Washington Transportation Plan Update

Phase 2 Workshop

Demand – Capacity Imbalance

Building Future Visions

Douglas B. MacDonald
Secretary

Paula Hammond
Chief of Staff

Elizabeth Robbins
Manager
Policy Development and Regional Coordination
and
WSDOT Program Managers

May 18, 2005

Washington State Department of Transportation

Building Future Visions

What are visions for future transportation systems – shared and unshared – that should shape today's transportation planning to help create pathways to that future?

Building Future Visions

Guiding Principles (Statutory and Commission Policy) for Building Future Visions

Commission:
Promote the use of advanced technologies to improve system efficiency and service.

Support regions in adopting different and regionally appropriate mobility strategies.

Recognize that there will be congestion on the system and the ability to control congestion by expansion of the system is limited due to funding and other considerations. Promote land use management, telecommunications and other innovative technologies as viable mobility options to reduce the impact of congestion on all system users. Support limited strategic expansion to accommodate growth and reduce congestion when possible.

Use cost-benefit methodologies as key determinants in selecting mobility projects.

Take advantage of available, cost effective technologies to improve processes and systems.

West Coast Governor's Global Warming Initiative
Develop strategies to address five issues (low emission vehicle procurement, ports and highway diesel emissions, renewable energy, energy efficiency, performance measurement).

What Might This Mean?

- Washington State has reached the point where substantial expansion of transportation capacity should be developed in order to get people from their homes to their jobs and demands for movement of freight and goods. From a standpoint of meeting transportation demands, a number of corridors over several modes ought to receive capacity expansion.
- Capacity expansion is an expensive investment choice because of high costs of right of way.
- New technologies will be an important source of efficiency gains. Goals and visions for efficiency must anticipate tomorrow's technologies as well as take advantage of today's. For highway systems, the expanding uses of in-vehicle technologies must be in the forefront of transportation system planning.
- Washington State's transportation system might face demands for new or expanded services to support new technologies, convert, or retrofit fleets, etc.

Building Future Visions

"To Do" Policy

Intelligent Transportation Systems (ITS)

Develop a policy to integrate new technologies into WSDOT's Maintenance and Operations Program (Longer Term)

"To Do" Strategy

Intelligent Transportation Systems (ITS)

Develop a strategy to explore Vehicle Infrastructure Integration (VII) and new ITS technologies to support communications between the vehicle and the roadside and between vehicles (Longer Term)

Passenger Rail

Develop a strategy for intercity passenger rail system expansion (Longer Term)

New Technologies and Alternative Fuels

Develop strategies to support goals – while assessing financial impact of alternative fuel and fuel consumption.

Future Funding

Develop a transportation funding strategy for alternative fuels (Longer Term)

Aviation

Study gaps and deficiencies in aviation system to assess existing and future air passenger, cargo, and airspace capacity and facility needs for the next 25 years. (Longer term)

Proposed Areas of Targeted Investment

Highways

New Corridors (discussed in April 2005 workshop and Demand – Capacity Imbalance)

Building Future Visions

Intelligent Transportation Systems Policy and Strategy

Integrate new technologies into WSDOT Maintenance and Operations programs

Type of Proposal

- [x] Policy
- [x] Strategy
- [ ] Capital
- [ ] Operating

Expected Benefits

- [ ] Preservation
- [x] Safety
- [ ] Transportation Access
- [x] System Efficiencies
- [x] Future Visions
- [ ] Bottlenecks and Chokepoints
- [x] Moving Freight
- [ ] Economy
- [ ] Health and Environment

All or Part Included in '05 – '07 Commission Funding Recommendation?

[ ] All [ ] Part [x] None

Funded in Current Law Budget

[ ] All [ ] Part [x] None

What is the Problem?

Washington should stay at the forefront of adapting the transportation system to make sure that the benefits of innovations are accessible to drivers, including commercial drivers who make their living on the roadways. These new technologies could have benefits in the areas of traffic management, travel information, safety, mobility, and consumer services.

Description of Proposal

Continue to monitor and evaluate technologies and trends emerging at the national level. Currently, we have formed a WSDOT Vehicle Infrastructure Integration (VII) Review Team to support our involvement in the Federal Working Group. The WSDOT team is working to develop deployment scenarios, primarily involving commercial vehicles, that can be proposed to FHWA as candidates for operational test funding.

Description of Benefits/Impacts of Implementing the Proposal

By monitoring national events and staying involved in the advancement of new innovations, we could stay in the forefront to implement advanced technologies when they become available. These new technologies could help improve safety by preventing crashes at intersections, keep vehicles from running off the road, and provide more timely detection of crashes to respond quickly and appropriately. We could also have more ability to communicate travel conditions, including weather and traffic flow, to increase travel time reliability and help save fuel and reduce emissions.

