

# Freight Systems and Urban Logistics in Central Puget Sound

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Faster Freight – Cleaner Air Puget Sound Conference  
May 16, 2007



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## Why Do Freight Systems Matter in Washington State?

### I. Delivering Goods To You

Central Puget Sound's Distribution System

### II. Made in Washington

Central Puget Sound's Manufacturing, Seafood and  
Construction Sectors Rely on the Freight System

### III. Global Gateways

International and National Trade Flows Through Central  
Puget Sound

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## I. Delivering Goods To You

Up to 80 percent of all truck trips in Central Puget Sound happen in the local distribution system.

This freight system delivers food, fuel, medicine, retail goods, office supplies and building materials to the 3,500,000 people who live and work in Central Puget Sound. Then it takes the garbage away.



100 percent of deliveries in metro areas move by truck.

- One large grocery store takes two big semi-tractor trailer deliveries and up to 20 other specialized deliveries every day.
- Just one specialty market receives 375 van and small truck deliveries per week.

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## Can Central Puget Sound Grow Without an Efficient Delivery System?

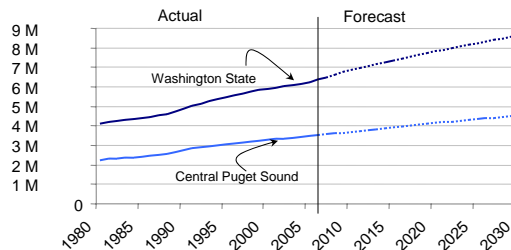
Central Puget Sound will add 1.6 million residents and 1.1 million jobs by 2040.

High-value, time-critical deliveries must move quickly through the freight system.

There's no alternative to the region's major north-south truck routes.

### Washington State and Central Puget Sound Population

(Actual 1980-2006, Forecast 2007-2030)



Source: Washington State Office of Financial Management (OFM), 8/11/2006. Central Puget Sound includes King, Kitsap, Pierce, and Snohomish County.

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## II. Made in Central Puget Sound Regional Economies Rely on the Freight System

- The Boeing Company employed 63,000 in Washington State and Boeing Aircraft reported \$22.7 billion revenues in 2005.

- Another 3,900 mid-sized manufacturing firms did business in King, Pierce and Snohomish Counties in 2005.

- The maritime industry employed over 22,000 in King County in 2002; annual output totaled \$2.1 billion.

700,685 Jobs Rely on Freight		
	Jobs	Average Wage
Agriculture and Fishing	6,132	\$36,156
Forestry and Mining	1,755	\$53,897
Manufacturing	174,436	\$62,050
Construction	106,791	\$44,164
Wholesale and Retail Trade	275,996	\$37,955
Transportation and Warehousing	58,993	\$45,547
Military	76,582	\$44,863

\* 2005 Average Employment and Wage (Military Employment, 2003)  
Source: Office of Financial Management, OFM. Includes King, Kitsap, Island, Pierce, Snohomish and Thurston County.

- Only 50 percent of trucking firms and 65 percent of manufacturing firms in Central Puget Sound report high satisfaction with the current performance of the freight system.
- On time delivery is their most important requirement of the freight system.

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## Big Challenges Facing 'Made in Washington' Freight System

WSDOT studied Central Puget Sound manufacturers' supply chains in 2007. Two case studies show how congestion in Central Puget Sound contributes to higher business costs and causes companies to put more trucks on the road.

- Processed food sector. A beverage company's transportation efficiency is declining up to 20 percent per year. In 2001 it took 90 minutes for a round trip from Bellevue to Tacoma; the same trip took 120 to 150 minutes in 2007.
- Construction sector. A building company's business grew by 20 percent, but they had to double the number of trucks in their fleet to get products to job sites on time.

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### III. Global Gateways

International and national trade flows through Central Puget Sound



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### Central Puget Sound: Global Gateways

- Central Puget Sound ports are gateways for Asian imports.
  - 70 to 80 percent go by rail cross-country to Midwest and East Coast consumers.
  - Container trade has increased 241 percent in the Puget Sound region since 1982.
  - Forecasts predict that international container volumes in Central Puget Sound will triple from 2.8 million TEU's in 2002 to 6.9 million TEU's in 2025
- Fort Lewis is the West Coast Power Projection Platform, and the Ports of Seattle, Tacoma and Olympia provide direct support.
- Puget Sound seaports are also a gateway to Alaska.



