

# Overview of the CVISN Program In Washington State

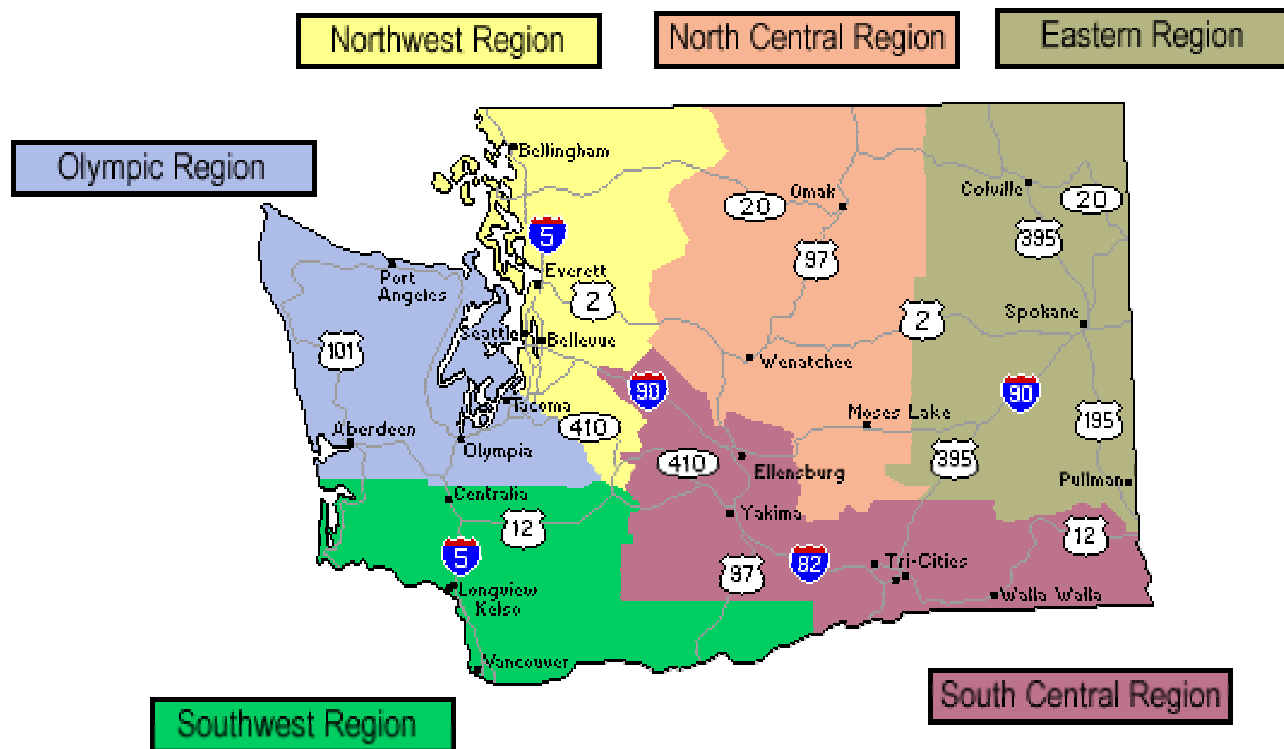
**2008 Smart Roadside Workshop**

*Gordon Rogers*

**Bellingham, WA MPO / IMTC**

**April 29, 2008**

# WSDOT Regions





# Washington - British Columbia Trade Region

# Congestion at the Washington/B.C. Border

- **4th busiest commercial crossing on U.S. / Canadian border**
- **Over 1 million trucks here annually**
- **Truck trips have almost tripled since 1991**



# Congestion at the Border



# Transcore Proposal/Project

- **CVISN I-5 corridor proposal by Transcore**
- **Internet based communication system**
- **Security concerns**
- **Springboard for other projects**

# Addressing Border Congestion

truck with electronic driver, cargo, and carrier information



enrolled as trusted carrier



using a dedicated electronic lane at border

=

a truck by-passing border queues?

