

# **Freight Transportation Economic Impact Assessment Of the I-5 and I-90 Closures in 2007-2008**

**Steve Reinmuth**  
Chief of Staff

**Paula Hammond**  
Secretary of Transportation

**David Dye**  
Deputy Secretary of Transportation

**Maritime and Port Security Conference  
June 12, 2008**



# **Washington State's Freight Systems support broad industry sectors.**

## **I. Global Gateways**

International and National Trade Flows Through Washington

## **II. Made in Washington**

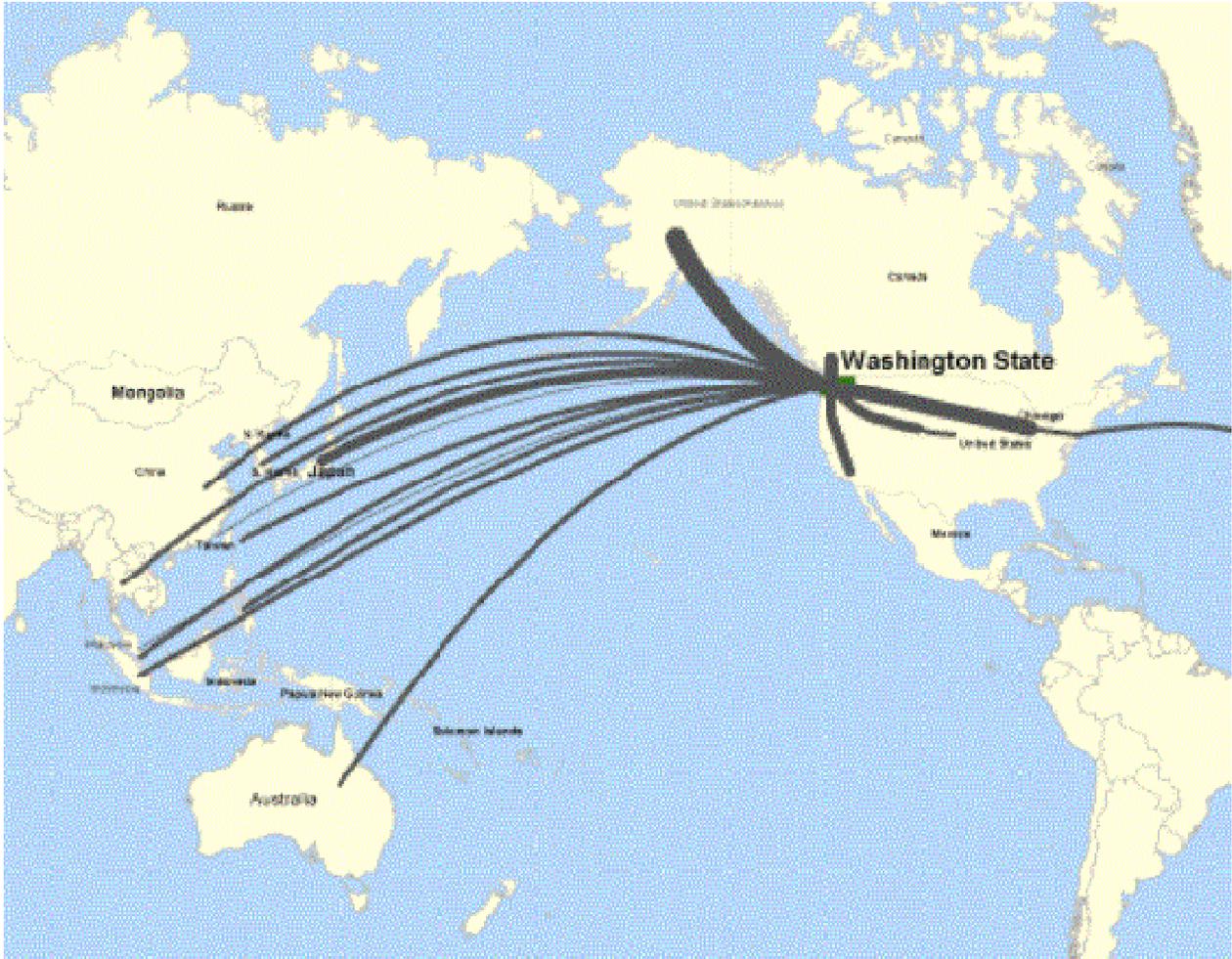
Regional Economies Rely on the Freight System

