

# Washington Transportation Plan

## Freight Systems

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# The Washington Transportation Plan (WTP)

A ten-year blueprint for transportation programs and facilities

Covers the full transportation system: city, county and state

Creates program direction and investment priorities

Organized in nine themes:

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

# Moving Freight

## **I. Global Gateways**

International and National Trade Flows Through Washington

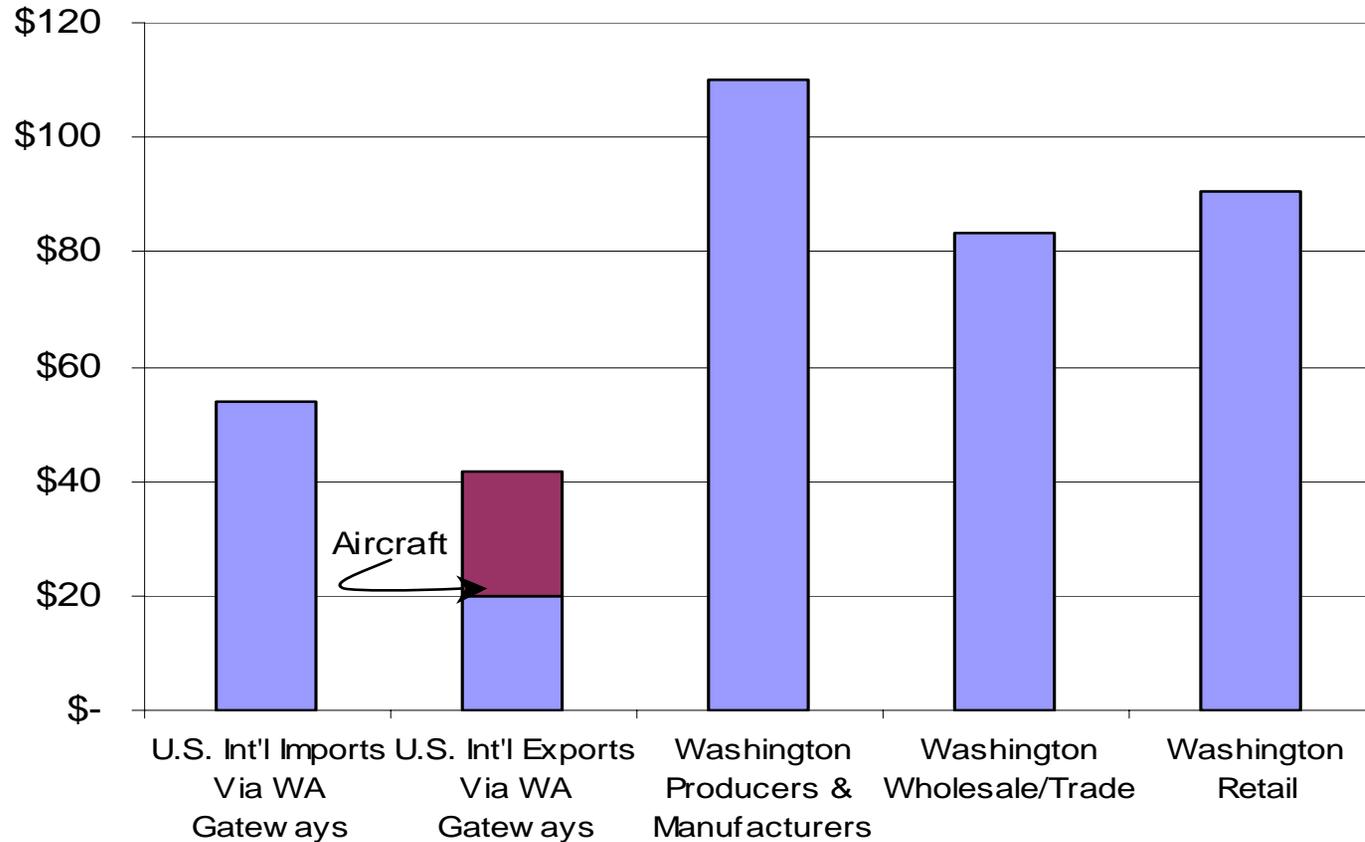
## **II. Made in Washington**

Regional Economies Rely on the Freight System

## **III. Delivering Goods To You**

Washington's Retail and Wholesale Distribution System

# Washington State Value of Freight Shipments (2003: Billions of Dollars)

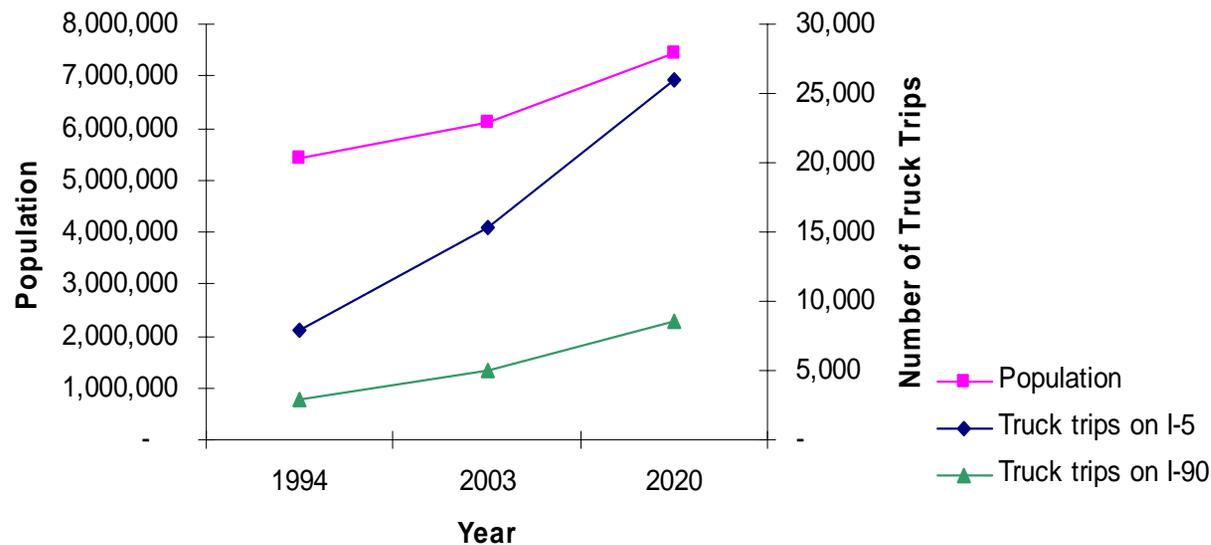


Source: U.S. Customs Bureau; WA State Dept. of Revenue.

# Freight Volumes in Washington are Growing Twice as Fast as the State's Population

Freight growth in Washington is fueled by globalization, new competitive industry trends and technologies.