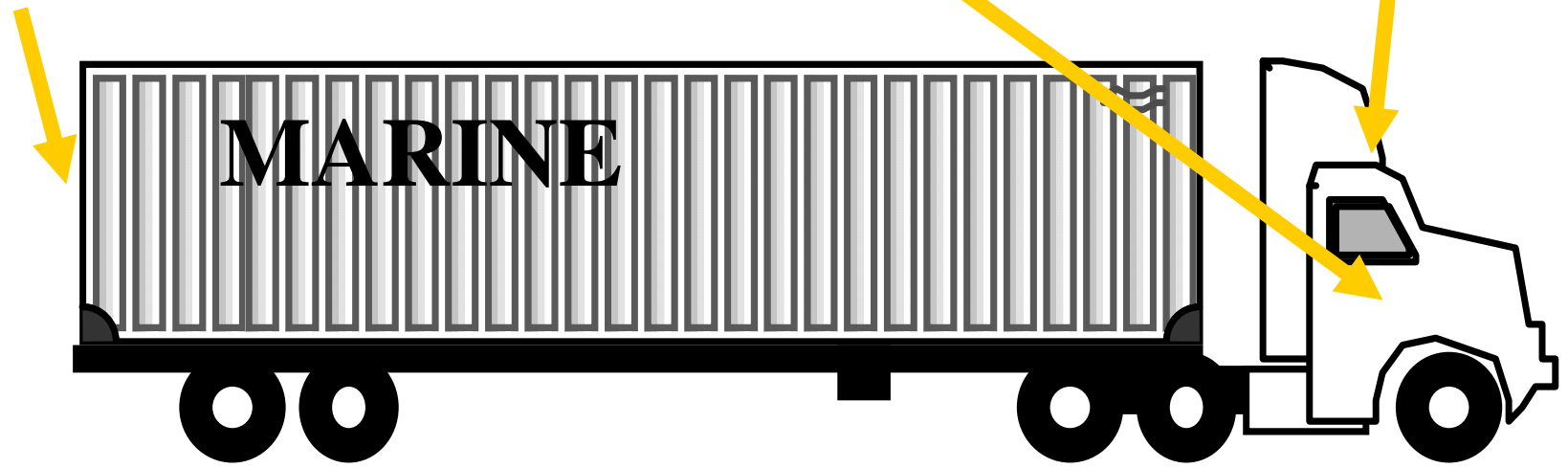
# Transponder Truck: Integrating the Tests

**Integration Software**

**Cargo:**  
electronic  
door seal

**Truck:** CVISN  
transponder

**Driver:** NEXUS, FAST  
card or biometrics





# Major Funding Partners

## ■ Public

- Washington State DoT
- U.S. DoT
- British Columbia Ministry of Transportation
- U.S. Customs (Pending)
- U.S. Dept. of Agriculture

## ■ Private

- TransCore
- American President Lines
- Westwood Shipping
- Maersk Sealand
- Trucking Companies and Associations

# Truck Transponders: Two Projects

- Northbound in-bond container export system
- Southbound commercial vehicle system



