

**U.S. House of Representatives
Committee on Transportation and Infrastructure
Subcommittee on Highways and Transit**

**Congestion and Mobility Hearing
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Testimony of

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Introduction

Mr. Chairman and members of the subcommittee, thank you for the opportunity to testify today on the issue of congestion and mobility. This issue continues to be one of the most important to those living and working in the Seattle-area. I have been asked to focus on low cost, high benefit congestion solutions that the Washington State Department of Transportation is using in our Puget Sound region.

Getting the highest possible performance from our transportation investments through operational strategies makes the system work better for our customers and can recover lost productivity. Several factors contribute to system inefficiencies and congestion. Nationally it is estimated that half of our congestion comes from bottlenecks and poor signal timing on our system which happens on a reoccurring daily cycle where traffic demand exceeds roadway capacity. The other half of our congestion comes from non-reoccurring events as accidents, breakdowns, work zones, weather and special events.

Congestion not only causes delay, it also causes “lost throughput productivity” for the roadway system. That is, under congested conditions, even though the road is “full” of cars, they are moving so slowly that fewer vehicles actually pass any given point on the road. Typically, the maximum throughput of vehicles on a freeway, which is about 2,000 vehicles per lane per hour, occurs at speed of 42-51 mph, or about 70-85% of the posted speed. Yet when we need the most capacity, the throughput is cut in half on our Interstates, carrying only 1,000 vehicles per lane per hour. The goal is to manage the system to achieve maximum throughput productivity.

We have made vast investments into our highways and transportation systems. Making them as efficient and effective as possible, to meet both the reoccurring and non-reoccurring traffic congestion, is an important transportation systems management and operations goal at the local, state and federal levels.

In Washington State our Legislature and Governor have taken leadership to address congestion and mobility. Through significant investments into our highways with a 5 cent added gas tax in 2003 and an additional 9.5 gas tax in 2005. This November a possible regional transportation vote will occur for added investments in highways and transit. Even with these major capital investments, important operational systems need to be integrated with the designs to maximize the future efficiency of the urban corridors. While reductions to congestion are projected, a 37% growth in population over the next 25 years will not eliminate excessive peak period demands on our system.

We always need to consider travelers as our customers. Having trustworthy traveler information allowing the user to make informed choices as to how, when and where they will make their trip is important as well as providing travel time reliability.

Low Cost, High Benefit Congestion Relief can be obtained from Better Highway Management

WSDOT is using “tried and true” solutions to produce benefits on our highway system. These low cost strategies have been shown to produce high benefits in relieving congestion.

Traffic signal synchronization on arterials has long been recognized as one of the most effective techniques for cutting traffic congestion on arterials and arterial networks. Some studies show that the benefit of reduced delay compared to the cost of synchronization may be as high as forty to one.

Traffic signal synchronization works, but it must be constantly adjusted and refined as traffic patterns change. Very few states and cities adequately fund traffic synchronization work, in part because it provides no “ribbon-cutting” opportunities. Full funding of traffic synchronization is one of the easiest and cheapest way to help relieve traffic congestion.

Ramp Metering has been used in Washington State now for nearly thirty years and is on all of our major Seattle-area freeways. It has proven to be highly effective in maintaining and increasing freeway throughput. Past ramp meter activations have reduced accidents by over 30%. The downstream mainline flows improve and overall volumes increase.

Accidents and disabled vehicles disrupt traffic much worse than “regular” congestion. Twenty five percent of our congestion comes from incidents. The ability to have even a “reliable travel time” is destroyed with an incident. For every minute a lane is blocked, up to ten minutes of congestion may result. Quick, accurate detection of incidents is important as well as coordinated State Patrol and emergency response teams.

Washington State Department of Transportation uses roving incident response drivers to assist in highway clearance. Faster clearance not only opens travel lanes, but reduces the risk of secondary accidents (rear-enders in the back-ups) that block the roads all over again.

Highway construction and maintenance zones cause ten percent of our congestion. Lanes are narrowed, or even closed, and traffic detours and neck-downs are frequent accident locations, making matters worse. We look at strategies in our planning stages to consider how mobility impacts throughout the metropolitan area can be managed and coordinated between jurisdictions.