## Washington State's Population Growth and Growth of Truck Trips on I-5 and I-90



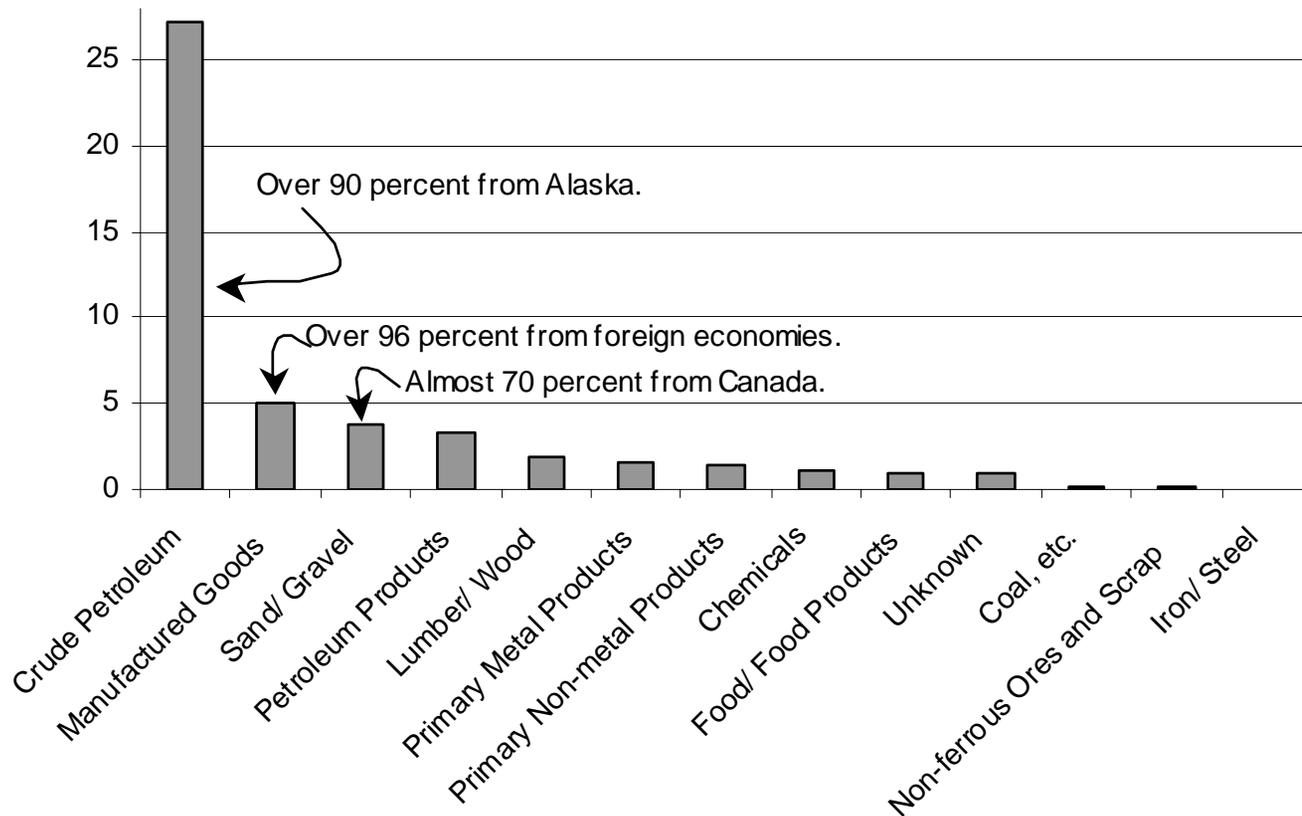
# I. Global Gateways

## International and national trade flows through Washington



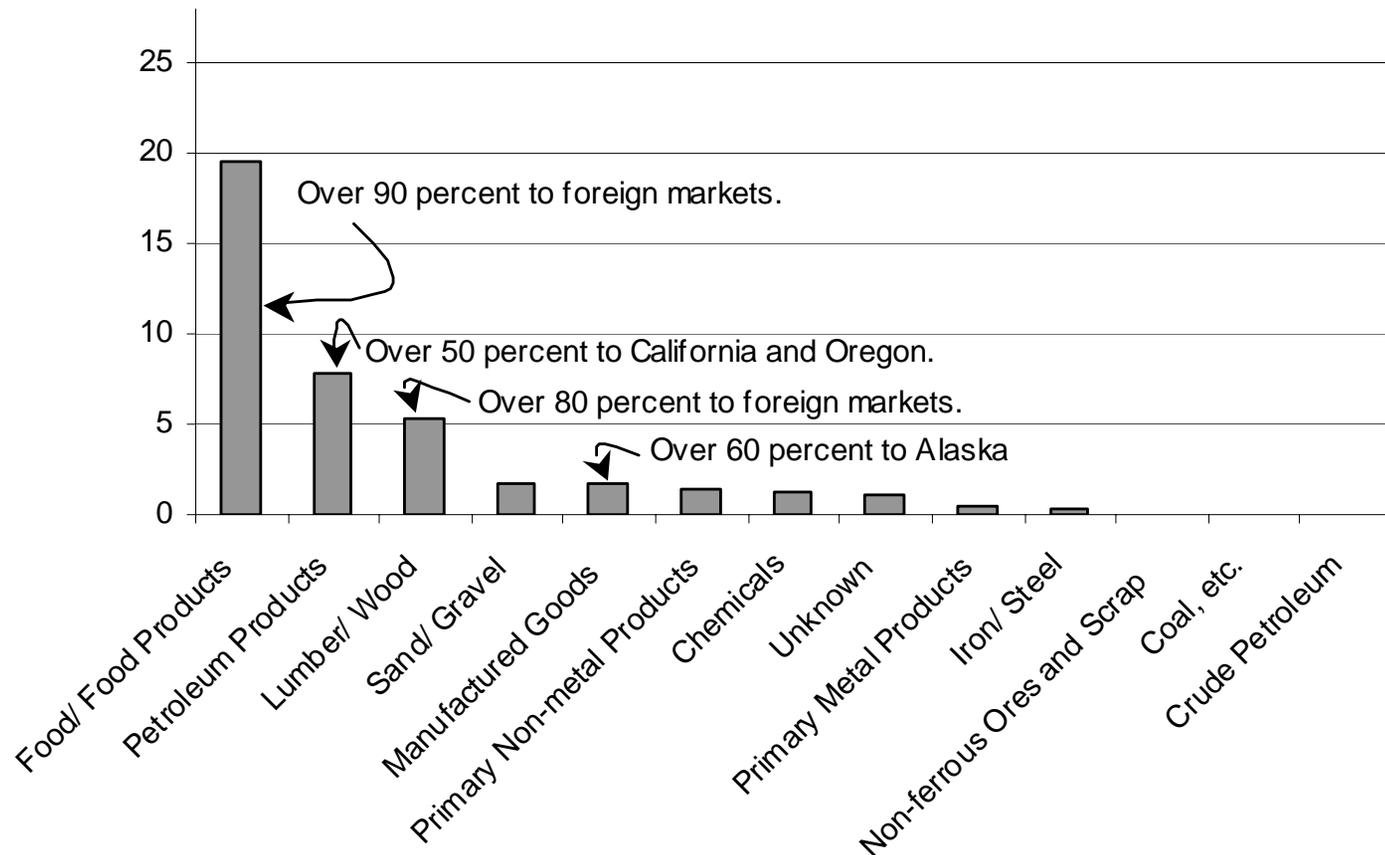
# By Tonnage, Crude Petroleum Dwarfs All Other Waterborne Inbound Commodities