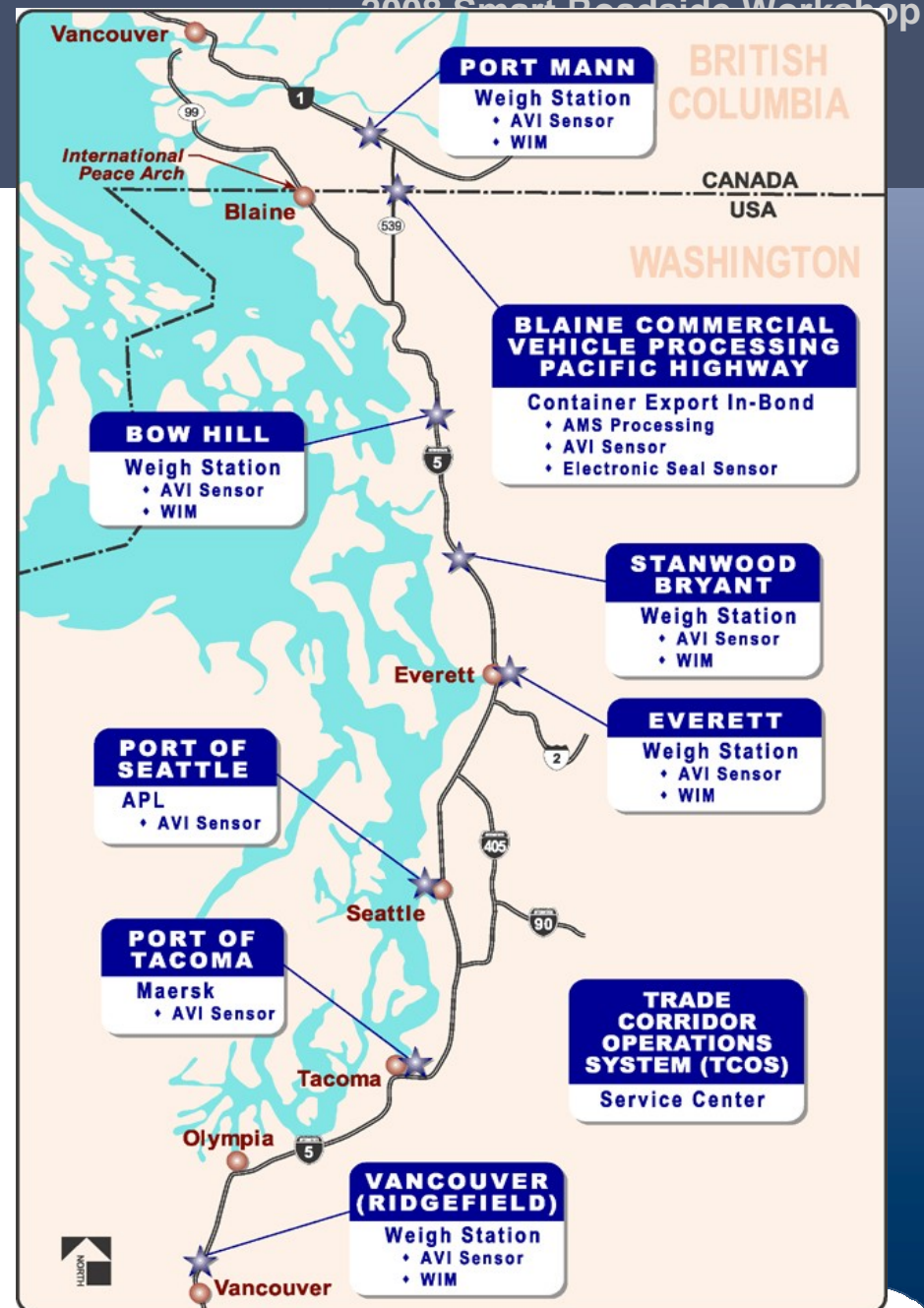
# In-bond System

Transponders facilitate movement of “*in-bond*” containers between ports of Seattle and Tacoma and Canada



# Northbound Truck Transponders

- Trucks carrying containers depart on in-bond line release
- Transponders in truck's window track in-bond containers
- Truck transits to border under in-bond condition
- Software clears bond automatically as truck reaches border
- Allows Customs to pre-arrive northbound trucks



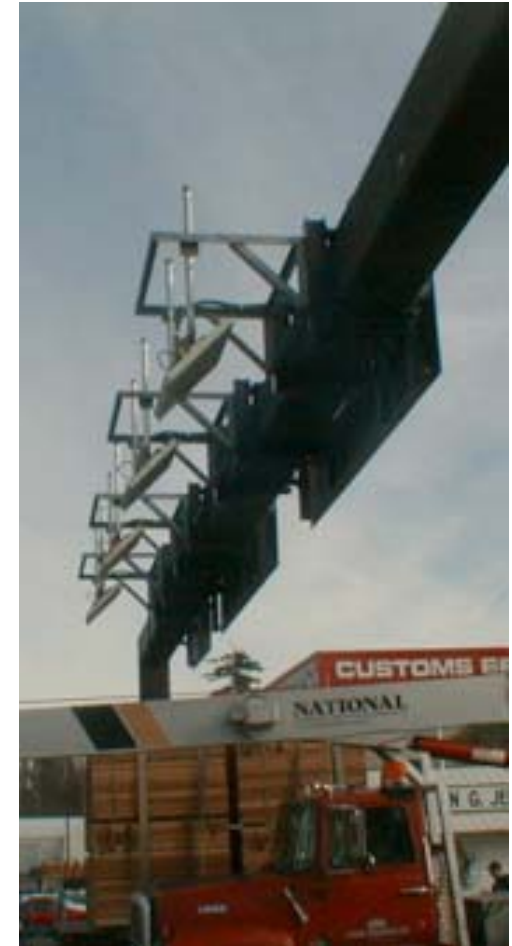
# In-Bond Systems uses CVISN Transponder

