

## WSDOT Washington Transportation Plan – Issue Update

October 8, 2004

In this News Alert, we continue to share some of the data we've been finding about several key issues areas that will help shape decisions about future transportation strategies and investments. There are 10 issue areas that WSDOT is exploring as it develops its update to the 20-year transportation plan. Over the summer, a series of workshops with the State Transportation Commission was completed on nine of the issues. On October 19, the Transportation Commission will host a meeting to share this information and hear the perspectives of transportation interests from across the state related to these findings.

In the last issue of the alert, we brought you information about Safety, Health and the Environment, and Preservation. This week, we'll look at some of the data we are finding about other areas we've explored. These will be included in the discussion at the Commission's October 19 meeting:

### **Bottlenecks & Chokepoints System Efficiencies Moving Freight**

### **Bottlenecks & Chokepoints**

Washington State is growing, and over 80% of that population growth will occur in the major urban areas. Along with population growth, travel demand is growing and the demand/capacity imbalance will continue to grow in the future. Traffic congestion occurs mostly in the urban areas, especially Puget Sound, Vancouver, and Spokane. In fact, 92% of all delay on highways occurs in these areas.

While there are many plans for system expansions throughout the state (over \$30 billion for state highways alone) there is not enough funding to meet all these needs. A clear and more affordable strategy could be targeted investments. As exemplified by the 2003 transportation funding package, real improvement to traffic flow can be made at specific locations to address bottlenecks and chokepoints on the highway system.

**Bottlenecks** are places where roadways physically narrow, causing traffic to become backed up. For example areas where a lane drops on freeways, or shoulders become narrow. **Chokepoints** are places where delay occurs because of traffic interference and/or the roadway configuration, such as an area where traffic merges at an interchange or a seasonal road closure. Bottlenecks and chokepoints are not always measured by congestion delay – many rural roads have conditions where small-scale investments, such as a passing lane, would improve traffic flow.

What are the trends? Here's a sampling:

- In Washington, travel is up by 91%, but lane miles have only increased by 8% from 1980 to 2002. Clearly, we're not keeping up with demand.
- Statewide, vehicle hours of congestion delay will increase from the 335,000 hours today to 1.4 million hours per day by 2025. In the same time period, congestion will increase delay for trucks from 37,000 hours per day in 2004 to 130,000 hours per day.
- About 85% of the statewide delay occurs in the Puget Sound area. Daily vehicle hours of delay is estimated to increase from 285,000 hours today to over 1.1 million hours in 2025 if no major transportation investment is made beyond the currently funded projects.
- In the Vancouver area, congested highways will increase from the 25 miles today to over 85 miles – nearly 70% of all state highways in the region. A similar condition will occur in the Spokane area, with congested highways increasing from 30 miles today to over 100 miles – over 40% of all state highways in the region – by 2025.
- Roads that have seasonal closures for spring thaw are bottlenecks for freight movement. Avalanche closures on I-90 Snoqualmie Pass is a significant source of delay affecting cross-state travel and freight movement.
- By 2025, transit in the Puget Sound area will account for 25% of all peak hour southbound travel into the Seattle area.

Congestion affects the efficiency of the system. Targeted capital investments at bottlenecks and chokepoints cost less than full corridor projects and can result in recognizable reduction and delay and improved traffic flow. They may represent the biggest bang for the “short” buck to be invested in capacity expansion solutions.

For additional details on the Bottlenecks & Chokepoints in Washington, please [view the presentation](#) made to the Transportation Commission.

## Efficiencies

Efficiency in transportation is about getting the greatest utility from the existing system—using operational strategies to help improve traffic flow. Basic maintenance of the highway system is also necessary to keep the system running. This includes things like paving and patching roadways, snow and ice control, maintaining traffic signal and lighting, replacing guardrail, and cleaning and replacing signs, just to name a few.

On freeways, transit use and throughput in High Occupancy Vehicles lanes is a key measurement of system efficiency. Optimal freeway throughput of about 2,000 vehicles per lane per hour occurs at speeds of 45-50 miles per hour. And although the freeway is at optimal flow, traffic is very unstable at this point and any incident, surge or distraction will disrupt the flow causing congestion. Roadway capacity can actually decrease under congested conditions and lead to lost productivity. As traffic grows in peak periods, increasingly sophisticated management techniques are needed to maintain traffic flow.

What system efficiencies are being considered with the WTP update effort?