Building Future Visions

Intelligent Transportation Systems Strategy

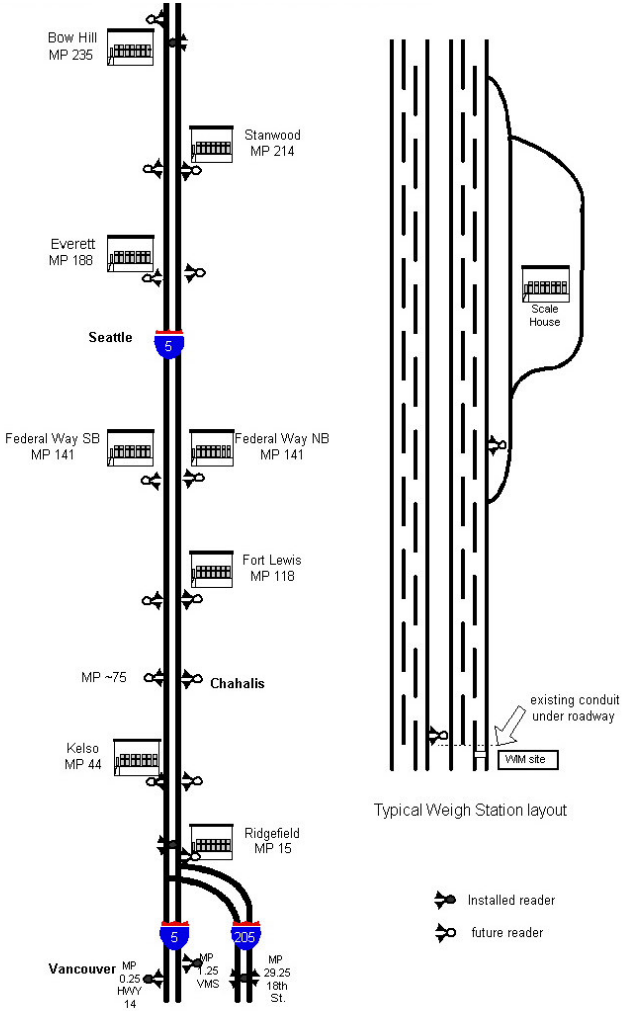
WSDOT's emphasis is to use advanced systems to fill in the ITS infrastructure gaps on corridors that lack the instrumentation to collect and disseminate real-time roadway conditions.

One strategy is to use Vehicle Infrastructure Integration to close gaps on corridors that lack the instrumentation to collect and disseminate real-time roadway conditions. The images on the right shows current and proposed Dedicated Short Range Communication locations to track travel times for commercial vehicles. This system is also designed to read the e-seals on the cargo containers.

Roadside Devices

A truck passes under a reader and over a Weigh-in-Motion sensor

Locations of Roadside Readers



Building Future Visions

Passenger Rail–Develop a strategy for intercity passenger rail system expansion

What is the Problem?

The intercity passenger rail program envisioned in the early 1990s called for 13 daily round trips between Seattle and Portland at higher track speeds. This vision would increase existing service with eight additional round trips and would require significant track improvements to accommodate the increased track speeds. However, this robust plan is dependent upon the availability of substantial federal and state funding. The lack of federal funding to date and the reduced availability of state funds has precipitated the need to revisit the policy for higher speed rail and develop a strategy for intercity passenger rail expansion.

Description of Proposal

Develop a strategy to affirm the direction for system expansion and higher track speeds for the intercity passenger rail program in relation to current and projected funding realities.

Description of Benefits/Impacts of Implementing the Proposal

Improved planning for implementation of the intercity passenger rail program and the track configuration needs associated with future demand.

Type of Proposal

- [ ] Policy
- [x] Strategy
- [ ] Capital
- [ ] Operating

Expected Benefits

- [ ] Preservation
- [ ] Safety
- [x] Transportation Access
- [x] System Efficiencies
- [x] Future Visions
- [ ] Bottlenecks and Chokepoints
- [ ] Moving Freight
- [ ] Economy
- [x] Health and Environment

All or Part Included in '05 – '07 Commission Funding Recommendation?

[ ] All [ ] Part [x] None

Funded in Current Law Budget

[ ] All [ ] Part [x] None

Note: Passenger Rail was addressed in the 2005 transportation partnership funding package

Building Future Visions

New Technologies and Alternative Fuels

What is the Problem?