- Used for weigh-in-motion
- Available to safe and legal carriers
- Costs \$50 through state of Washington
- “Active” tag with five year battery



# Southbound System

- Trucks hauling southbound in-bond containers are tagged
- Assists Canada Customs in tracking exported cargo
- Provide U.S. Customs with advance notice of in-bond imports headed for ports
- May automatically clear bond at ports



# Transponder-Oriented Staging Area

- No advantages to transponder truck if stuck behind untagged trucks
- Constructed staging area in B.C. at the approach to the U.S. customs
- Provides access for transponder equipped trucks



## Seal used in Washington pilots

- Disposable transponder for container door
- Costs \$5 to \$40?
- Tamper indicator message
- Readable at 35 MPH
- Transmits unique ID number





# Testing Electronic Container Seals



# eSeal being Programmed



# eSeal Installed



# eSeal Readers at Border



# Two Operational Tests of eSeals

- **US Department of Agriculture: Prohibited food stuffs**
- **Westwood Shipping Lines: Auto parts from Japan**

# More Transponder Use Creates Opportunities

- **Transponders are an electronic device used for vehicle-to-roadside communication**
- **Increasingly used in trucks for weigh-in-motion, tolls, Customs, etc**
- **Transponders plus a network of roadside readers can turn trucks into travel time probes**

# USDA eSeal Test

- **In-transit containers of prohibited foods “lost”**
- **Track containers from Texas and Port of Tacoma to Canada**
- **Reader at border indicates when containers have left country**

# Westwood Shipping eSeal Test

- Track auto parts from Japan through Port of Seattle to Canada
- Customs inspectors read seals at Port of Seattle
- Read Containers at Border





# Advantages of the Seal

- **Electronic data reduces paper work, increase accuracy**
- **Security – more positive ID of container**
- **Track freight in ports and on highways**
- **Step towards tagging all containers**
- **Focus enforcement resources**

# Expansion of Container Seal Field Operational Test

- **New federal TEA-21 and state funding**
- **Cooperative project with British Columbia and Transport Canada**
- **Multiple public and private partners**
- **Focus on a system and not just devices**