Goods Entering Washington State by Water  
2002, Million Tons



# By Tonnage, Food/ Food Products Outweigh Other Waterborne Outbound Commodities

Goods Leaving Washington State by Water  
2002, Million Tons

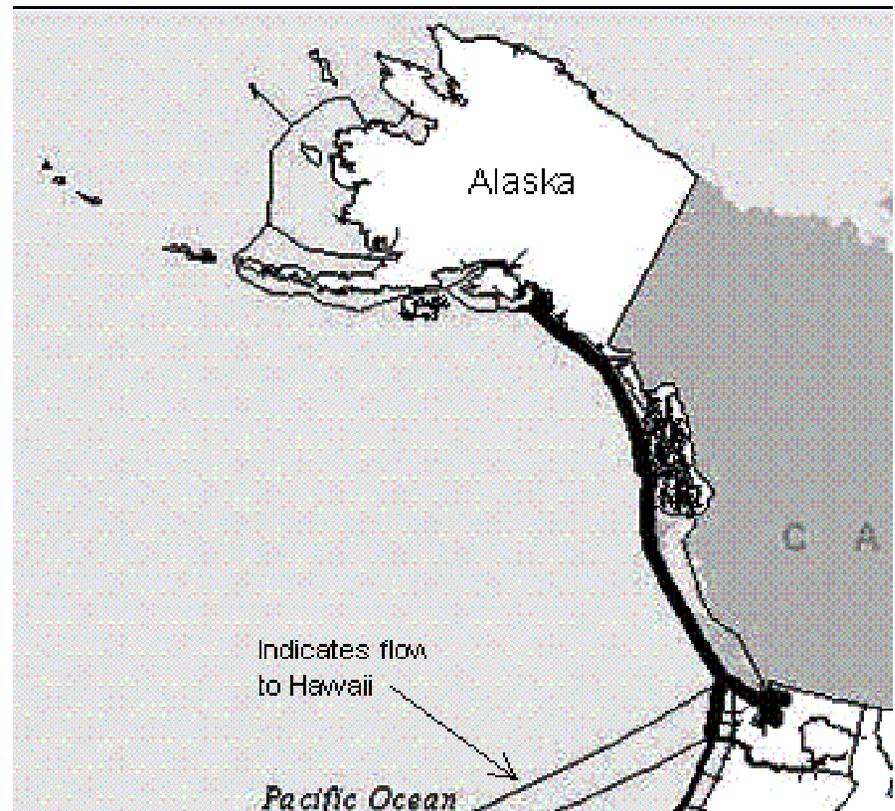


# Washington is the Gateway to Alaska

By value and volume – 24.62 million tons – the most significant commodity shipped to Washington State from Alaska, using the inland waterway and landing at refineries, is crude petroleum.

Washington State ships manufactured goods, food and food products, north to Alaska.

**Domestic Freight Flows Moving By Water to and From Washington State**



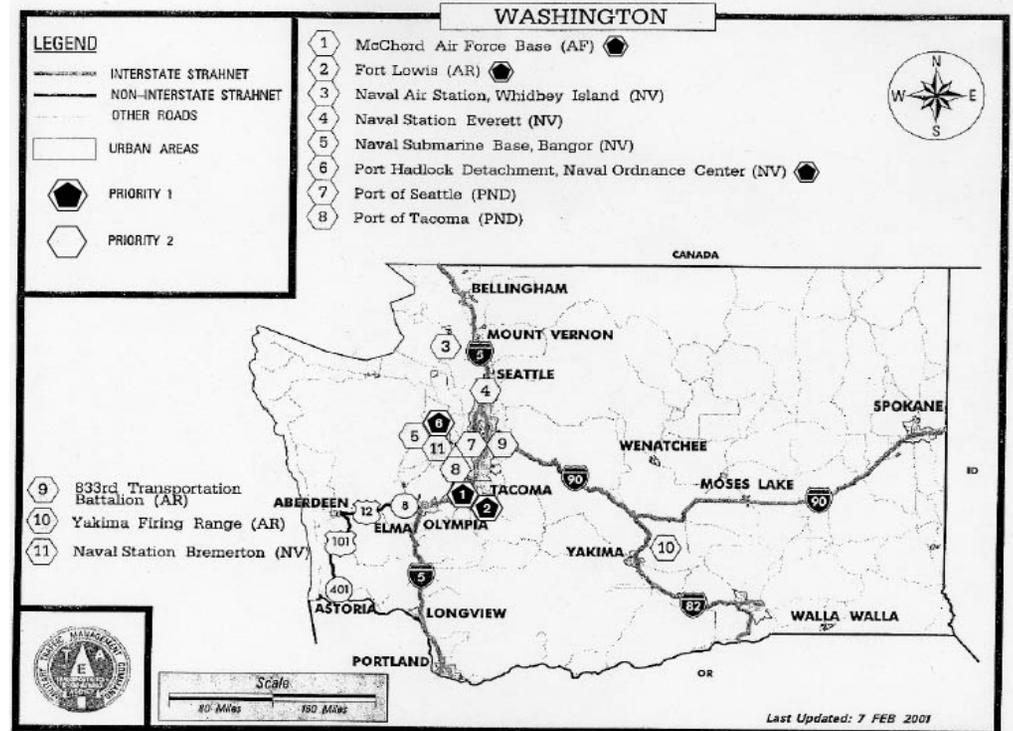
*Source: Adapted from Washington: Total Domestic Water Flows, 1998 (US DOT)*

# Washington Gateways Play an Essential Role in Supporting National Security

- Fort Lewis is a key U.S. location for gathering, staging and mobilizing forces and material.

During a major regional conflict, cargo from all over the United States will rush by road and rail to Fort Lewis.

- Ports of Tacoma and Olympia: PNW strategic ports supporting Fort Lewis units.
- Port of Seattle: sustainment port to ship supplies to troops.
- Port Hadlock Naval Ordnance Center: one of nine national centers.