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

Washington's Retail and Wholesale Distribution System

# I. Global Gateways

International and national trade flows through Washington



## II. Made in Washington

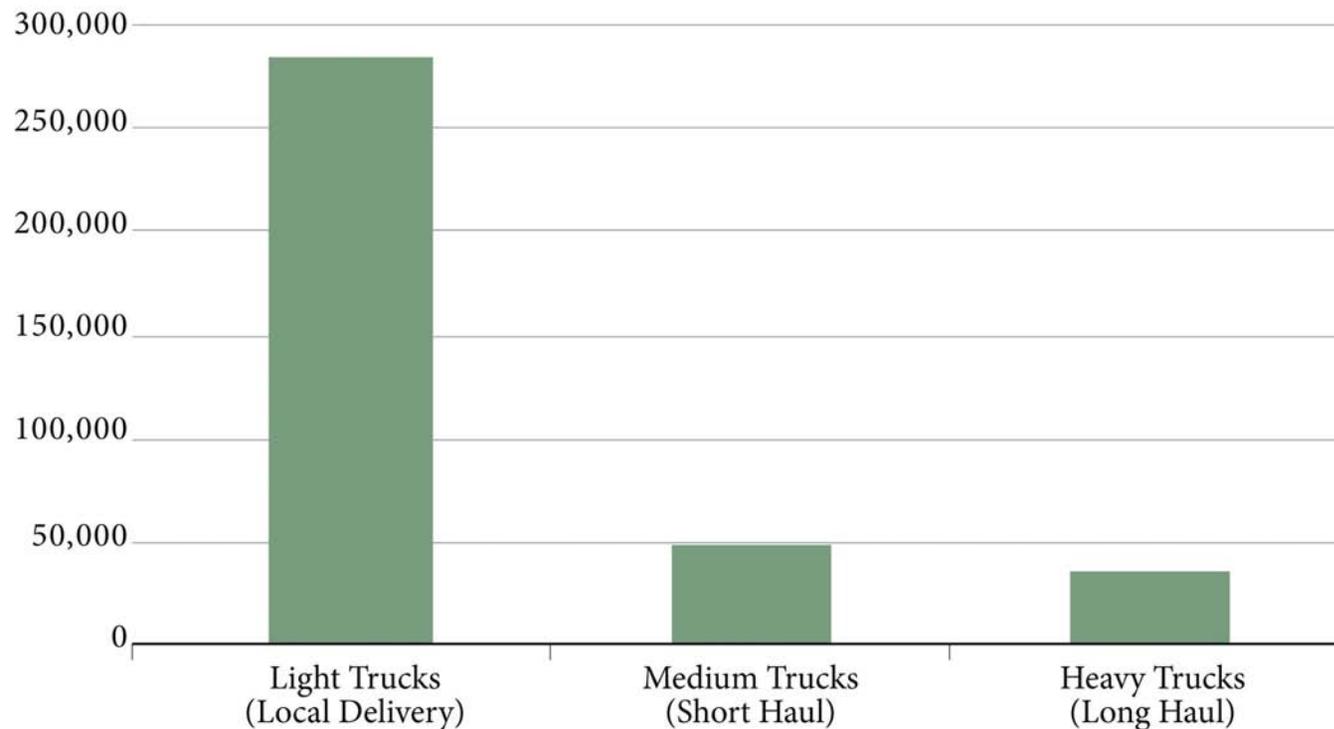
Regional Economies Rely on the State's Freight Systems:  
Manufacturing, Construction, Agribusiness and Wood Products Sectors



### III. Delivering Goods To You

Washington’s retail and wholesale distribution system

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



# What happened during the I-5 closure?

**December 2007** - Record-high floodwaters caused the complete closure of a 20-mile section of I-5 near Chehalis from December 3 – 6.

