

Washington Transportation Plan

Executive Summary of the Freight Report

The Washington Transportation Plan (WTP) update is a forthcoming blueprint for transportation programs and facilities. It covers state, county and city transportation needs and systems. Work-in-progress at the Washington Transportation Commission and WSDOT is organized around nine themes:

Washington Transportation Plan

- System Preservation
- Safety
- System Efficiencies
- Transportation Access
- Bottlenecks and Chokepoints
- **Moving Freight**
- Health and Environment
- Contributing to a Strong Economy and Good Jobs
- Building Future Visions

The WTP Update will be data-driven with information from all over the state and from users of every transportation mode. Representatives of cities, counties Regional Transportation Planning Organizations and transit providers have worked with WSDOT staff in preparing background papers. Many transportation interest groups and individual citizens have also contributed. The intention is that a ten-year view of program directions and investment priorities and needs will emerge from this process – a vision for the plan that is supported in the statutory instruction provided to the Transportation Commission for this work (RCW 47.06.040).

For more on this topic:

www.wsdot.wa.gov/planning/wtp

WTP - Moving Freight

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Overview

The three components of Washington State's freight system:

- 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

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 everyday.

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. About 70 percent of international goods entering Washington gateways continue on to the larger U.S. market.¹ Thirty percent become part of Washington's manufactured output or are distributed in our retail system.

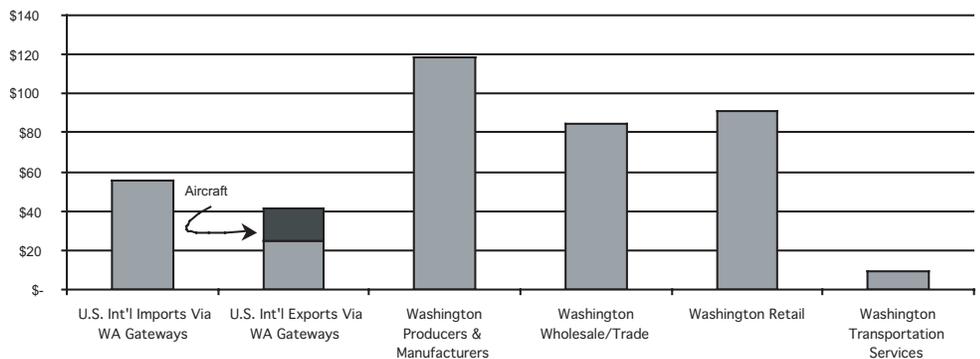
Second, our own state's manufacturers and farmers rely on the freight system to ship Washington-made products to local customers, to the big U.S. markets in California and on the east coast, and worldwide. Washington's producers generate wealth and jobs in every region in the state.

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 huge and growing.

Exhibit 1: Washington State Value of Freight Shipments

2003: Billions of Dollars



Washington State Exports and 2003 Washington State Imports: 2004. Prepared by JTS Associates (215/794/7684) from Department of Commerce Foreign Trade Statistics. All data based on goods landed or unladen in Washington State (regardless of initial origin or final destination).

Washington State Department of Revenue. Quarterly Business Review Calendar Year, 2003. Table 1: Total Gross Business Income Statewide by Industry (SIC). As of November 2004: <http://dor.wa.gov/content/statistics/2003/qbrcal03/default.aspx>



¹ Chase, Robert A. and Glenn Pascall. *Foreign Imports and Washington State Economy*: (1999).

What is the purpose of the WTP freight report?

The report will be presented to decision-makers to support Washington State's strategic investment plan in the freight transportation system. 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.

The report analyzes original research and existent information about Washington State freight customers, to inform decision-makers:

- Who are the customers of the state's freight system
- Why freight customers matter in terms of jobs and contribution to Gross State Revenues
- What performance the customers expect from the freight system
- Where key performance gaps are located
- How decision-makers may make the most productive strategic investments in Washington State's freight system.

The report provides context for the system's assessment by featuring more than a dozen case studies of Washington State freight carriers, producers and distributors. It defines terms to create a common vocabulary, and summarizes data from state and federal freight studies relevant to Washington.

What are the findings?

Globalization, competitive industry trends, and new technologies are pushing freight volumes up twice as fast as Washington's overall population and traffic growth. Without strategic investment by the public sector, our natural population growth, intensified by these three trends, will choke international trade flows through the state, undermine regional economies, and spill over into competition for road capacity in congested metro centers. With strategic investment, Washington will continue to compete.