- Intelligent Transportation Systems (ITS) apply technology to help maintain vehicle throughput. ITS includes on-road tools like ramp meters, synchronized signals, and weather prediction devices, as well as traveler information technology such as 5-1-1 and 1-800 phone lines, Highway Advisory Radios, and web-based real-time travel information.
- High Occupancy Vehicle (HOV) lanes carry 33% of the people in only 18% of the vehicles, making freeway lanes more efficient. In 2002, transit operations in King, Snohomish, and Pierce counties accounted for 79% of the people carried on transit vehicles statewide. A 40-foot bus carries 20-40 times as many people as an auto.
- Washington has the largest public vanpool program in the country. About 1,310 vans and 62 VanShare groups operate in the Puget Sound region. Statewide, there are over 1,600 vehicles in operation every workday.
- System pricing is emerging as one of the primary ways to effectively maintain flow, allowing flexibility to match roadway capacity to traffic demands. Also known as

congestion pricing, this is a collection of strategies that levies fees based on actual use of the road. Examples include tolling road segments or geographic areas, variable pricing based on demand, and High-Occupancy Toll (HOT) lanes.

- Incident Response is a key strategy in getting roadways cleared and relaying information about roadway problems to motorists. Since IRT units began roving the I-405 corridor in 2002, the average time to clear a disabled vehicle dropped from 17 minutes to 10 minutes.
- Operational approaches must be viewed as part of a continuum and an integral part of our investment program: a commitment to maintain and operate the system, management techniques to maximize use of the system, and capital investment to expand the system are needed.

For additional details on the System Efficiencies issues in Washington, please [view the presentation](#) made to the Transportation Commission.

## Moving Freight

Freight movement is a key component to our state and national economic wellbeing. The three components to Washington's freight system—international gateways, transportation serving Washington's producers and manufacturers, and the retail and wholesale distribution systems—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 every day.

Washington is uniquely situated in the global trade market. In 2002, \$41.73 billion worth of goods left Washington bound for foreign markets and \$54.1 billion entered from around the globe. Port-related trade is growing, raising concerns about highway capacity, railroad capacity, and the ability of port connector roadways to handle the projected volumes.

Our state's regions have built strong economies based on industrial and agricultural clusters. They depend on an effective and efficient freight transportation system. Agriculture is big business in this state, supporting families and agribusiness in every corner of Washington. Our farmers and ranchers produced \$5.6 billion in food and agricultural products in 2002. In addition, Washington manufacturing represented \$88.3 billion in gross business revenues in 2003. Both of these industries depend on freight movement to receive supplies and to move products to markets.

Washington's distribution system is a fundamental local utility since without it citizens would have nothing to eat, nothing to wear, no spare parts, and no fuel for their autos and no heat for their homes. Included in this distribution system are garbage trucks that pick up over 12,000 tons of residential and commercial waste every day and deliver it to transfer stations and landfills. Fuel distribution, through pipeline, barge and/or tanker truck is another important part of this system. Washington State citizens consume 17.6 million gallons of petroleum every day. Without this system, the economy of the region would no longer function.

What are we finding?

- In 2002, almost \$96 billion in U.S. international trade passed through Washington's national and international gateways. Seventy percent of incoming trade has a destination outside our state.
- The ports of Seattle and Tacoma, combined, are among the top three marine container cargo complexes in North America, handling 8.2 percent of total U.S. container traffic and more than 3 million container units (twenty-foot equivalents units, or TEUs). About 76% of all international containers are transferred to rail and destined for Midwest and/or the East Coast.
- Our airports are critical for time-sensitive products, such as fish and perishable fruits. Sea-Tac Airport ranks 18 th in the nation by tons of cargo handled, the largest volume among the state's airports.
- Blaine is the busiest truck crossing in Washington, and the fifth busiest in the nation.

Cross-border truck volumes in Western Washington have nearly doubled over the past 11 years.

- Washington ranks third nationally in wheat production with 130 million bushels grown on 2.7 million acres. Most of that wheat, 85% is sold to export markets. About 92% of southeast Washington wheat is shipped to Columbia River ports.
- In 2003, manufacturing Gross Business Revenues in Washington were \$88.3 billion, 21.3 percent of the total State Gross Business Income. The sector employed more than 265,000 workers (13 percent of all jobs) and paid 16 percent of total wages in Washington. The Boeing Company is Washington's largest manufacturer, with \$22.4 billion in revenues in 2003.
- The retail and wholesale distribution systems represents up to 80% of all truck travel in urban areas. These are critical supply chains for everything we consume, including food, groceries, and gas.
- Final distribution of goods is almost 100% by truck. For example, a huge volume of freight activity serves the daily needs of grocery shoppers. A typical large grocery store (Safeway has about 200) receives two large semi-tractor trailer deliveries per day and ten to twenty 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.
- In 2001, Washington generated almost nine million tons of solid waste. A majority of that, 80%, is moved by railcar to the Roosevelt landfill in Eastern Washington.

For additional details on the Bottlenecks & Chokepoints in Washington, please [view the presentation](#) made to the Transportation Commission.

To learn more about the WTP, visit our website: <http://www.wsdot.wa.gov/planning/wtp/>

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