- First full closure of I-5 since 1996.
- 65 other state highways were closed due to flooding and landslides.
- The two detours open to all trucks added 476 or 577 miles to trips taken around the closure.
- WSDOT crews opened one lane in each direction to commercial vehicles on December 6.
- I-5 was completely re-opened to all traffic on Friday, December 7.



*Aerial photo of flood damaged I-5 – December 7, 2007*



# What happened during the I-90 closure?

Record snow fall and warm temperatures in the mountain passes closed I-90 at Snoqualmie Pass from January 29, 2007 through February 2, 2008.

- Extreme weather conditions created avalanche danger and multiple avalanches.
- Highway 2 at Stevens Pass and Highway 12 over White Pass also had to be closed for avalanche control and to clear accidents.
- Severe weather caused the closure of one of the detours (I-84 between Pendleton and La Grande) for a time cutting off all east-west detour routes.
- The total time of closure for I-90 during the 5-day period—from January 29 through February 2—was 89 hours.



*Tanker truck stuck on I-90 after an avalanche – January 2008*

# I-90 Closure Detour Map



# How is WSDOT helping freight-dependent industries recover from disruptions?

WSDOT's research on freight system resiliency has documented that freight shippers and carriers place a high value on accurate, real-time information.

Based on that research, WSDOT started a new freight notification system during the I-5 closure in December 2007, and improved it during the I-90 closures in January and February 2008. Key elements of the notification system include:

- Send targeted messages in simple English: use maps and diagrams.
- Focus on road conditions, and safe and legal detours for trucks.
- Provide predictive information so shippers and carriers can plan ahead.
- If detour use is limited, be very specific about allowed use.
- Send notices whenever there's a change in conditions, and tell customers when the next notice will be sent.
- Distribute notices direct to WSDOT freight customer listserve and through multipliers.

# WSDOT Freight Notification System At Work

Freight targeted communications were sent to almost 3,000 member e-mail listserv during the closures. Messages were sent every two to four hours or when significant changes occurred.

From: WSDOT Freight Sent: Thu 12/6/2007 5:12 PM  
To:  
Cc:  
Subject: One lane in each direction will open on I-5 within the next hour for commercial trucks only

**Freight System Users Update**  
December 6, 2007 - 5 p.m.

**One lane in each direction will open on I-5 within the next hour for commercial trucks, only**

**The Washington State Department of Transportation will open I-5 for commercial vehicle traffic over 10,000 gross vehicle weight between mileposts 68 (south of Chehalis) and 88 (south of Olympia) sometime between 5 and 6 p.m tonight.**

No oversized loads allowed.

One lane will be open in each direction for commercial vehicles. Trucks will not be allowed to exit or enter the freeway between milepost 68 and milepost 88.

For a one-mile section all trucks will use the southbound side of the freeway without median barrier. To enhance safety, Washington State Patrol troopers will talk to each truck driver before they enter the area.

Truck drivers can expect mud, water on the roadway and other flood-related damage. WSDOT is monitoring the road surface and traffic will be stopped to perform repairs if necessary.

No passenger vehicles will be allowed at this time. All passenger vehicles will be turned away.

For more information on road conditions, detour conditions and project updates, please visit the WSDOT website at [www.wsdot.wa.gov](http://www.wsdot.wa.gov).