While Washington State's population grew from 4.1 million to 6.1 million from 1980 to 2003 (the 45 percent increase includes substantial in-migration), and is projected to grow to 8.3 million (a 34 percent increase) by 2030, growth in the freight system is increasing at a much higher rate.² Truck trips increased by 94 percent on the Interstate 5 corridor, and by 72 percent on the Interstate 90 corridor, in the ten years between 1993 and 2003.³ From 1998 to 2020, freight volumes in Washington State are expected to increase by 80 percent.⁴

Global Gateways – International and National Trade Flows Through Washington

As shown in the following map, Washington State's strategic location positions it as an important and growing gateway for trade access to the Pacific Rim, Canada, and U.S. states. Focusing on markets and supply chains, this section is organized by East - West trade (including containers traveling from Asia to Chicago, agriculture from the Midwest to Asia and military transport) and North - South trade (including Canadian trade, freight along the West Coast and Alaskan trade).

Globalization, in particular the emergence of China and Asia as an important new part of the factory floor for the United States, will double the volume of imported container freight entering the Ports of Seattle and Tacoma by 2025.⁵ Midwest and East Coast consumers, at the far end of the Asia-to-United States supply chain, purchased about three-fourths of the international goods entering Washington ports in 2003. Most of these goods are shipped to the Midwest mostly in containers via rail. But there isn't enough east-west rail capacity to handle a doubling of current volume.

Global security needs and our national defense depends on the United States' ability to rapidly project force when needed. Fort Lewis is the only Power Projection Platform on the West Coast. In the event of a major conflict, essential equipment and supplies will rush to Fort Lewis from all over the United States by rail and road, then ship through the Ports of Tacoma, Olympia and Seattle to support the troops. The military traffic

Exhibit 2: Trade Through Washington by Volume



Developed by the Washington State Department of Transportation, Geographic Services and Strategic Analysis & Program Development: July 2004.

² Washington State Office of Financial Management. *Forecast of the State Population by Age and Sex: 1990 to 2030 November 2004 Forecast (History 1970 to 1990 Included)*: November 2004. As of January 2005: <http://www.ofm.wa.gov/pop/stfc/index.htm>.

³ Washington State University, Strategic Freight Transportation Analysis (SFTA). *SFTA Origin- Destination Freight Data 1993/ 1994- 2002 Spring/ Summer Preliminary Comparisons: Presentation to SFTA Advisory Committee Meeting Walla Walla, WA*. As of November 2004: http://www.sfta.wsu.edu/presentation/pdf/7_Steering_Origin_Destination.pdf

⁴ U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations. *Freight Analysis Framework - State Freight Profile*. As of November 2004: http://ops.fhwa.dot.gov/freight/freight_analysis/state_info/washington/profile_wa.htm

will attempt to surge through two freight systems that have already reached their capacity limits: east-west rail road lines, and on Interstate 5 in Central Puget Sound.⁶

Washington's own largest waterborne export is food, mostly grain. Eighty-five percent of eastern Washington wheat is shipped to Asia via Columbia River ports, but farmers struggle to get product through the state's freight system.⁷ Growers can't get produce off the farm up to two months a year due to weight-restrictions on county roads, and the Columbia-Snake River system is at risk due to federal restrictions on dredging and lock maintenance. The Port of Vancouver rail yard is severely congested, slowing wheat exports and creating a bottleneck in the Pacific Northwest's rail system.

By far, Washington's largest waterborne import is crude oil from Alaska, shipped to the state's refineries.⁸ Refined product: gas, diesel and jet fuel, then moves by pipeline or barge to distribution centers and is trucked to gas stations. Although Washington's citizens and industries consume 17.6 million gallons of petroleum per day, making the state's consumption 17th in the United States, and consumption is growing, the Olympic Pipe Line, currently operating at close to 100 percent capacity, has no plans to add pipeline capacity in the state.⁹

Cross-border truck volumes have nearly doubled at western Washington crossings over the past 11 years.¹⁰ This growth has strained border crossing facilities and enforcement agencies processes, resulting in queues of trucks north and southbound.

Made in Washington – Regional Economies Rely on the Freight System

This chapter is organized by the state's regional economies, as shown in the following map. The seven regions profiled include Southeast Washington, Columbia Basin and North Central Washington, Central Puget Sound, Spokane Region, Vancouver and Southwest Washington, Northwest Washington, and Coastal Counties.

