I-5 System Partnership and Regional HOV Planning

Patty Rubstello, P.E.
Assistant Secretary
Urban Mobility and Access
WSDOT

Jeff Storrar
Systemwide Planning Manager
Management of Mobility Division
WSDOT

Robin Mayhew
Director
Management of Mobility Division
Urban Mobility and Access
WSDOT

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Presentation Overview

• I-5 History, Challenges, Emerging Issues
• I-5 System Partnership
  – Formation, composition, proposed approach
  – Call to Action Report
  – Additional I-5 Planning Work Underway
• Regional HOV Planning
  – System evolution
  – Performance today
  – PSRC’s Regional Transportation Plan - Managed Lane Network
• Next Steps
May 14, 2019 marks the 50th anniversary of the last segment of I-5 to open to traffic in Washington

- Over 2 million more people have moved to the Puget Sound region since, and growth is projected to continue apace
- 1.8 million more people, 1.2 million more jobs expected by 2050
- Things have changed since 1969, and not always as planned
  - Where we live
  - Where we work
  - How and where we travel
- It’s time to consider where we’re headed

Source: Seattle Times
What Planners May Not Have Imagined

When I-5 was planned, engineers knew traffic would grow with population and employment

• But they may not have foreseen:
  – Women entering the workforce
  – Growth and population shift to suburbs
  – Decentralization of freight and warehousing
  – Strip malls and office parks
  – A high-tech economy
  – Development of suburban centers
  – A reduced federal role in transportation funding
  – Voter support for mass transit
  – More people driving through (instead of to) downtown Seattle
  – Congestion throughout the system, throughout the day
  – Autonomous vehicles or the onset of global climate change
I-5: A system under pressure

Congestion
• The Greater Puget Sound Region is ranked tenth in the U.S. for hours spent in traffic
• I-5 vehicle delay is up 29% since 2014

Increasing demand
• PSRC forecasts 1.8 million more residents in the region in the next 30 years
• Thurston County’s population forecast to increase by 42% in the same time frame, to 383,500

Sources: WSDOT CCR 2017, Inrix, Thurston Regional Planning Council, PSRC
Known Challenges

- **Community and Economic Impacts:** Any improvements to I-5 must also consider mitigations and enhancements to reduce negative impacts to local communities and the environment.

- **State of Good Repair:** I-5 requires substantial pavement and structure repair and renovation only partially funded through current law revenues.

- **Seismic Preparedness:** I-5 is not included in the seismic lifeline plans between Tukwila and Lynnwood due to high cost structure work needed.

- **Recurring Congestion** on I-5 is growing in severity, duration and extent, affecting the performance of other state routes as well as local, transit and freight transportation systems.

- **Safety and Reliability:** As I-5 is more congested it is also subject to increased incidents affecting reliability and safety.

- **HOV Performance:** HOV lanes do not meet state standards for speed and reliability, increasing delays for transit riders and increased costs to operators.
Cost to Washington’s economy

- **Congestion***: $3.2B
- **State of Good Repair**: $3.8B
- **Safety***: $8.4B

*Congestion cost source: Texas Transportation Institute’s 2015 Urban Mobility Scorecard; based on value of travel delay and excess fuel consumption for the area from Everett to Tacoma.

**State of Good Repair source: ASCE 2017 Infrastructure Report Card; estimated at $656 for every Washington driver.

***Safety source: Based on 2013 National Highway Traffic Safety Administration values for preventing fatal and serious injuries. Economic cost components include: medical care, emergency services, market productivity, household productivity, legal costs, insurance administrative costs, workplace costs, property damage and congestion.
Recent Chronology

• At PSRC’s request, WSDOT prepared a “State Facilities Action Plan,” recognizing significant gaps confronting key issues needing resolution before the next Regional Transportation Plan update, including:
  – Plans and costs for preserving I-5 assets and seismic preparedness
  – Strategies to improve regional HOV performance, especially on I-5
  – Short-term actions and long-range plans for I-5’s future
  – Plans to address growing congestion on state routes serving local communities

• During 2018 WSDOT convened the I-5 System Partnership comprising over 70 stakeholders representing local governments, major employers, transit agencies, non-profits, community organizations, and the University of Washington to:
  – Develop regionally shared goals for a strategic plan for the I-5 System
  – Anticipate and meet the longer-term challenges facing the I-5 System and regional HOV system
  – Tap into emerging opportunities to maximize the value of the I-5 System as a publicly held asset
The I-5 System Partnership is a collaboration of diverse stakeholders creating a vision for I-5 to **preserve** and **redevelop** the corridor in a way that:

- **Optimizes I-5 performance for moving people and goods using 21st century tools and metrics**
- **Develops transportation solutions appropriate to the changing needs and values of our communities and our economy**
I-5 Long-Term Planning Approach