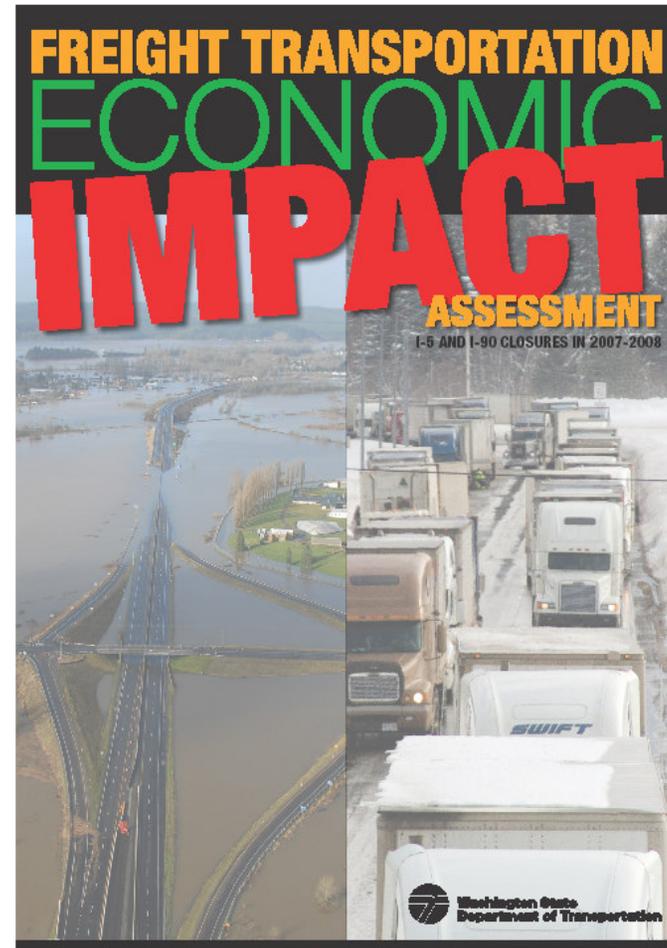
# We knew that the I-5 closure caused substantial impacts.

WSDOT worked closely with the Washington Trucking Association and shippers during and after the closure to communicate closely and determine the impacts to freight system users and resulting statewide economic impacts.

- Trucking companies reported that the I-5 detours took a substantial toll on their businesses, requiring double the resources—including drivers, power units, and trailers—to make the longer trips.
- Trucking companies reported that the additional cost of taking the detours was between \$500-\$850 per *truckload*.
- The closure also disrupted deliveries to southeast Alaska through the Port of Tacoma.
- President Bush declared Washington state a major flooding disaster.
- Estimated highway damage from the storm was \$18 million for state routes and another \$39 million for city and county roads.

# But we didn't know the full extent of the impact.

- In order to give the Governor, the legislature, and our state's citizens a more accurate estimate of the statewide economic impacts caused by the two freight transportation system disruptions,
- The Washington State Department of Transportation Freight Systems Division and the Research Office initiated the "Freight Transportation Economic Impact Assessment of I-5 and I-90 Closures in 2007-2008" Study.



# Why did WSDOT conduct this study?

- During the I-5 closure, WSDOT estimated that the economic impact was \$4 million per day in additional costs to truck companies.
- This figure was based on the traditional method used to estimate freight-related economic impacts which multiplies a predetermined 'value of time' by the number of trucks delayed on the road.



This study shows that the actual total costs to the state's economy were much higher.