Our state's regions have built strong and distinct economies based on industry and agriculture. Over 450,000 jobs in regional manufacturing, agriculture, construction and forestry depend on Washington's freight system, and accounted for \$118.5 billion, or 29 percent of all state gross business revenues in 2003.¹¹ Transportation is especially important for Washington agriculture because the state produces about three times as much food – and for some commodities up to twenty times as much on a tonnage basis – as it consumes, and it is separated by long distances from the majority of the nation's consumers.¹² More efficient freight systems will help Washington manufacturers compete in the larger West Coast market.

Competitive pressure to cut inventories at every step in the manufacturing chain is reshaping industrial supply chains, and causing more frequent freight shipments. The Boeing Company,

Exhibit 3: Washington State Regional Economies



⁵ BST Associates. *2004 Marine Cargo Forecast: Technical Report Final*: May 19, 2004. Prepared for the Washington Public Ports Association and the Washington State Department of Transportation. As of November 2004: <http://www.washingtonports.org/Trade/tradecover.htm>

⁶ This information is provided to the state for planning purposes from the Surface Deployment and Distribution Command - Transportation Engineering Agency: 2004.

⁷ Washington Wheat Commission: 2004. <http://wawheat.com/>

⁸ U.S. Army Corps of Engineers Navigation Data Center- Waterborne Commerce Statistics Center. *CY 2002 Waterborne Tonnage by State (In Units of 1000 Tons)*. As of November 2004: <http://www.iwr.usace.army.mil/ndc/wcsc/statenm02.htm>.

⁹ Energy Information Administration. *Total Energy Consumption Estimates by Source, 1960- 2001, Washington*: (Last Updated: 12/15/2004). As of November 2004: http://www.eia.doe.gov/emeu/states/sep_use/total/use_tot_wa.html

¹⁰ Whatcom Council of Governments. *1993- 2003 Cascade Gateway Cross- Border Auto and Truck Volumes*. As of January 2005: <http://www.wcog.org/library/imtc/2003Data.pdf>. Data compiled by the Whatcom Council of Governments from U.S. Customs Service and Statistics Canada

¹¹ Washington State Office of Financial Management. *2003 Washington State Data Book*: January 9, 2004. *Table CT06: Nonagricultural Wage and Salary Employment by Major Industry*. As of January 2005: <http://www.ofm.wa.gov/databook/economy/ct06.htm>. Washington State Department of Revenue. *Quarterly Business Review Calendar Year, 2003. Table 1: Total Gross Business Income Statewide by Industry (SIC)*. As of November 2004: <http://dor.wa.gov/content/statistics/2003/qbrcal03/default.aspx>.

¹² Washington State University, *Strategic Freight Transportation Analysis (SFTA)*.

employing 53,000 in Central Puget Sound, is Washington's largest manufacturer with \$22.4 billion in airplane revenues in 2003.¹³ Boeing's dependence on the state's freight system will become even greater as it sets new levels of efficiency in the manufacture of the new 7E7 Dreamliner. Although Boeing has historically made planes from up to a million smaller pieces and shipped them by truck, train and boat, its new strategy to gain efficiency is based on major component assembly. Fewer parts, with more frequent deliveries, will support their just-in-time inventory reduction strategy.

Cost-cutting inventory reduction strategies are also underway at thousands of other mid-market manufacturers and producers around the state. For example, the Vancouver Frito-Lay plant receives up to 50 truckloads of fresh potatoes each week from growers in the Columbia Basin. The plant keeps just enough potatoes on hand for one eight-hour shift; if the potatoes do not arrive on time, the plant cannot run. WaferTech's one-million-square-foot semiconductor foundry in East Clark County can't function without fast and reliable air cargo; if a tool is delayed overnight in the supply chain from Taiwan, the plant will shut down and idle 1,000 employees. Farmers ship vegetable produce over 200 miles from Prosser to Costco in Central Puget Sound, and are required to deliver within 15 minutes of their scheduled appointment.¹⁴

These competitive trends are repeated in thousands of manufacturing plants, construction sites, agricultural growers and processors, and distributors facilities in Spokane, Bellingham, TriCities and across the state - driving logistics practices toward perfect flow that puts more trucks on the road, more frequently, with ever-shorter delivery windows.

Spokane regional manufacturers and health care system practitioners, and Eastern Washington agricultural growers and processors, all cite severe winter weather closures on Interstate 90 at Snoqualmie Pass as Eastern Washington's top freight priority. They ship to customers in Central Puget Sound, so fixing delays on Interstate 5 from Everett to Olympia comes in a close second.

Northwest and Southwest Washington manufacturers and trucking firms are also shipping to the Central Puget Sound region, so they put fixing the Interstate 5 corridor at the top of the list.