## II. Made in Washington

Regional Economies Rely on the Freight System

**Agriculture: \$5.6 billion** in food and agricultural products in 2002.

Freight transportation is especially important for Washington agriculture as the state produces up to twenty times as much food as it consumes, and is far from most of the nation's consumers.

**Manufacturing: \$88.3 billion** in Gross Business Revenues in 2003, 21.3 percent of the total State Gross Business Income.

**Construction: Gross Business Revenues topped \$27 billion** in 2003.

**Forestry: Value-added wood and paper products produced \$12.7 billion** of Washington's Gross Business Revenues in 2003.

# Regional Economies Rely on Freight System



# Central Puget Sound: Westside Center of Manufacturing and Commerce

- The Boeing Company employed 53,000 in Washington State in 2004. Boeing Aircraft reported \$22.4 billion revenues in 2003.
- 4,433 mid-sized manufacturing firms did business in King, Pierce and Snohomish Counties in 2003. About 65 percent are very satisfied with current freight system performance.
- The maritime industry employed over 22,000 in King County in 2002; annual output totaled \$2.1 billion.

<b>484,000 Jobs Directly Depend on Freight</b>		
	<b>Jobs</b>	<b>Average Wage</b>
Construction	92,406	\$36,551
Manufacturing	202,988	\$44,625
Wholesale/Trade	94,311	\$41,883
Transportation/Utilities	94,040	\$44,752

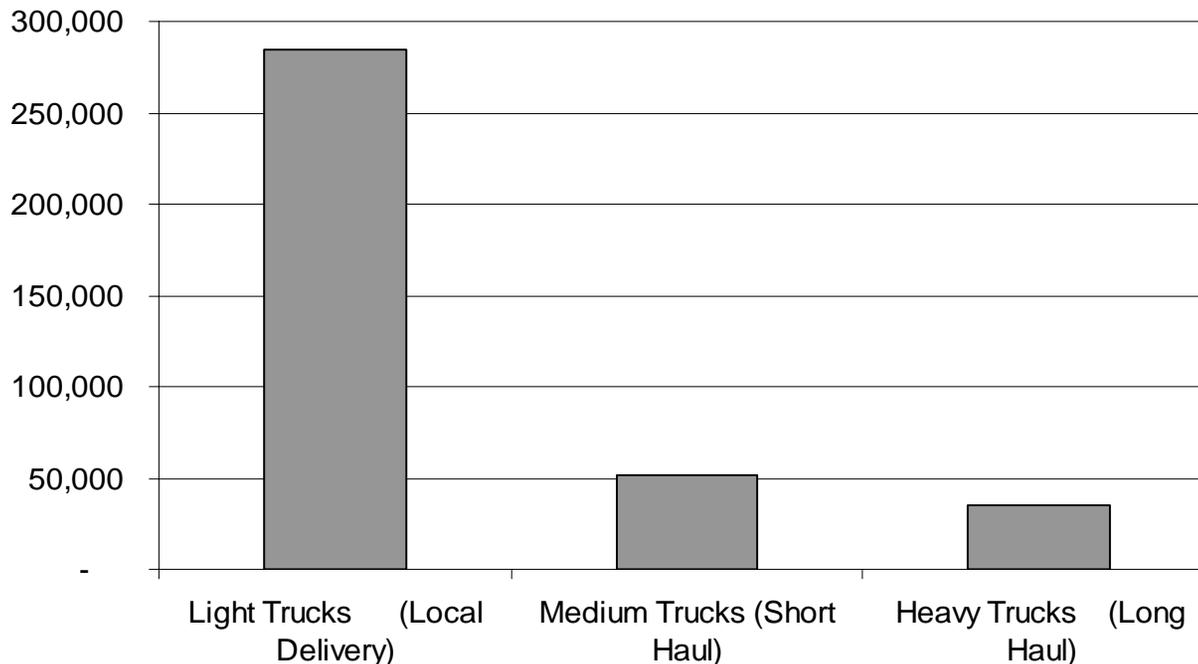
## Freight System Views: Trucking

- Only 50 percent of trucking firms based in Central Puget Sound report high satisfaction with the current performance of the freight system.
- This compares to 62 percent of Spokane trucking carriers and 54 percent of Vancouver/Portland metro carriers with high satisfaction ratings.

# III. Delivering Goods To You

## Washington's retail and wholesale distribution system

- Up to 80% of truck trips operate in the local distribution system
- In 2004, almost ten times more light and medium trucks than heavy trucks were licensed in Washington State.



# Food and Grocery Delivery Supports Every Citizen, Everyday

- **Big Volume of Truck Trips Serve Groceries and Restaurants**

- **A typical large grocery store**

Receives two large semi-tractor trailer deliveries per day, and  
Ten to 20 other specialized deliveries per day

- **Specialty markets such as Metropolitan Market on Seattle's  
Queen Anne Hill**

Receives 375 van and small truck deliveries per week

# Retail Distribution

## Bellevue Square – Regional Shopping Center

- Bellevue Square has over 200 stores and draws 16 million visitors a year.
- Show time begins at 9:30 am, and most freight deliveries must be completed before customers arrive.
- Retailers' store configuration is 25 percent stockroom and 75 percent retail floor; for restaurants the ratio is five percent stockroom to 95 percent floor. This requires more frequent deliveries in smaller quantities; many more, smaller trucks on the road.
- Bellevue Square's freight issues:
  - Congestion on I-405 and I-5
  - No garbage pick up after 2:00 pm, as garbage truck drivers have to get to Cedar Hills Landfill on congested I-405 before it closes.

# Fuel Distribution System

- Washington has five refineries; four of them linked by Olympic Pipe Line. Yellowstone and Chevron pipelines serve Eastern Washington from out-of-state refineries.
- Almost all deliveries to market are made by truck to distribution centers located at:**
  - Harbor Island
  - Tacoma
  - Moses Lake
  - Renton
  - Anacortes
  - Pasco
  - Tukwila
  - Ferndale
  - Spokane
- Washington has 2,800 gas stations, up 43% from 1996. One to fifteen tanker deliveries per week go to each gas station.
- Marine fueling: average fishing boat takes four tanker trucks (30,000 gallons)
- Agriculture and industry
- Home heating oil