## How did WSDOT conduct this study?

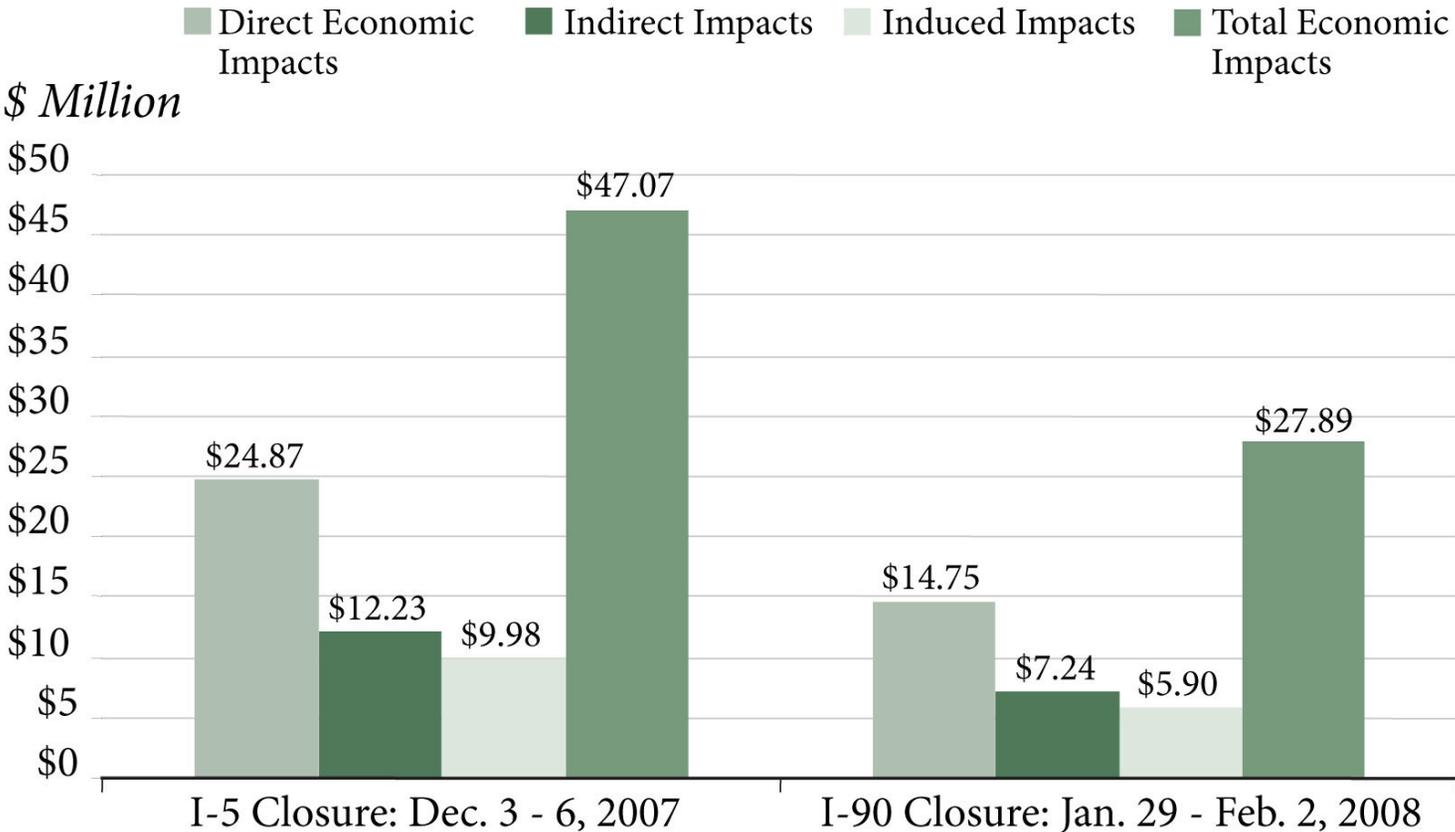
- This research began by quantifying the state's freight-dependent industries' actual additional direct costs and lost sales revenue due to the events.
- WSDOT contracted with Washington State University (WSU) to conduct a statistically-valid survey of Washington State freight-dependent industries. WSU completed 2,758 surveys in March 2008.
- Then the WSDOT Freight Systems Division used the State's Input-Output model to estimate statewide economic impacts.

# What was the total economic impact caused by the disruptions to Washington's freight systems?

- **The total loss to Washington State's economy due to these two freight system disruptions was close to \$75 million.**
  - Over \$47 million was lost due to the impact of the I-5 closure in December 2007.
  - Almost \$28 million of losses were caused by the I-90 closures from January 29 through February 2, 2008.
- **The total economic loss includes:**
  - **Direct impacts** - the additional costs and lost sales revenues incurred by freight-dependent industries during and immediately after the closures. It also includes investments companies make to lessen the impacts of future disruptions.
  - **Indirect damage** - occurs to the freight-dependent sectors' suppliers and customers.
  - **Induced impacts** - happen as decreased spending and lower efficiency cascades through the state's economy.