Our current highways and ports are not adapted to the cars/trucks/marine fleets of the future. On the highways, we will likely see more alternative fuel vehicles, hybrids, electric, hydrogen-fueled vehicles. Trucks and ships might seek "shore power" or anti-idling stations where they can turn off diesel engines and still run essential equipment. How will we serve these? Implications to

- Increasing volume of vehicles – more miles to the gallon
- Fueling requirements will differ, safety of hydrogen fueling stations
- Availability of alternative fuels, supply and distribution
- Funding/revenue streams (see next slide)

Description of Proposal

Develop a strategy, continue close coordination with Governor's Office, CTED and others.

Description of Benefits/Impacts of Implementing the Proposal

A strategy will benefit users of transportation system, addressing their needs and assisting in application of cleaner or more efficient technologies.

Type of Proposal

- [ ] Policy
- [x] Strategy
- [ ] Capital
- [ ] Operating

Expected Benefits

- [ ] Preservation
- [ ] Safety
- [ ] Transportation Access
- [ ] System Efficiencies
- [x] Future Visions
- [ ] Bottlenecks and Chokepoints
- [ ] Moving Freight
- [ ] Economy
- [x] Health and Environment

All or Part Included in '05 – '07 Commission Funding Recommendation?

[ ] All [ ] Part [x] None

Funded in Current Law Budget

[ ] All [x] Part [ ] None

Building Future Visions

Future Funding

What is the Problem?

Some vehicle fuels are currently taxed, but newer alternative fuels are not, affecting transportation revenues even while the vehicles are using or will use the roadways.

Increasing penetration of hybrid-fueled vehicles ("more on the road") also erodes the revenue stream.

Currently taxed fuels:

Gasoline, diesel, ethanol, biodiesel, propane (compressed natural gas)

Not currently taxed:

Hydrogen, fuels of the future, other user-type sources (vehicle miles traveled)

Type of Proposal

- [ ] Policy
- [x] Strategy
- [ ] Capital
- [ ] Operating

Expected Benefits

- [ ] Preservation
- [ ] Safety
- [x] Transportation Access
- [ ] System Efficiencies
- [x] Future Visions
- [ ] Bottlenecks & Chokepoints
- [x] Moving Freight
- [x] Economy
- [ ] Health & Environment

All or Part Included in '05 – '07 Commission Funding Recommendation?

[ ] All [ ] Part [x] None

Funded in Current Law Budget

[ ] All [x] Part [ ] None

Description of Proposal

Research study (two-year study to start July 2005) will examine how to transition to the next evolution of transportation funding given these technological advances.

Description of Benefits/Impacts of Implementing the Proposal

Creating a viable transportation funding system to meet the state's highway construction, maintenance, and improvement needs.

Building Future Visions

Aviation

What is the Problem?

Air transportation is important to the mobility needs of the State; however, there is insufficient information on the future long-term commercial and general aviation needs, which affect the state's ability to effectively plan for passengers, air cargo, and airport capacity and facility needs over the next twenty-five years.

Description of Proposal

Establishes a three step process to address long-term passenger, air cargo, and airport capacity and facility needs statewide.

- 1st Phase – Existing airport capacity and facilities assessment study, due to be completed by July of 2006.
- 2nd Phase – Market assessment of aviation demand, trends, and forecast needs over the next 25 years. Report due in July of 2007.
- 3rd Phase – Governor to appoint a commission to provide recommendations on how to address long-term commercial and general aviation facility needs and gaps within the aviation system plan. Commission report due in July of 2009.

Description of Benefits/Impacts of Implementing the Proposal

Identifies gaps and deficiencies within the air transportation system and provides recommendations on how to address future long-term passenger, air cargo, and airport facility needs.

Type of Proposal

- [ ] Policy
- [x] Strategy
- [ ] Capital
- [ ] Operating

Expected Benefits

- [ ] Preservation
- [ ] Safety
- [x] Transportation Access
- [ ] System Efficiencies
- [x] Future Visions
- [ ] Bottlenecks and Chokepoints
- [x] Moving Freight
- [x] Economy
- [ ] Health and Environment