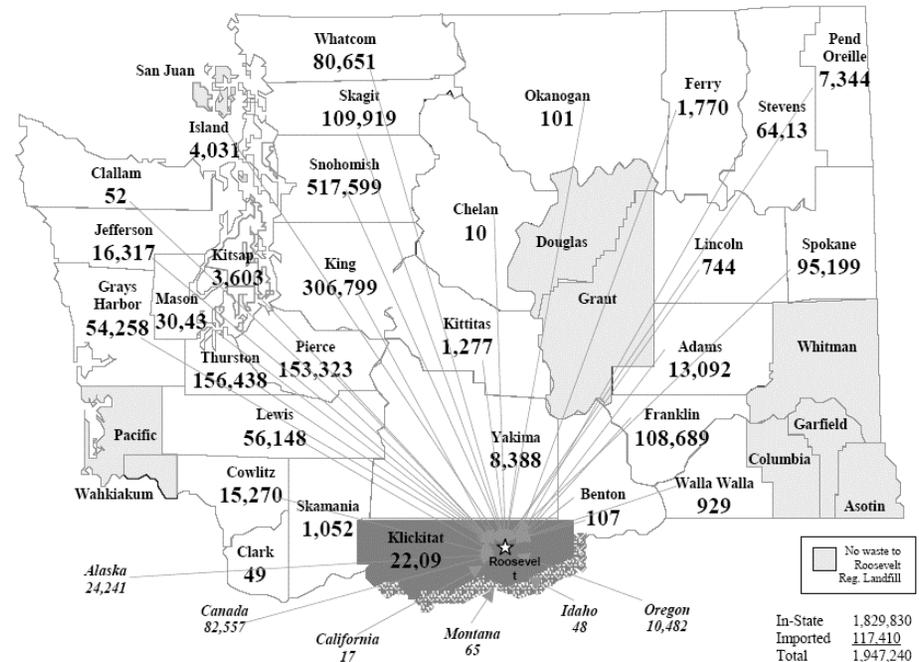
# The Garbage and Refuse System

Over 4.5 million tons of garbage moved by truck and truck/rail to landfills in Washington State in 2001.

This waste was trucked to transfer stations, consolidated, loaded into larger trucks, and moved to nearby landfills via truck or transferred to rail cars destined for Roosevelt landfill in Eastern Washington.

In 2002, 1.4 million tons of Washington's solid waste was exported to Oregon by rail.

Municipal Waste to Roosevelt Regional Landfill in 2002



# What are the Emerging Washington Transportation Plan Freight Recommendations?

The WTP Freight Report identifies policy and strategy directions and highly productive investments Washington State can make to generate economic prosperity and wealth for citizens of 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 I-5 Corridor

## What is the Problem?

### *Growth in the I-5 Corridor*

Manufacturers, agricultural growers and processors, construction firms, and distributors have no practical alternative to Washington's most heavily used north-south freight routes: I-5, I-405 and Highway 167.

Up to 22,000 trucks drive the I-5 corridor between Central Puget Sound and Oregon, daily. Truck trips increased by 94 percent on the I-5 corridor between 1993 and 2003. Freight volumes are expected to increase another 80 percent - to 35,000 trucks per day - by 2020.

Estimated Average Annual Daily Truck Traffic 1998



Estimated Average Annual Daily Truck Traffic 2020



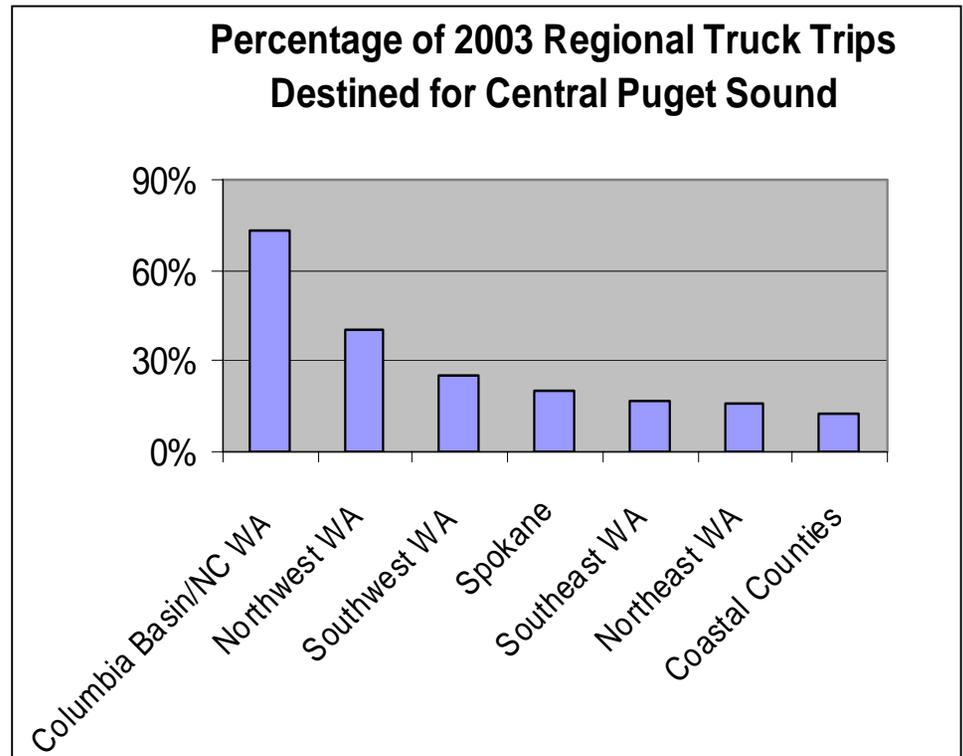
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# Address Freight Constraints in the I-5 Corridor For Statewide Market Access

Every region in the state ships goods on the I-5 Corridor to the major markets in Central Puget Sound. Statewide businesses also ship products to the world through Central Puget Sound ports.

## Regional Truck Trips to Central Puget Sound\*

Origin By Region	Daily Truck Trips
Northwest Washington	1,500
Columbia Basin/ North Central Washington	1,400
Coastal Counties	750
Southwest Washington	730
Northeast Washington	415
Spokane	390
Southeast Washington	260



\*Strategic Freight Transportation Analysis, Washington State University; 2003.