The Columbia Basin/North Central Washington agricultural center leads the nation in apple and potato production. Apples and potatoes must be shipped in refrigerated truck or rail cars; 90 percent are trucked to market. Continued refrigerated truck shortages are likely due to seasonal peak demand and an ongoing pull from other U.S. regions for refrigerated capacity.

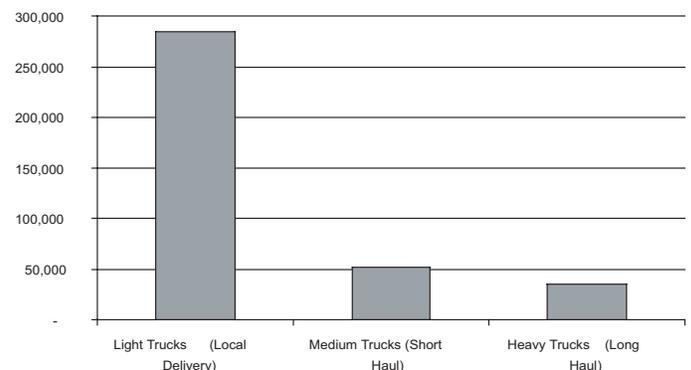
Delivering Goods to You – The Retail and Wholesale Distribution System

Distribution is a critical component of the freight system, as it produces up to 80 percent of all truck trips in metropolitan areas, and serves the retail, wholesale and business services sectors.¹⁵ These sectors supported 1,690,000 jobs and accounted for \$240.3 billion in 2003 gross business revenues, equal to 58 percent of total state revenues.¹⁶ An enormous variety of goods are handled on this system; food and groceries, fuel, pharmaceuticals and medical supplies, retail stock, office supplies and documents, trash and garbage, construction materials and equipment.

Distribution companies must provide fast and ubiquitous service that is reliable under all conditions. FedEx and UPS drivers do not go home until every package is delivered. Hospital patients cannot wait for drug deliveries. Washington's modern service economy depends on speed of delivery through the freight system.

The most common method of distributing goods is by truck from large Distribution Centers (DCs) to stores and businesses. When those trucks run into congestion, companies compensate

Exhibit 4: Most Commercial Trucks Licensed in Washington State Are Light



Washington State Department of Licensing, Agency Computer Services. Vehicle records inquiry made by the Washington State Department of Transportation, Freight Strategy and Policy Office: September 2004.

¹³ Boeing Company 2003 Annual Report.

¹⁴ Washington State Department of Transportation, Freight Strategy and Policy Office. One-on-one interviews with high-volume shippers and carriers conducted in 2004.

¹⁵ Cambridge Systematics, with TranSystems Corporation, Heffron Transportation, and the University of Washington. *FASTrucks Corridor Needs Study, Truck Model Documentation*: December 2000. Prepared for the Washington State Department of Transportation.

¹⁶ Washington State Office of Financial Management. 2003 Washington State Data Book: January 9, 2004. *Table CT06: Nonagricultural Wage and Salary Employment by Major Industry*. As of January 2005: <http://www.ofm.wa.gov/databook/economy/ct06.htm>. Washington State Department of Revenue. *Quarterly Business Review Calendar Year, 2003. Table 1: Total Gross Business Income Statewide by Industry (SIC)*. As of November 2004: <http://dor.wa.gov/content/statistics/2003/qbrcal03/default.aspx>.

for delays by sending more trucks out on the road, causing even more congestion. Land use costs are also causing higher truck volumes. For example, in response to increased consumer demand for a wider variety of food products, grocers are increasing overall store size and shelf space. But back-storage space doesn't generate sales, so modern grocery stores are reducing expensive, non-productive storage space. This requires more frequent deliveries in smaller quantities; one Seattle specialty grocery store, for example, receives 375 truck deliveries per week.¹⁷

New technologies enable companies to track more and more trucks, balance their inventories and capital usage, while managing very tight delivery windows. For example, UPS and FedEx's high-tech logistics services allow companies to track inventory on the Internet no matter which warehouse, truck, or other location holds their products. By implication, the greatest increase in overall truck volumes will be seen in many more, smaller trucks on the roads.

What alternatives are available?

Manufacturers, agricultural growers and processors, and distributors state that there is no practical alternative to Washington's major highway system, and use Interstate 5 and Interstate 90 as primary freight routes.