# What were the business impacts?

## Direct, Indirect, Induced, and Total Impacts on Economic Output Due to the I-5 and I-90 Winter Storm Closures



# How were citizens impacted?

## Lost Employment

- Due to these two freight system disruptions, Washington State didn't reach its economic potential for the year.
- The economy was smaller than it would have been, so the state lost jobs.
- The study shows that approximately 460 more people would have been working in the state during the year following the events if the closures had been prevented.

## Lost Personal Income

- Workers and families throughout Washington State lost over \$23 million in personal income from the two freight system disruptions.
- The I-5 closure is responsible for \$14.5 million in lost personal income and the I-90 closure for \$8.6 million.
- These are lost dollars that will never reach citizens' pockets.

# The public sector lost state tax revenue.

- The state of Washington also lost tax revenues due to the reduction in economic activity caused by the closures.
- When freight-dependent industries lost sales and produced less taxable revenue, the state lost close to \$4 million in tax revenues.



*Trucks and travelers lined up on I-90 waiting for Snoqualmie Pass to open – January 30, 2008*

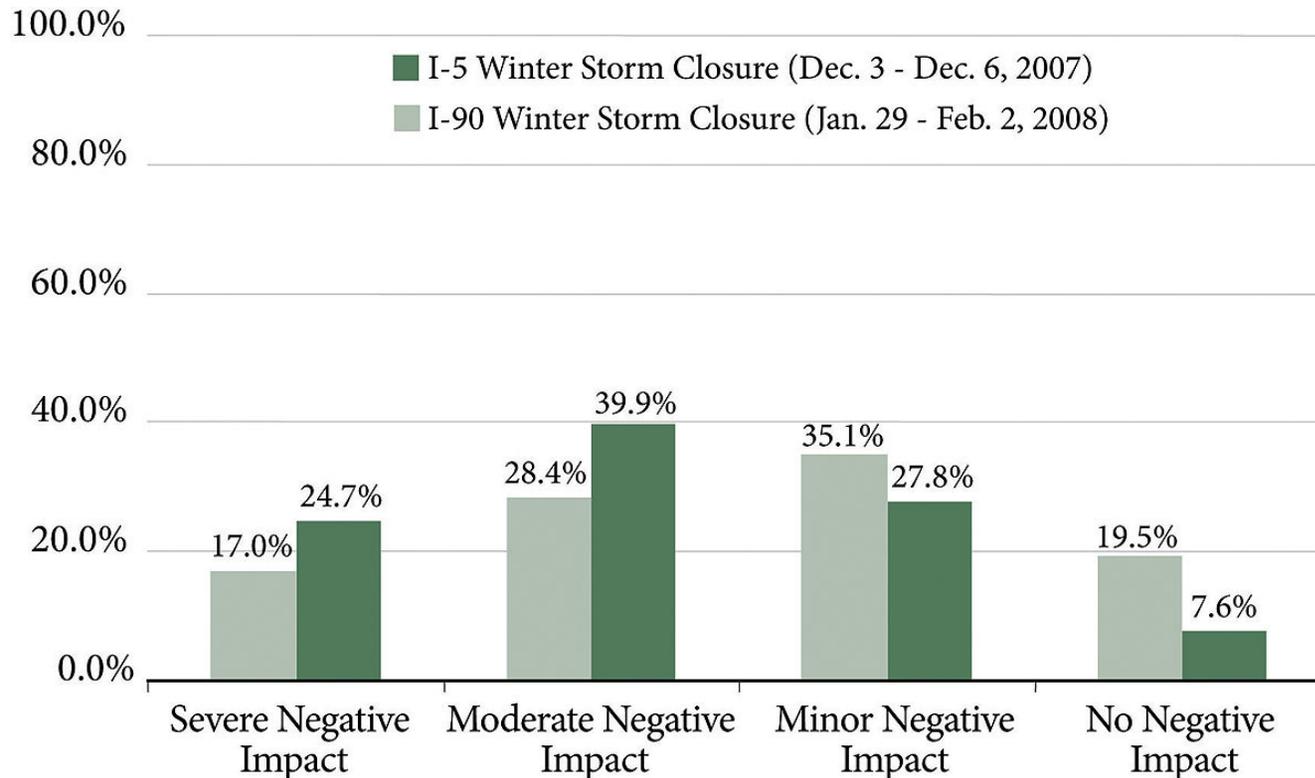