# Address Freight Constraints in the I-5 Corridor

## What's the Problem?

### *Higher Business Costs*

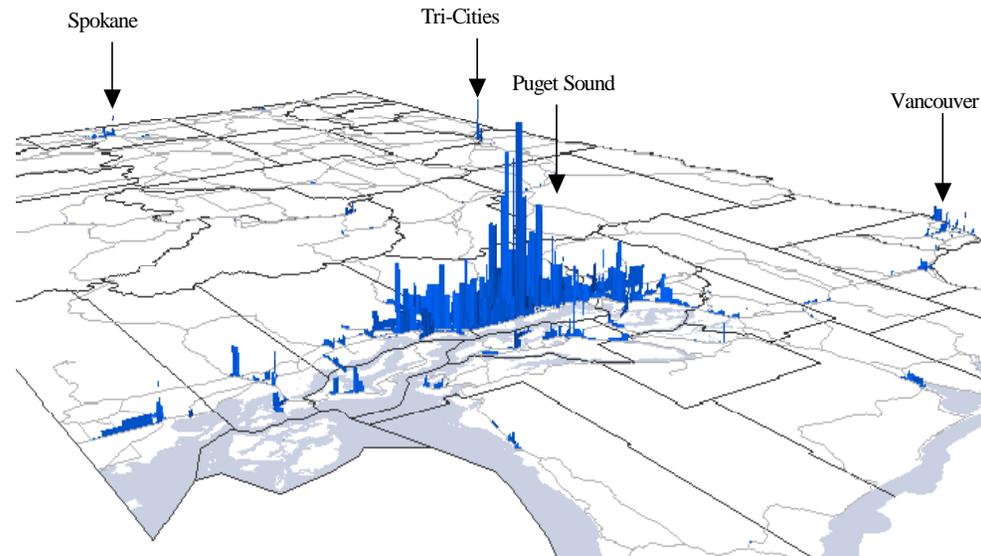
Congestion on the north-south corridor contributes to higher business costs. For example, South Sound manufacturers report paying total logistics costs averaging 16 percent of cost of goods sold, while in Spokane and Whatcom County those costs average 11 percent of cost of goods sold.

A major Less-Than-Truckload carrier is able to pick up two shipments per hour in Central Puget Sound vs. the industry benchmark of three per hour – adding 30 percent to the cost of each shipment.

The primary freight constraint on I-5 is from Central Puget Sound to the south. North of Central Puget Sound to Canada, the number of truck trips on I-5 drops by about two thirds.

Trucking companies may try to schedule around congestion patterns, but must meet customer demands for on-time service in preferred time windows.

**Total Daily Vehicle Hours of Delay Per Lane Mile**



# Address Freight Constraints in the I-5 Corridor

## Description of Proposals

### Projects

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 I-5, or follow the I-405/Highway 167/I-5 route.

Corridor completion of the major north-south freight corridor system:

- Highway 167 to I-5
- Highway 167 and Highway 18
- Highway 509 to I-5
- Complete Highway 18 to I-90
- Add a third eastbound lane on Highway 518 from Sea-Tac International Airport to I-5

Failing structures:

- Replace the Alaskan Way Viaduct
- Replace the I-5 Columbia River Bridge

### Policy

Recognize the South Puget Sound warehouse district as a component of the state's Global Gateway system along with rail and port facilities, and preserve the warehouse district's proximity to the Ports of Seattle and Tacoma.

### Operations

Continuously Improve Traffic Management System & Incident Response Program

# Address Freight Constraints in the I-5 Corridor

## Corridor Completion and Failing Structures in Central Puget Sound



# Moving Freight

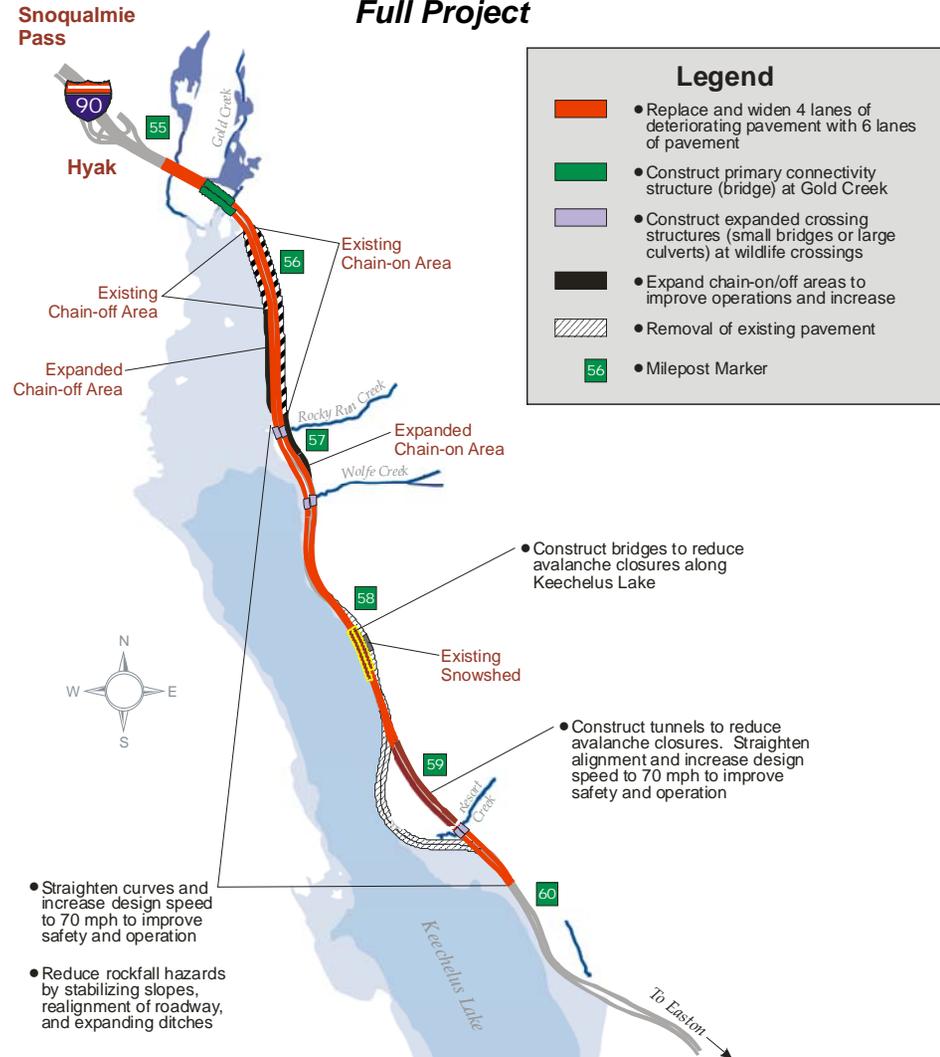
## Description of Proposal

Improve Interstate 90, east of and over Snoqualmie Pass, to prevent severe weather closures.