# Related Efforts

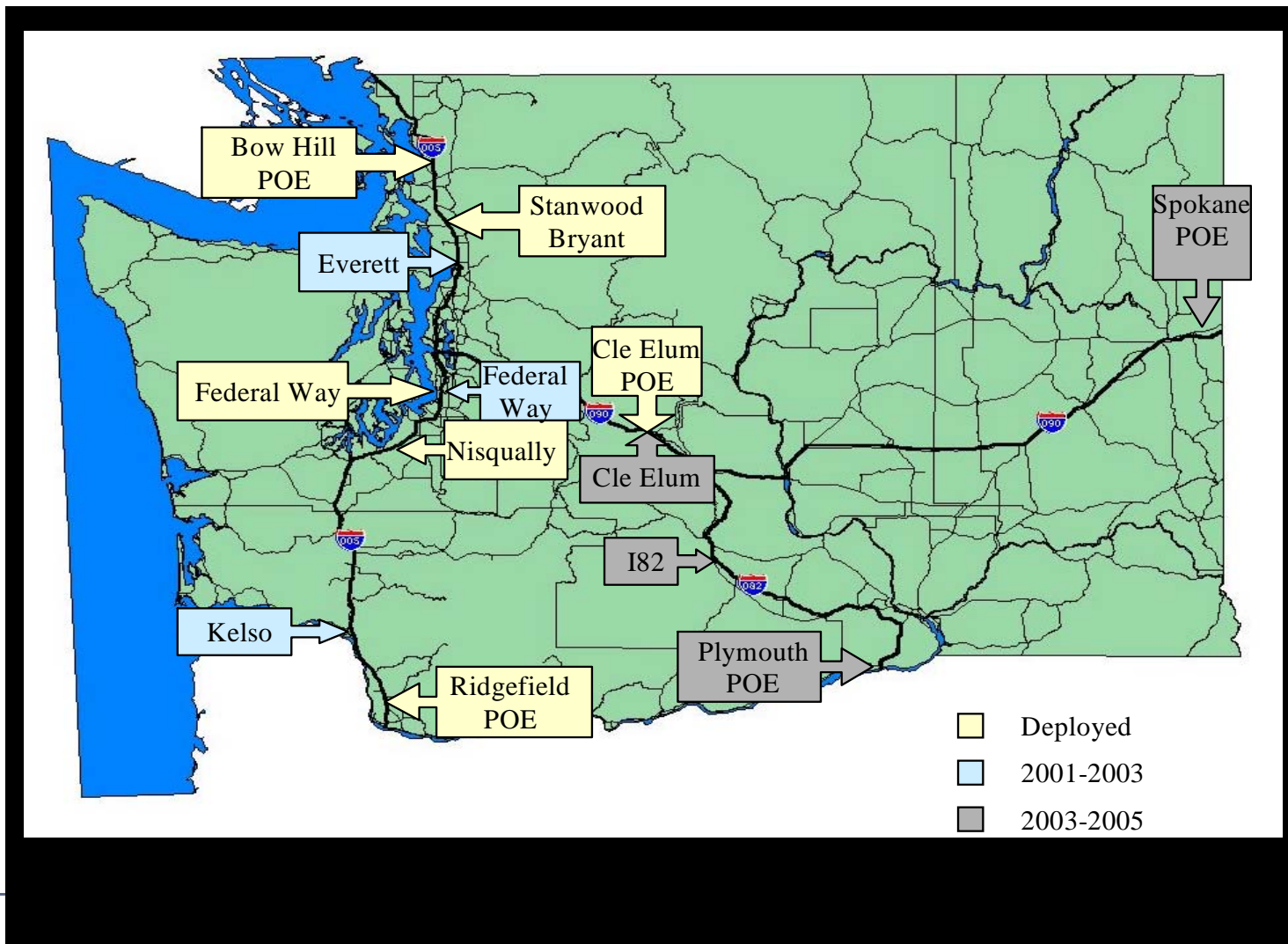
- **Project to integrate with other initiatives: (FAST, CVISN, ITDS-ACE, C-TPAT, TWIC, ATIS, etc.)**
- **Independent federal evaluation (SAIC)**
- **Independent review of state's border strategy (IBI)**
- **Discussions with truck manufacturers**
- **Push for a West Coast trade corridor**

# Transponders

- 30,000 CVISN transponders (and growing) in use in Washington for weigh-in-motion
- Readers along Interstates in Washington



# Weigh-in-Motion Stations (Readers)



# Other Transponders Showing Up on Roads

- Some electronic container door security seals are transponders
- Custom's FAST truck windshield tags
- Toll Transponders



# A Bonus – Rural Truck Performance Data

- **Increasing need to know trucks' travel time for planning and policy needs**
- **Many sources of travel time data are expensive (manual counts, floating car)**
- **Transponder reads offer a partial and low cost source of performance data**

# Transponders Benefits

- **Low cost**
- **Serves rural areas**
- **Increasing number of readers and transponders on highways**
- **Provides rural roadway performance data**
- **Can be linked between multiple states (Washington linking with Oregon)**