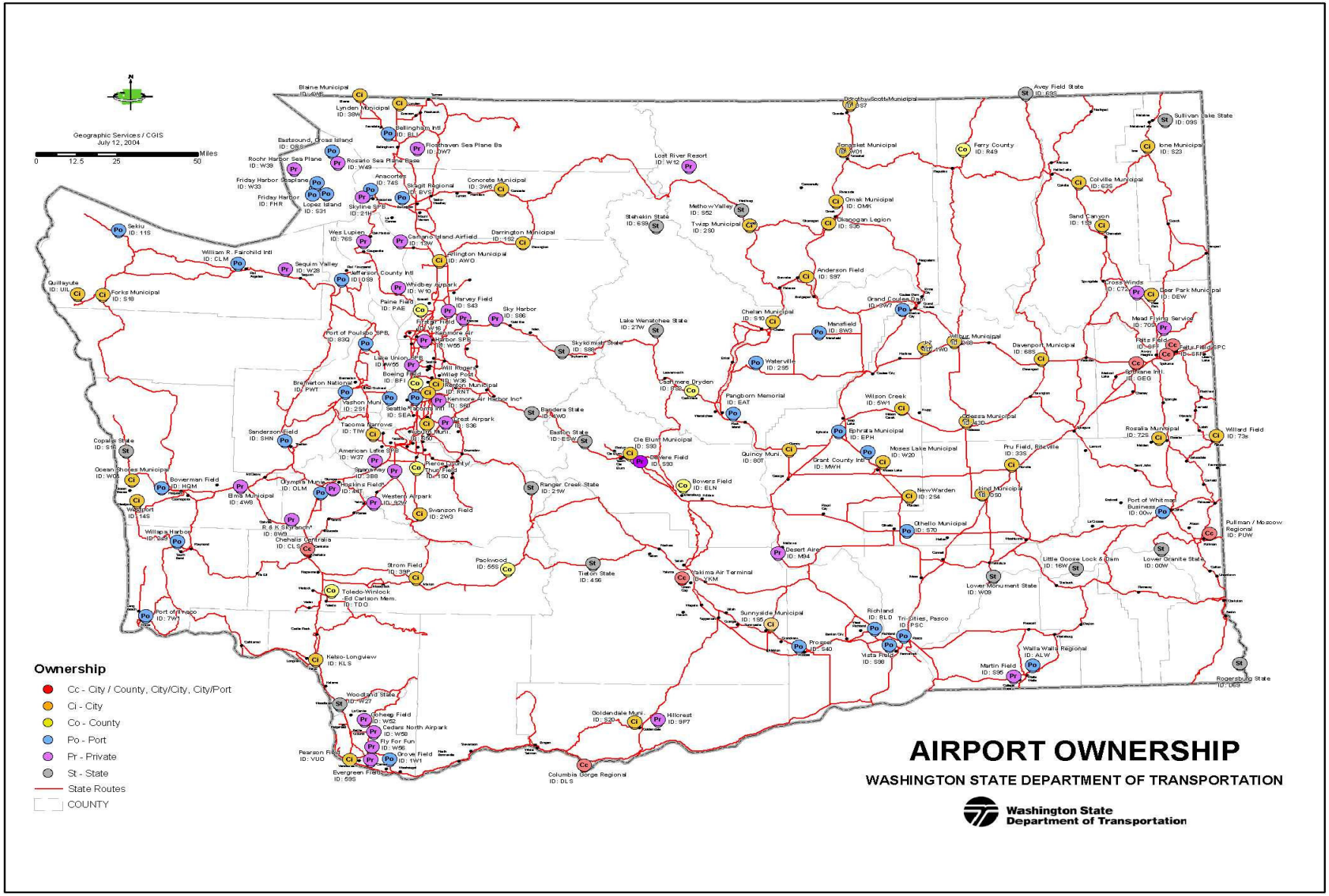
All or Part Included in '05 – '07 Commission Funding Recommendation?

[ ] All [ ] Part [x] None

Funded in Current Law Budget

[ ] All [x] Part [ ] None

Map of Washington Airports



Building Future Visions

Highway – New Corridors

What is the problem?

The basic state highway system has remained relatively unchanged since the 1970s. Because of financial limitations and occasional community opposition to new highways, highway "new works" have been directed mostly at widening existing corridors and filling obvious gaps in the system.