## I-90 Snoqualmie Pass East Hyak to Keechelus Dam

### Full Project



*This scenario represents one of several alternatives being considered in the Environmental Impact Statement.*

# Create Fuel Pipeline Capacity and Distribution Alternatives

## Description of Proposal

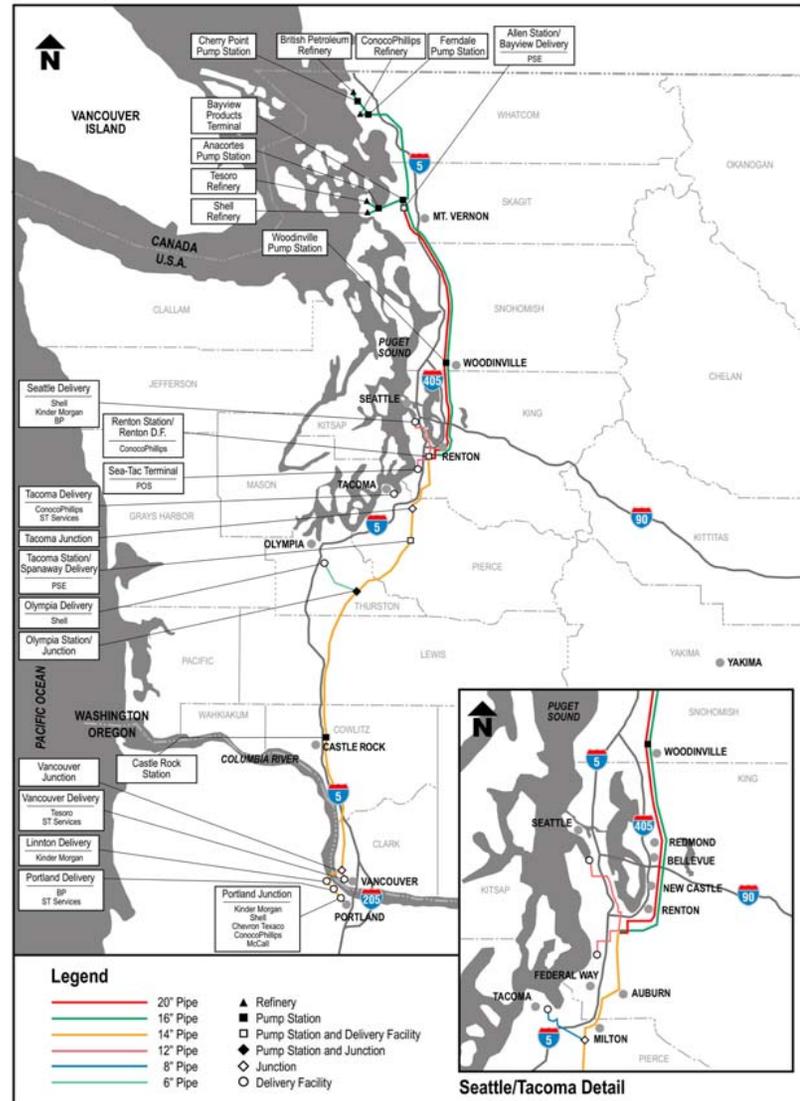
**Policy:** Create fuel pipeline capacity and distribution alternatives to meet Washington's long-term demand.

**Strategy:** Analyze constraints and remove obstructions so that the market may respond to increasing demand.

## Description of Benefits/Impacts of Implementing the Proposal

Efficiently supplying fuel to Washington citizens and businesses supports the economic vitality of our state.

## Petroleum Pipelines



# Ongoing Funding for Regional Economic Development & Freight System Mitigation

## Description of Proposal

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.

## Description of Benefits/Impacts of Implementing the Proposal

Benefits of investing in regional economic development include increased:

- Contribution to local and state tax base
- Contribution to Gross State Product
- Growth of jobs
- Economic growth distributed throughout the state

Statewide truck route program to provide incentives for congested urban areas to optimize truck movements. Eighty percent of all freight moves on the local system.

Benefits from investing in the growth in Washington's Global Gateways freight system include:

- Economic impact of jobs created by seaport, rail and warehouse district activities.
- Reduced cost of international transport for Washington State goods.
- Advantage from the region's soft trade infrastructure: human capital that facilitates financial, legal, and other international business issues.

# Complete the Statewide CVISN/ Weigh-in-Motion System

## What is the Problem?

Truck scales are used to protect state highways from overweight vehicles, and provide safety inspections and freight data, while minimizing delay to trucks.

Safe and legal carriers need to move products with the least amount of interruption.

In Washington, trucks without transponders spend an average of 6.13 minutes at scales for weight verification (inspections can take much longer).

Much of the state's weigh station infrastructure is aging. Fourteen of 15 weigh stations were built over 20 years ago, and none can handle the current volume of truck traffic. There are currently only eight CVISN/ Weigh-In-Motion stations operating in Washington.

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# Address Freight Constraints on Mainline Rail

## What is the Problem?

Container freight entering the Ports of Seattle and Tacoma will triple by 2025. Most of these goods are shipped to the Midwest via rail, but there isn't enough east-west rail capacity to handle a tripling of current volume.

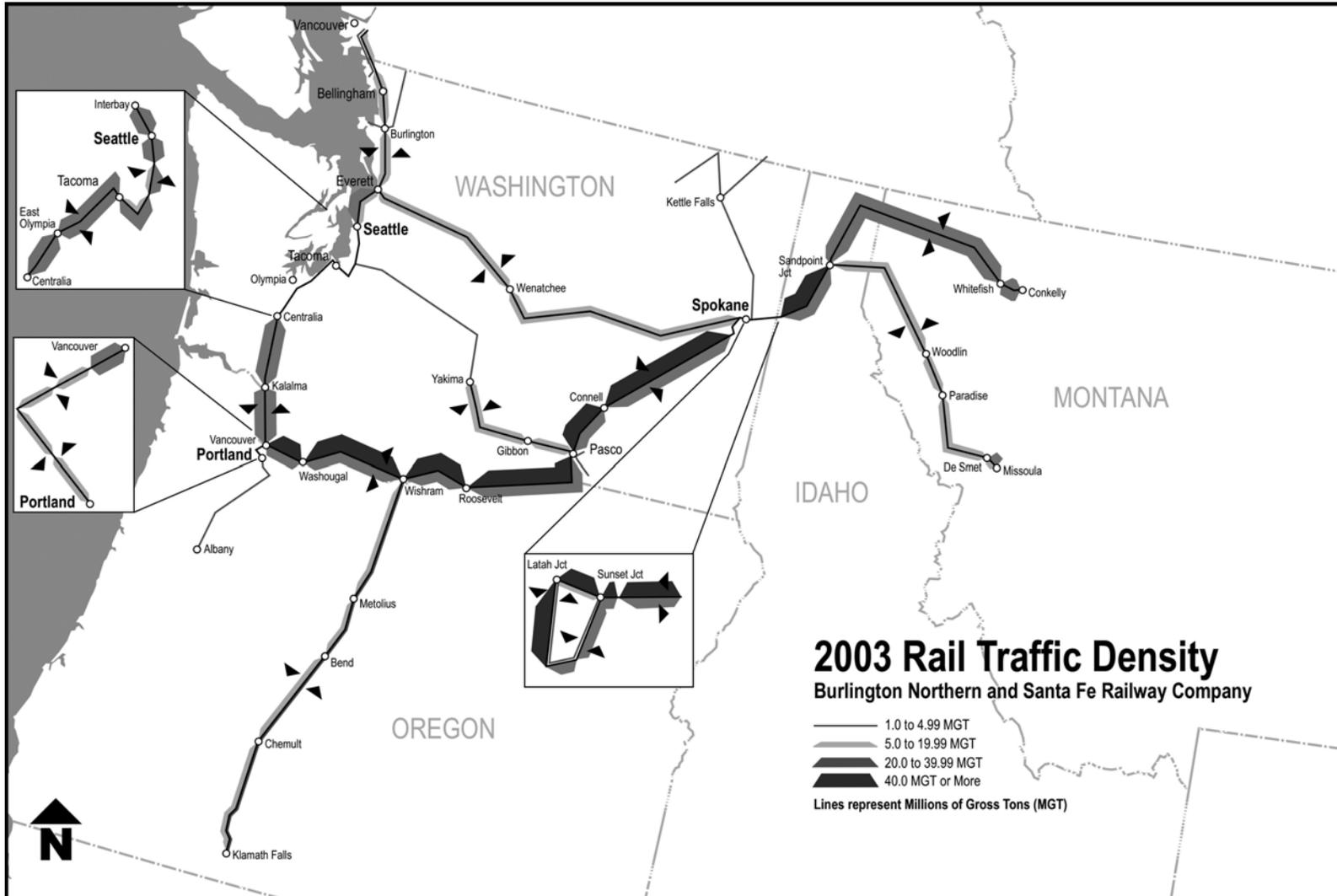
## Comparison of Mainline Rail Capacity With Current and Projected Operations (Trains per Day)