*Trucks and travelers lined up waiting for I-5 to open – December 2007*

# How severely were companies impacted?

Of the businesses impacted by the I-5 closure, 65 percent stated that the impacts were severe to moderate, while 45 percent of businesses impacted by the I-90 closures made the same statement.

## The I-5 and I-90 Winter Storm Closures – Severity of Impact to Businesses



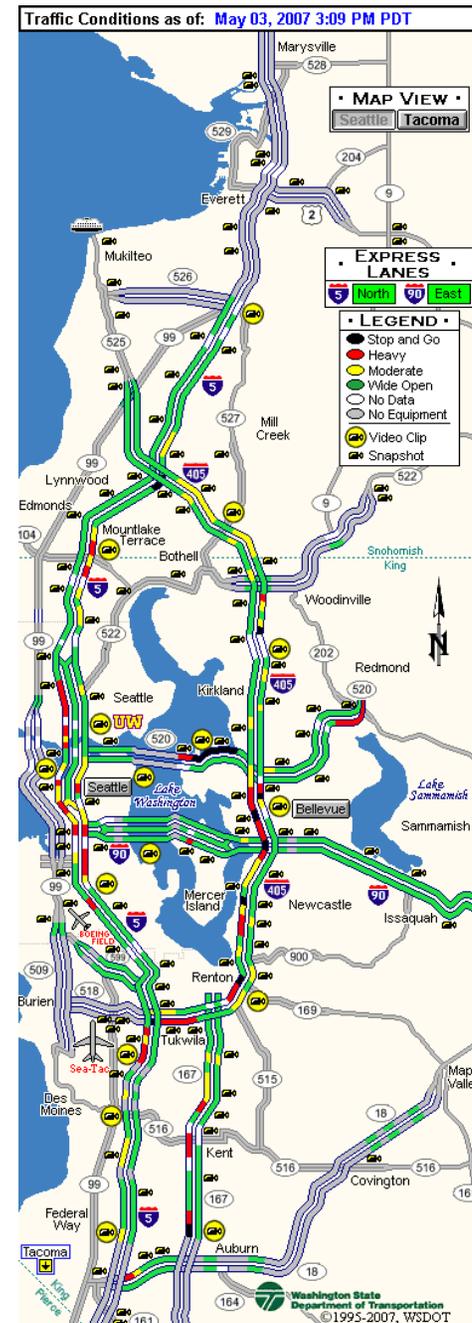
Source: WSU/WSDOT Economic Impact Survey of I-5 and I-90 Winter Storm Closures; 2008.

# Resiliency improvements add capacity to the freight system, everyday.

## 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.



# Multi-state operations for freight

WSDOT has also developed and hosts a Traveler Information website – targeted for truckers - for the I-5 Corridor linking information from Washington, Oregon and California. Please see [www.wsdot.wa.gov/partners/TIO](http://www.wsdot.wa.gov/partners/TIO) for:

- Detailed traveler information,
- Truck stop and rest area locations,
- Local weather conditions,
- Truck permit information, and
- Road restrictions



For more information please contact:

Barbara Ivanov  
WSDOT Freight Systems Division Director  
[ivanovb@wsdot.wa.gov](mailto:ivanovb@wsdot.wa.gov)



**Washington State**  
**Department of Transportation**