containers, bulk (unpacked bulk cargo includes grains, ore, and cement transported in cargo holds) and break-bulk (non-containerized cargo transported as individual pieces, such as cars).

International trade moving through the ports of Tacoma and Seattle totaled about \$76 billion in 2013. Imports accounted for 77 percent of the value of that international trade and exports accounted for 13 percent of waterborne international trade.

In 2013 Washington's two largest seaports, the Port of Tacoma and the Port of Seattle, together 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 3.46 million twenty-foot equivalent units (TEUs), which is equal to 7.7 percent of all U.S. containerized exports and import traffic.

The Columbia-Snake River System stretches 365 miles inland from the Pacific Ocean, and plays a critical role in transporting agricultural, potash, wind turbine components, and other products between Eastern Washington and the Lower Columbia Seaports, as well as between Eastern Washington and the Midwest. More than 35 different commodities move up and down the river system, with about three times as much headed for export as compared to import.

Columbia River seaports, especially the Ports of Vancouver, Kalama, and Longview, play major roles in the movement of exported agricultural products, including being the largest grain export gateway for wheat and second largest soybean export gateway. In 2011, these three ports had 861 vessel calls and shipped 20.2 million metric tons of commodities between them.

Major Ports Serving Waterborne Trade

<p><u>Columbia Deep-Draft Ports</u></p>	<p><u>Pacific Coast Ports</u></p>
<p>Port of Kalama</p>	<p>Port of Grays Harbor</p>
<p>Port of Longview</p>	
<p>Port of Vancouver</p>	<p><u>Puget Sound Ports</u></p>
<p></p>	<p>Port of Anacortes</p>
<p><u>Columbia/Snake River Ports</u></p>	<p>Port of Bellingham</p>
<p>Port of Benton</p>	<p>Port of Everett</p>
<p>Port of Clarkston</p>	<p>Port of Olympia</p>
<p>Port of Kennewick</p>	<p>Port of Port Angeles</p>
<p>Port of Klickitat</p>	<p>Port of Seattle</p>
<p>Port of Pasco</p>	<p>Port of Tacoma</p>
<p>Port of Walla Walla</p>	
<p>Port of Whitman County</p>	

GOVERNANCE AND FUNDING

- Commercial shipping is primarily conducted by private interests.
- Washington State authorizes public ports dedicated to building and operating facilities to foster trade and economic development, including marine shipping. (For more information on ports, see the *Local/Regional Jurisdictions section* on page 339.)
- Ports are funded by user fees, property lease and rental fees, property tax levies, grants, and bond proceeds (Chapter 53.36 RCW).
- The United States Coast Guard regulates navigation and surface water transportation.
- The Washington Board of Pilotage Commissioners is responsible for maintaining pilotage services on the Puget Sound and the coastal estuaries.
- The Oregon Board of Pilotage governs pilotage services on the Columbia River.

ON THE WEB:

[WSDOT Freight Division Marine information page](#)

[Washington State Freight Mobility Plan](#)

[Port of Seattle's 2013 Waterborne Foreign Trade Report](#)

[US Army Corps of Engineers, Navigation Data Center](#)

Air Cargo

BACKGROUND

Washington's aviation system is an important player in freight movement. High-value, time-sensitive, and perishable goods depend on transport through Washington's airports. Air cargo moves by truck between airports and warehouses, making an efficient road system integral to the timely integration of cargo and aircraft. (For more information on Air Transportation, see *Passenger Modes* on page 391.)

Air Cargo includes Air Freight (90%) and Air Mail (10%) sectors. Air Freight consists of both standard freight and express freight (UPS/FEDEX/DHL). Most (85%) of Washington State air freight activity is domestic (continental U.S.).

The three major air cargo centers are Seattle-Tacoma International (18th nationally in 2013 for total landed weight), Boeing Field International (28th), and Spokane International (45th). These three airports qualified for federal funds through the FAA because their cargo volumes exceed 100 million pounds of landed weight:

- SeaTac (1.4 billion pounds of air cargo in 2013)
- Boeing Field/ King County International Airport (759 million pounds), and
- Spokane International Airport (455 million pounds).

More than 160,000 jobs in Washington are connected to air cargo, producing approximately \$8 billion in wages.

Other commercial service airports handle air cargo primarily in the cargo hold, or "belly," of passenger flights.

GOVERNANCE

Public-use airports are operated by port districts, cities, counties, and private interests. Public-owned facilities use several different funding mechanisms, including user fees (such as landing fees and passenger facility charges), voter-approved property tax levies, interest income, federal and state grants, and bond proceeds.

FUNDING

The federal Airport Improvement Program (AIP) is a principle source of funding for capital improvements at airports. A portion of AIP funding is reserved for projects that enhance air cargo facilities at qualified airports. AIP expenditures are drawn from the Airport and Airway Trust Fund, which is supported by taxes on air freight, passenger ticket taxes, fuel taxes, and other fees.

ON THE WEB

- WSDOT Aviation can be found at <http://www.wsdot.wa.gov/aviation/>
- Washington's [Long-Term Air Transportation Study, July 2009](#)
- (2014 Aviation System Plan Update currently underway)
- Washington's [2012 WSDOT Aviation Economic Impact Study](#)
- For more airport data, see FAA's [Airport Program Statistics](#) and [Airport Operations and Ranking Reports](#).
- Washington State Freight Advisory Committee, convened by FMSIB, [Washington State Freight Trends and Policy Recommendations, May, 2014](#)
- WSDOT Freight Systems Division, [Washington State Freight Mobility Plan, 2014](#)