Mainline Segment	Current Operations			Projected 2025 Operations		
	Estimated Sustainable Cap.	Ave. Trains/Day	Peak Trains/Day	Estimated Sustainable Cap.	Ave. Trains/Day	Peak Trains/Day
Stevens Pass	28	23	25	28	46	51
Stampede Pass	20	6	7	20	16	18
Blaine to Everett	18	14	15	30	21	23
Everett to Seattle	50	45	50	100	84	92
Seattle to Tacoma	100	85	94	200	189	208
Tacoma to Kalama	60	45	50	120	80	88
Kalama to Longview	80	52	57	160	94	103

BST Associates. 2004 Marine Cargo Forecast: Original source: MainLine Management and HDR, Inc. (Page 115). Includes passenger trains.

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# Address Freight Constraints on Mainline Rail



# Address Freight Constraints on Mainline Rail

## Description of Proposals

I. Policy: Support growth in east-west mainline rail capacity and port-rail connections, and preserve rail yards in metro areas.

Strategy: Support the BNSF Railway Company's (in track miles and volume the state's largest railroad) preliminary plan to:

- Add siding capacity along the Columbia River Gorge
- Enlarge Stampede Pass to accommodate double-stacked trains
- Complete the Swift siding improvement at the Canadian border
- Complete the Vancouver rail project



II. Policy: 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.

Strategy: Study the impact of projected growth in freight and passenger rail services on capacity in the I-5 rail corridor.

# Maintain the Columbia- Snake River Trade Corridor

## Description of Proposal

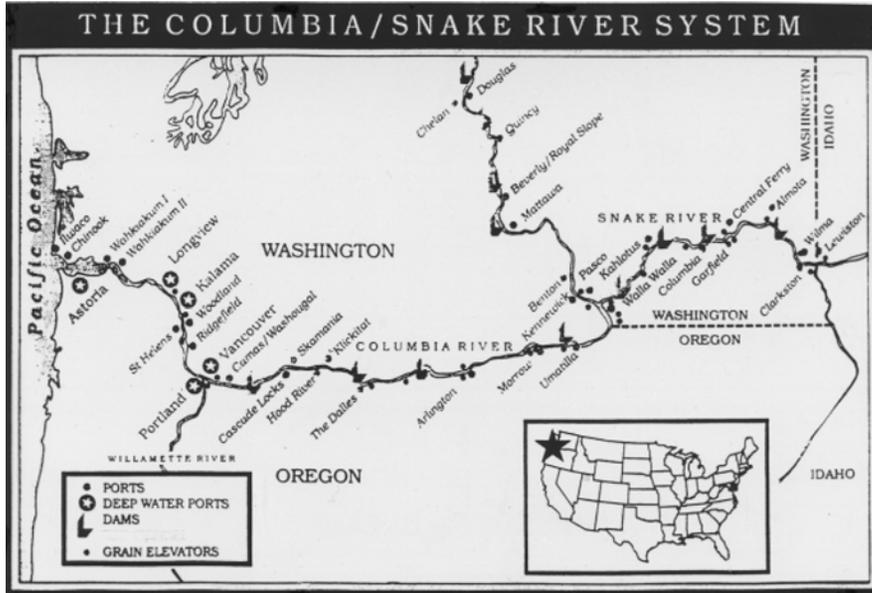
**Implement a 20-year Dredge Management Plan** to stabilize the Columbia-Snake River barge system.

**Columbia River Channel deepening** so downriver ports can handle larger ship sizes and maintain existing trade.

**Mid-Columbia & Snake River Lock Repair & Retrofit:** eight dams in need of near-term repair.

**Columbia River Jetty Repair** to keep sand from being deposited directly into the navigation channel during storms.

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5/6/2005

# Develop Statewide Core All-Weather County Road System

## What is the Problem?

Up to two months per year, Washington State agricultural growers and processors, manufacturers and timber/lumber businesses can't ship their products to market due to weight restrictions on county roads.

In a global marketplace, Washington producers inability to meet buyers' requirements causes loss of customers, and ultimately, loss of the state's competitive advantage.

## Description of Proposal

Identify, establish and fund a statewide core all-weather county road system to minimize the economic impacts of freeze and thaw-related road closures.

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# Air Cargo System Statewide Study

## What is the Problem?

Air transportation plays a significant role in the movement of international and domestic air cargo, but there isn't enough information on the origins and destinations of air cargo, value, and commodities shipped. There is also a need to understand air cargo constraints in the market place in order to identify strategies to move cargo more efficiently and effectively across state, international, and jurisdictional boundaries.



## Description of Proposal

A statewide air cargo study is needed to identify air cargo trends, origin and destination of cargo, and strategies to facilitate efficient movement of air cargo. Ongoing regional planning efforts may help guide the development of a statewide air cargo study, such as information from the upcoming Puget Sound Regional Council air cargo freight access study.

## Description of Benefits/Impacts of Implementing the Proposal

Identification of strategies and performance measures to increase the overall effectiveness of air cargo and movement of freight in Washington State.

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# Ideas for Additional Study?

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 did we miss?

We want the conversation about freight strategy to involve all the players

For a full copy of the freight report please go to:

*[http://www.wsdot.wa.gov/freight/images/WTP\\_FreightUpdate.pdf](http://www.wsdot.wa.gov/freight/images/WTP_FreightUpdate.pdf)*