In the north-south freight corridor, significant congestion is found on Interstate 5 from Everett to Olympia and over the Columbia River Bridge, and the full length of I-405 and Highway 167. If the Alaskan Way Viaduct fails, up to 110,000 trucks and cars (enough to fill two freeway lanes in each direction) will try to move to Interstate 5, everyday, increasing congestion by nearly 40 percent.¹⁸ In addition, the north-south freight corridor system is incomplete between Interstate 5 and Highway 509 and Highway 167.

The majority of Washington State air cargo moves through Seattle-Tacoma International and King County Airports, therefore congestion on Interstate 5 in Central Puget Sound, and eastbound on Highway 518 from Sea-Tac to Interstate 5, directly impacts reliability and on-time performance of the state's air cargo system. Trucking companies may try to schedule around congestion patterns, but must meet customer demands for on-time service in preferred time windows.

In the east-west freight corridor, severe weather closures on Interstate 90 at Snoqualmie Pass cut off Eastern Washington producers from their major markets in Central Puget Sound and points south.

What are the recommendations?

The WTP Freight Strategy identifies twelve highly productive investments Washington State can make to generate overall economic prosperity and wealth to citizens in the state. These improvements are necessary to support Washington's role as a global gateway, our own state's manufacturers and agricultural growers, and the state's retail and wholesale distribution systems.

- Address freight constraints in the Interstate 5 corridor from Everett to Olympia. Analyze the benefits of a public-private truck-toll highway from Central Puget Sound to the Oregon border. This highway could be an extension of Interstate 5, or follow the Interstate 405/Highway 167/Highway 512/ Interstate 5 route, or be a separate facility.
- Improve Interstate 90, east of and over Snoqualmie Pass, to prevent severe weather closures.
- Identify, establish and fund a statewide core all-weather county road system.
- Support growth in east-west mainline rail capacity and port-rail connections, and preserve rail yards in metro areas.
 - The Burlington Northern and Santa Fe Railway's (in track miles and volume the state's largest railroad) top priorities include adding siding along the Columbia River Gorge, enlarging the Stampede Pass to accommodate double-stacked trains, and completing the Swift siding improvement at the Canadian border, and the Vancouver bypass route.
 - Review the relationship between freight and passenger rail service on the Interstate 5 rail corridor, and ensure that growth of passenger rail does not encumber freight service.
- Maintain the Columbia-Snake River barge system by implementing a strategic dredging and lock maintenance plan.
- Complete the statewide Commercial Vehicle Information System Network (CVISN)/ Weigh-In-Motion system.

¹⁷ Heffron Transportation, Inc. *Howe Street Mixed-Use Project Traffic and Parking Impact Analysis*: November 2001. Case study: Metropolitan Market on Seattle's Queen Anne Hill.

¹⁸ U.S Department of Transportation, Washington State Department of Transportation, and City of Seattle. *SR 99: Alaskan Way Viaduct & Seawall Replacement Project. Draft Environmental Impact Statement*: March 2004.

- Preserve and enhance freight access to hub airports in metro areas. Add a third eastbound lane on Highway 518 from Seattle-Tacoma International Airport to Interstate 5, to support the statewide air cargo system.
- Create an ongoing, appropriate level of funding for regional economic development freight projects, port and intermodal access improvements, grade separations, shortline rail improvements, and truck route program to optimize truck movements in metro areas.
- Replace the Interstate 5 Columbia River Bridge.
- Create fuel pipeline capacity and distribution alternatives to meet long-term demand by analyzing constraints, and removing obstructions so that the market may respond to increasing demand.
- Replace the Alaskan Way Viaduct.
- Complete the major north-south freight corridor system by adding links from Highway 167 to Interstate 5, from Highway 509 to Interstate 5, and by completing Highway 18 to Interstate 90.

In Summary

The three components of Washington's freight system are integrated and support our state's economy:

- International goods enter Washington State gateways and become part of Washington's manufactured output, or are distributed in our retail system. Washington's global gateways also carry national and international goods to and from the larger U.S. market.
- Washington manufacturers and farmers ship products directly to customers and to wholesalers in national and international markets. These industries support hundreds of thousands of jobs and contribute billions of dollars to the gross state product.
- Washington wholesalers and retailers supply consumers with goods from all over the U.S. and the world. They sustain our modern economy.

Freight related issues such as security, safety and the environment are being considered in other parts of the update of the Washington Transportation Plan.

What ideas did we miss?

We want the conversation about freight strategy to involve all parties. We need your help to make good investment choices that will address the needs of freight movement on our state's transportation systems and facilities. Especially when there isn't nearly enough money to do everything that clearly needs to be done.

For a full copy of the freight report go to:

http://www.wsdot.wa.gov/freight/images/WTP_FreightUpdate.pdf