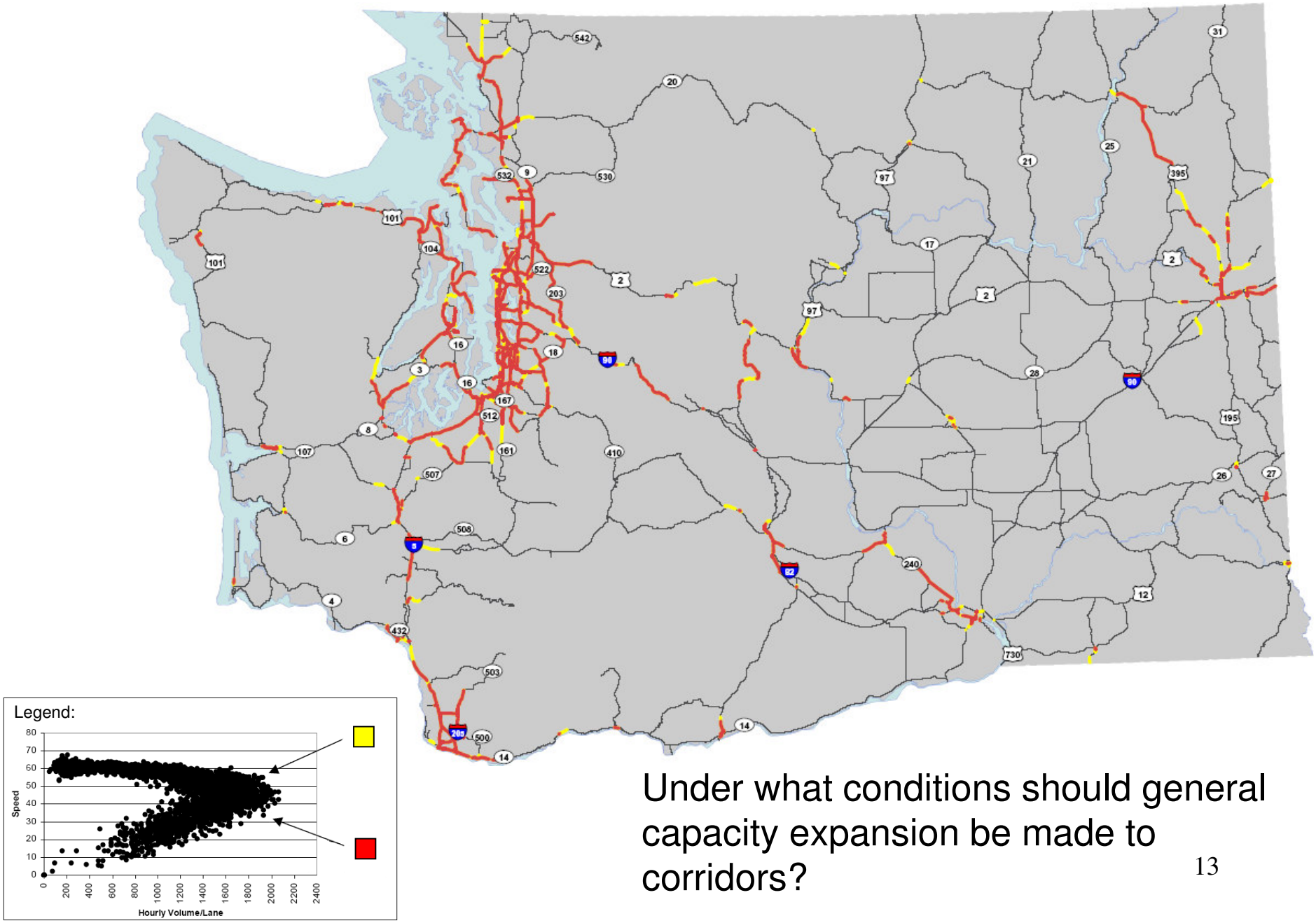
Description of Proposal

Across the state, various groups have advocated for new highway corridors, some of which have actually been designated as state highways. The table on the right outlines some of these proposals, their intended purpose, and summarizes the results of feasibility studies that may have been done.

New Corridors that have been proposed in WA

New Corridor	Benefits/Impacts	Prior feasibility studies
I-605-Cascade Foothill Freeway	Provides additional north/south capacity and serves as a through bypass for the Puget Sound region	1968, 1971 – not feasible, opposition. 1995-impact concerns. 2004 - underway
SR 168 – Naches Pass Tunnel	Provides a more direct route between Tacoma and Yakima, and provides an all weather mountain crossing	1960 – Not feasible as toll road
SR 171 Extension	Connects Moses Lake to Odessa	
SR 230	Connects Ritzville to Ewan, providing a more direct connection from I-90 to the Pullman vicinity	
Mt. St. Helens Access	Connects Windy Ridge to Johnson Ridge to create a convenient touring loop to promote economic development	2001 – concerns with engineering and financial feasibility
Cross Sound Bridges	There have been various bridges proposed to connect Kitsap Peninsula to W. Seattle	Every Legislature 1949-1967, Vocal opposition since 1970s
Submerged floating Lake Washington bridge	Replace existing floating bridge and/or add capacity without blocking waterway	No bridge of this sort currently exists but is being studied world -wide – technology is currently available

Corridors Needing Expansion



Under what conditions should general capacity expansion be made to corridors?