We are here

Vision/Goals & Strategies

• Call to Action Report
  • Understanding issues and emerging trends
  • Risk of inaction
  • Need for comprehensive planning approach

Scenario Development

• Scenario Evaluation Report
  • Strategy Screening
  • Phased scenarios
  • Environmental Analysis
  • Financial strategy
  • Public engagement

Master Plan

• Master Plan Report including:
  • Policy implementation
  • Management Plan
  • Multimodal project and program Implementation Plan (Sequencing)
Study Area, Need for System Approach

- The proposed study area includes:
  - 5 counties, 93 cities, including 18 adjacent to I-5
  - 2 metropolitan planning organizations
  - 6 transit agencies
  - 2 major ports and two smaller ports
  - Over 4 million in population and 2 million jobs

- The I-5 corridor affects multiple related “systems”
  - Runs parallel to 2 intercity rail corridors
  - Supports supply chains throughout the region
  - Delivers goods to and from the ports
  - Serves as primary right-of-way for regional transit bus routes
  - Supports military bases and logistics
  - Provides access for tourism
  - Affects local traffic in adjacent cities
  - Provides regional access to/from intersecting routes
  - Creates a barrier to local traffic, pedestrian, bicycles and fish
  - Affects quality of life and environmental health at local and regional scale
I-5 Partnership Strategic Framework

Goals
Safety and reliability - Predictably, safely and efficiently serve the transportation needs of our region
Equitable opportunity - Advance access to support economic opportunity, health and quality of life for our region and all of its people
Connected communities - Improve connections between communities with more multimodal travel options
Adaptive innovation and technology - Innovate with mobility solutions, land use decisions, and emerging technologies that serve the evolving needs of our communities and economy

Maintain the system - Lowest lifecycle cost to preserve the system in a state of good repair
Resiliency - Create resilience in anticipation of disruptive conditions
Environmental stewardship - Maintain the highest standards for environmental management
Sustainably funded - Ensure revenues and resources are available that set the I-5 system on a new course toward sustainable funding, less burdened by debt

Strategies

Optimize the existing system and invest strategically
Embrace new and emerging technologies
Coordinate land use and transportation
Increase travel choices
Keep freight and goods moving
Maintain and preserve our assets

Possible approaches
Commute trip reduction
24-hour system management
Jobs-housing balance
Optimize the transit system
Maintain & improve freight corridors
Seismic retrofits
Direct access ramps
Adaptive signal control
Climate mitigation
Provide more transit
Travel-related data collection and sharing
Public-private partnerships
Ramp metering
Autonomous vehicles
Affordable housing
Practical solutions
Equitable pricing
Managed lanes
New revenue sources
Integrated transit fare
Cross-jurisdictional planning
Transit-oriented development
Bridge rehabilitation
Peak shoulder running
Community engagement
Community engagement
Community engagement
Travel-related data collection and sharing
Public-private partnerships
Tolling
New revenue sources
Integrated transit fare
Cross-jurisdictional planning
Transit-oriented development
Bridge rehabilitation
HOV enforcement
Coordination and incident response
EV infrastructure
Design facilities for all users
Bike and pedestrian facilities
Paving preservation
Speed enforcement
A lot is riding on I-5 now and in the future.

• **The I-5 system is in urgent need of attention:**
  • Impacts to communities and economy
  • State of Good Repair
  • Seismic Preparedness
  • Congestion
  • Safety and Reliability
  • HOV Performance

• **Lack of reliability threatens:**
  • State’s ability to compete globally
  • Quality of life

• **Action is needed now to address the challenges:**
  • Growing by almost 2 million by 2050
  • Waiting will only cost more

Doing nothing is not an option.
Additional I-5 Planning underway

I-5 Near-Term Action Agenda - Round 2

0 to 4 years (2022)

Near-term Solutions

I-5 System Partnership

2023 to 2035

Mid-Term Solutions

2036 to 2050

Longer Term Solutions
Regional HOV System: How We’re Evolving

- **1970’s**: First HOV Lane projects on I-5 express lanes and SR 520

- **1980’s**: HOV lane expansion on I-5, I-405, and I-90

- **1990’s**: Evolved to HOV System with Transit Emphasis and Consistent Policies

- **2000’s**: Introduced SR 167 HOT Lanes to Improve Performance

- **2010’s**: I-405 Express Toll Lanes, Voters Fully Funded Regional Rail

- **2020’s**: What’s Next?
Between 2015-2017:

- Performance issues increasing on HOV corridors (1 of 10 facilities meeting standard)
- Puget Sound HOV lanes account for 38% of miles traveled
- HOV person volume increased by 23%
- 12.4% increase in person-miles on HOV network
Puget Sound region HOV network reaches 7.8 million person miles traveled daily
2015 and 2017; Average daily person miles traveled in thousands