We use incentives for contractors to minimize traffic disruption, enhance law enforcement in work zones, schedule construction work to off peak traffic hours, and consider total corridor closures for expedited project completion. Rather than the traditional construction methods of turning on the technology components of a project as a last order of work, we are looking at advanced ITS, transit and demand management

activities before or early in our project construction to gain the most throughput and safety on our urban highways.

Web based traveler information has expanded greatly that now allows anyone at any time to check cameras on travel and road conditions, see real time flow depictions to understand where blockages and congestion are, and to have real travel time information for their trip planning. We provide real time information on 36 major travel corridors that are updated every 5 minutes. This information can greatly affect a person's choice of mode, route and time of travel. On one day in November 2006, during a storm event, we had 14 million page views in a single day.

Incorporating good solutions now being implemented overseas as “Active Traffic Management”

Many of the low cost, high benefit highway management techniques come from aggressively funding and implementing Intelligent Transportation System strategies that have been developed by the states and industry with FHWA guidance. We have made good progress in the U.S. and it remains an important priority.

Based on a 2006 international scan of European countries to review their congestion management strategies, we are studying in the central Puget Sound region how to build on our ITS work with strategies they refer to as Active Traffic Management. We observed that countries such as Germany, England, The Netherlands and Denmark are applying strategies from the U.S. such as ramp metering, HOV lanes, incident management, work zone management and traveler information. We also observed they are more aggressively applying lane control signals, variable speed limits to harmonize their traffic flow, opening up to traffic hard shoulders during the peak periods and dynamic re-routing of traffic.

Information suggests congestion related accidents can be significantly reduced on major routes, travel times can be reduced, and throughput increased. As we look forward to advances with possible active traffic management strategies we look to federal support and flexibility to test these techniques to maximize the efficiency and effectiveness of our highways.

For our Future, we need Bolder Solutions

As population and the economy grow in the Seattle-area, even with a large capital program, traffic congestion will get worse in the future. Dramatic steps will be needed to keep our corridors safe and reliable. These future steps will not be politically easy or necessarily cheap. To best increase the efficiency of the facilities we have and the new facilities that we will build, we need to implement more HOT lanes or Express Toll Lanes, make HOV to HOT lane conversions, and price the use of highway capacity to make traffic flow smoother and faster. Similar approaches in other cities across the country have proven effective, & popular with all socio-economic groups.

After nearly two decades, WSDOT will begin tolling operations in July on the Tacoma Narrows Bridge. The project features electronic toll collection, which is new to Washington State. The “Good To Go” transponders are the size of a credit card and will allow non-stop, high speed toll collection.

Following in the spring of 2008 WSDOT will open nine miles of SR 167 HOT lanes using this same “Good To Go” technology. The pricing will vary with the traffic demand. We also project a benefit to all users, with a decrease in travel delay on the route as we make the highway more efficient.

WSDOT is examining several future projects for systems management and operations strategies that are expected to include value pricing to improve and assure roadway use efficiency. These include congestion pricing strategies on the SR 520 Floating Bridge corridor and the I-405 corridor that is supported with state legislative language from the recent 2007 session.

Analysis of the I-405 corridor is being done for two options; either a single HOV lane with four general purpose lanes, or two HOT lanes – functioning as Express Toll Lanes – with three general purpose lanes. With the same pavement area, the second option is projected to carry more vehicles and more people in the peak periods. With the current HOV lane breaking down in the peak periods traditional actions call for a raising of the occupancy rate to 3+, which then moves 80% of the vehicles in the HOV lane to the adjacent lanes, compounding congestion. The HOT lane strategy is important for reliability and to maximize the flow for all users.

Conclusion

Washington State is considered by many as a leader in traffic systems management. We want to and need to take our work further with technology into integrated Active Traffic Management and value pricing to complement aggressive transit and demand management strategies.

Optimizing the performance of our highway system can improve safety and reduce congestion. Providing the tools and flexibility at the federal level can encourage states and regions to test and apply new techniques, such as use of managed lanes and pricing to maximize throughput in the years to come.

Federal support to enhance system performance is encouraged. Advancing ITS technologies and better system management techniques need to be part of our future to reduce congestion, improve throughput, and increase highway reliability.

Mr. Chairman, thank you for the opportunity to testify before your subcommittee today. We look forward to responding to any questions you may have.