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## How Does Freeway Congestion Harm Washington State Importers and Exporters?

Washington's exporter and importer distribution facilities are concentrated in the South Sound region.

Delay costs everyone.

Consumer goods cost more. Shippers turn fewer shipments to the ports. Manufacturers have shorter windows to ship air cargo.

Worst of all, it takes more trucks to ship the same volume, as each truck gets fewer trips per day.

Central Puget Sound Container Port to Regional Distribution Center



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## Challenges on Washington's Major Truck Corridors

I-5  
Congestion and pavement deterioration.

Highway 405 – Highway 167  
Congestion and missing link between Highway 167 and I-5.

Highway 99 - Alaskan Way Viaduct – Highway 509  
Congestion, failing structure and missing link. Completing Highway 509 would link I-5 and the Viaduct and create a third major truck route into the Seattle metro region.



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## How Can Operational Improvements Add Capacity to the Freight System?

### Information is Key.

WSDOT developed and hosts a Traveler Information website for Washington State highways, featuring:

- Puget Sound travel times,
- Road closures,
- Highway project updates,
- Truck stop and rest area locations,
- Local weather conditions, and
- Mountain pass conditions.

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## Continued Progress toward Operational Improvements

- Incident response
- Re-time and synchronize traffic signals
- Operate ramp meters to smooth traffic merges
- More progress on traveler information
- Value pricing
- Real-time information

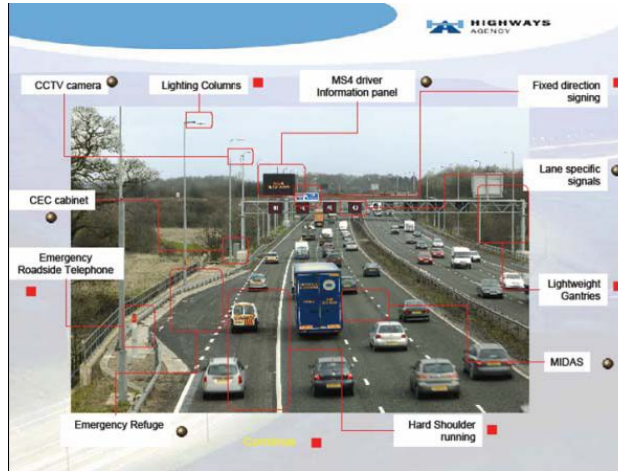
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## The Future: Active Traffic Management

WSDOT is studying techniques to dynamically manage recurrent and non-recurrent congestion. These strategies include speed harmonization, temporary shoulder use, junction control, and dynamic signing and re-routing.

The purpose of Active Management is increased trip reliability.



Active Traffic Management system features

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## How Will We Know if Our Investments Help Customers Reach Their Goals?

### Truck Freight Data and Performance Measures Research

The Governor and the State Legislature funded a pilot study in 2007-09 to establish truck performance measures.

WSDOT, FMSIB and TransNow will:

- Use GIS tracking tools to collect truck trip data in Central Puget Sound. Evaluate capabilities of new technologies to provide truck performance data.
- Monitor reliability of truck trips.
- Develop analytic method.
- Use this data to guide investment decisions and track project effectiveness.

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## Industry Initiatives Reduce Emissions

- **Route automation** to improve route efficiency, reduce travel times and increase stops and shipments per route, thereby reducing fuel per shipment.
- **Making best use of ground transportation** rather than air transportation.
- **Focused selling into lane segments with capacity**, in order to maximize use of daily flight lift and scheduled truck moves.
- **Alternative fuel vehicles** are being piloted in several markets.
- **Many private companies host web sites that match empty trucks with shippers**, reducing the number of backhaul journeys.

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## In Summary, Central Puget Sound's Freight System

- Serves the national economy and national defense.
- Provides competitive advantage for our state's manufacturing, agribusiness, logistics and trade, and timber/wood products sectors.
- Delivers goods to every citizen, everyday.
- Needs significant investment and creative thinking to solve big issues, such as deficiencies on the major truck corridors in Central Puget Sound and across the state.

To learn more, please see the Washington Transportation Plan freight report at:  
[http://www.wsdot.wa.gov/freight/images/WTP\\_FreightUpdate.pdf](http://www.wsdot.wa.gov/freight/images/WTP_FreightUpdate.pdf)

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