<table>
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<tr>
<th>Highway</th>
<th>2015</th>
<th>2017</th>
<th>% change</th>
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<tbody>
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<td>Interstate 5</td>
<td>3,744</td>
<td>4,029</td>
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<tr>
<td>Interstate 405</td>
<td>1,815</td>
<td>2,184</td>
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<td>State Route 520</td>
<td>489</td>
<td>532</td>
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<td>Interstate 90</td>
<td>416</td>
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<td>State Route 167</td>
<td>444</td>
<td>511</td>
<td>15.1%</td>
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<td><strong>Total</strong></td>
<td><strong>6,908</strong></td>
<td><strong>7,764</strong></td>
<td><strong>12.4%</strong></td>
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Data source: WSDOT Multimodal Planning Division.
Causes of HOV Congestion

• **Routine**
  – Heavy volumes
  – Merging conflicts
  – Geometry

• **Non-recurring**
  – Incidents
  – Bad weather

• **HOV Violations**
  – Violations as high as 35% on mainline and 60% on ramp HOV bypasses

* Legislation is proposed to increase penalty fee structure for recurring violations
PSRC Regional Transportation Plan - Managed Lanes Network
Adopted Consistent System Policies

• WSDOT developed a comprehensive set of HOV operating policies in 1992
  – Large multi-agency stakeholder group
  – WSDOT Executive level policy committee

• Transportation Commission adopted WSDOT operating policies in 1997
  – Added ability to customize policies regionally through MPOs

• In 2001, WSDOT worked with regional stakeholders to change hours of operation on eastside highways
Next Steps: Begin Work on Master Plan

• Governor’s proposed Transportation Budget includes $2.5 million to begin work on an I-5 long range plan
  – Study boundaries are Tumwater through Marysville, covering 107 miles
  – Scope described as “concept screening and scenario evaluation,” to narrow the focus for a subsequent and more thorough master planning effort

• First phase will need to be very high level and conceptual
The study would begin as soon as possible in 2019 and end in time to propose a follow-up work program to the 2021 Legislature.
Robin Mayhew, AICP
Director, Management of Mobility Division
(206) 464-1264 or MayhewR@wsdot.wa.gov
A path forward in a congested world: Practical Solutions

What is *Practical Solutions*?

- Addressing congestion within available resources
- It's the right investment, in the right location, at the right time
- Greater consistency between state and regional plans
- It's not about fixing a problem on the state highway system, but instead, advancing to the next generation of transportation investment
  - Being stewards of the transportation system rather than "just" delivering projects
- Keeping in state of good repair - make sure it operates safely - operates efficiently - manage demand - and at times, add capacity
TSMO within WSDOT

Transportation Systems Management & Operations (TSMO)

Managing safety and capacity as an asset

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<tr>
<th>PLANNING, PARTNERING, AND POLICY DEVELOPMENT</th>
<th>ITS IMPROVEMENTS</th>
<th>TRAVEL DEMAND MANAGEMENT</th>
<th>COOPERATIVE AUTOMATED TRANSPORTATION</th>
<th>TRADITIONAL TRAFFIC OPERATIONS</th>
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<tr>
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<td>Road Weather Information Systems</td>
<td>Multi-Modal Development</td>
<td>Traffic Signal Communications to Vehicles</td>
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<td>- Transit - Ferries</td>
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<td>- Pedestrian - Rail</td>
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<td>Tolling Vehicle Occupancy Detection</td>
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<td>Rest Area Truck Parking Applications</td>
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<td>- High Occupancy Vehicle</td>
<td>Winter Operations and Rural Traveler Information</td>
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<td>Intersection Conflict and Trail Crossing Warning Systems</td>
<td>- Tolled</td>
<td>Pedestrian in Crosswalk Warning</td>
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<td>Land Use Development</td>
<td>- Multi-Modal Shoulder Driving</td>
<td>Multi-Modal System Enhancement</td>
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<td>- State Facility Action Plan</td>
<td>Integrated Multi-Modal Traveler Information and Fare Collection Systems</td>
<td>High Occupancy Tolling/Express Toll Lanes</td>
<td>At-Grade Rail Crossings</td>
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<td>Integrated Scoping</td>
<td>Online Truck Permitting</td>
<td>Land Use Development</td>
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<td>Community Engagement</td>
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<td>Traffic Signal Communications to Vehicles</td>
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**Corridor and System Management**

- Access Management
- Signal Operations/Optimization
- Safety Analysis/Countermeasures
- Signage & Striping
- Speed Management
- Minor Geometric Modifications
  - Channelization
  - Pedestrian Island
  - Compact Roundabouts
- Multi-Modal System Enhancement
- At-Grade Rail Crossings
Do our old standards meet today’s demands?

The 20th century way

How many people can this street serve per hour?

Up to 29,600

Source: NACTO Transit Street Design Guide
A new way to look at our transportation system

If we manage the asphalt and concrete, we can move more people

How many people can this street serve per hour?

Up to 77,000

Source: NACTO Transit Street Design Guide