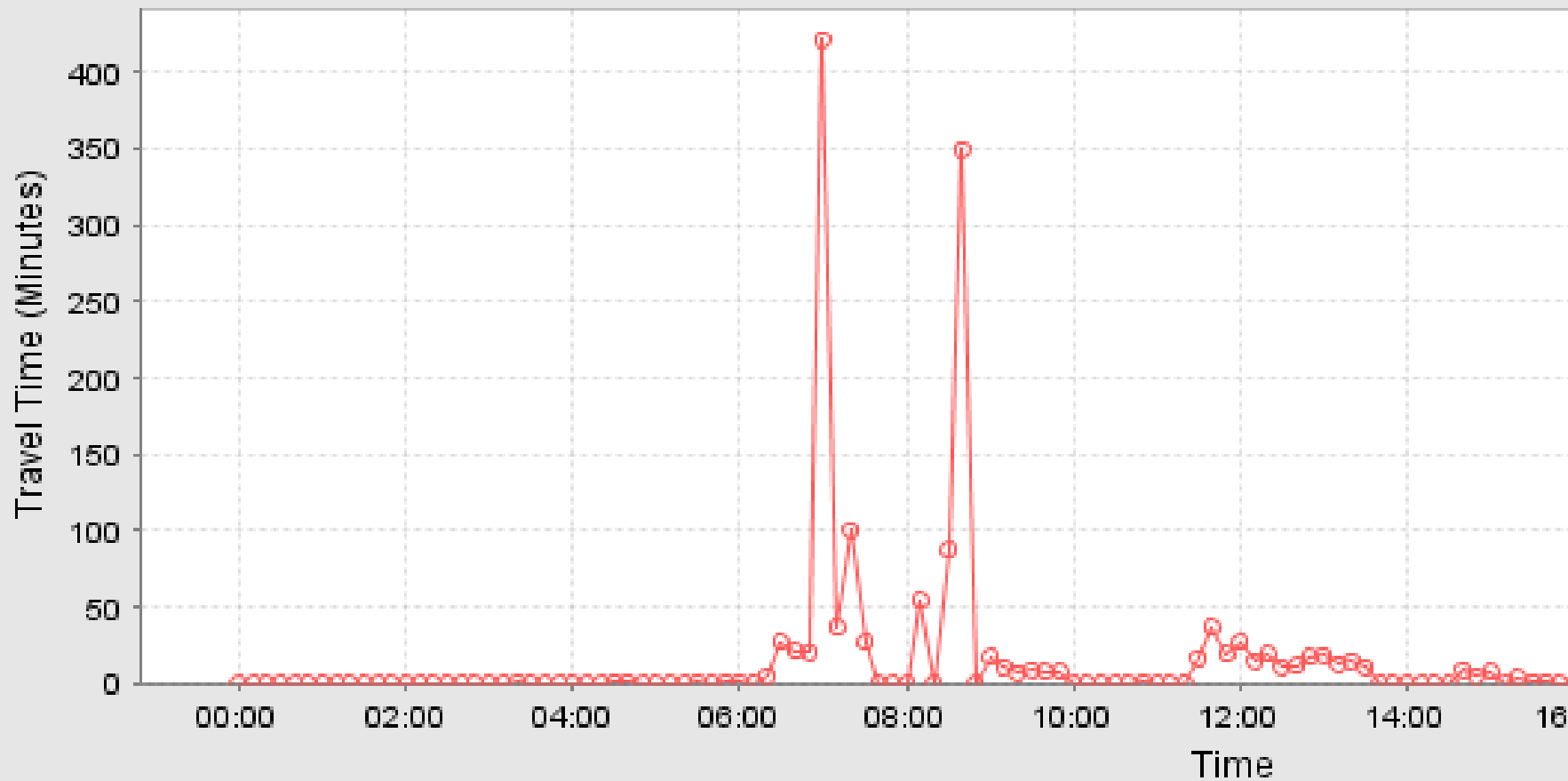
Started: Apr 1, 2005

Ended: Apr 2, 2005

Distance: 0 miles

## Minimum Travel Times

### TravelTimes



# WSDOT Northwest Region Projects

## ■ ITS Project

- **Border Crossing ATIS System**
  - Will place devices along all four routes
  - Includes CCTV, data stations, VMS, CMS, HAR, and License Plate Readers (LPR)
- Intent is to provide travelers with travel time and congestion information to provide flexibility on which route to use

# BC Ministry of Transportation Project

- **Southbound Border Crossing ATIS System**
  - **Will place devices along two routes:**
    - Route 99 / I-5
    - Route 15 / SR 543
  - **Will allow drivers to make decision on which crossing to use as they approach**
  - **Devices include CCTV, DMS, HAR, LPR**
  - **Status:**
    - Design complete by 3-31-02
    - Construction complete by 3-31-03

# Border cams

- **Four cameras currently operational on I-5 and SR 543 in Blaine**
- <http://www.wsdot.wa.gov/regions/northwest/traffic/bordercams/>

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This camera is pointing south  
I-5 at D St (South) © WSDOT



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This camera is pointing north  
**I-5 at D St (North) © WSDOT**



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# What's next?

- **Capital funding**
- **M & O funding**
- **Data stream generation**
- **Data management**

# Credits

**Dr. Ed McCormack, University of Washington**

**Peter Briglia, TransNow**

**Mike Swires, PE, WSDOT**

**Anne Ford, PE, WSDOT**