Eastside Corridor
Tolling Study

Executive Advisory Group
June 9, 2009

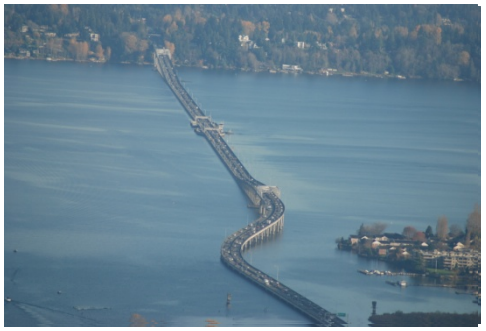
Washington State Department of Transportation

Moving Washington

- **Congestion is a priority:** Preservation, Safety, Mobility, Reliability and Stewardship are policy goals for Washington State. The success of WSDOT's congestion relief strategy depends on meeting each of the goals.

- **Delivering on our commitment:** WSDOT is delivering crucial transportation projects. With a clear road map for the future, we can meet growing travel demands.

- **New tools, new challenges:** WSDOT is studying transportation innovations around the world and working to implement technologies such as active traffic management to ease congestion today and sustain added capacity into the future.



Transportation Budget – ESSB 5352

By January 2010, the department must prepare a traffic and revenue study for Interstate 405 in King county and Snohomish county that includes funding for improvements and high occupancy toll lanes, as defined in RCW 47.56.401, for traffic management. The department must develop a plan to operate up to two high occupancy toll lanes in each direction on Interstate 405.

For the facility listed in (a) of this subsection, the department must:

i. Confer with the mayors and city councils of jurisdictions in the vicinity of the project regarding the implementation of high occupancy toll lanes and the impacts that the implementation of these high occupancy toll lanes might have on the operation of the corridor and adjacent local streets;

ii. Conduct public work sessions and open houses to provide information to citizens regarding implementation of high occupancy toll lanes and to solicit citizen views;

iii. Regularly report to the Washington transportation commission regarding the progress of the study for the purpose of guiding the commission's toll setting on the facility; and

iv. Provide a report to the governor and the legislature by January 2010.

Background/
Roles & Responsibilities

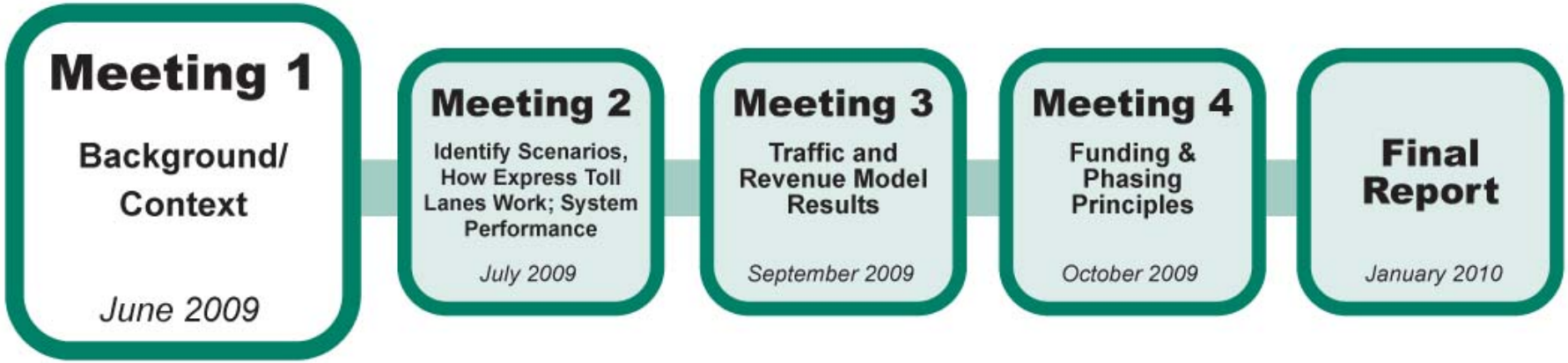
Craig Stone
Director of Toll Division

Washington State
Department of Transportation

Agenda

- Charge to the Group
- Introductions
- Schedule
- Roles & Responsibilities
- Project History
- National and Regional Tolling Overview
- Tolling Study Work Plan

Tolling Study Process



Terminology

Managed Lanes

Managed lanes maximize highway capacity by moving the most vehicles along a roadway without letting lanes get clogged with congestion. Managed lane strategies include HOV lanes, HOT lanes and express toll lanes.

HOT Lanes

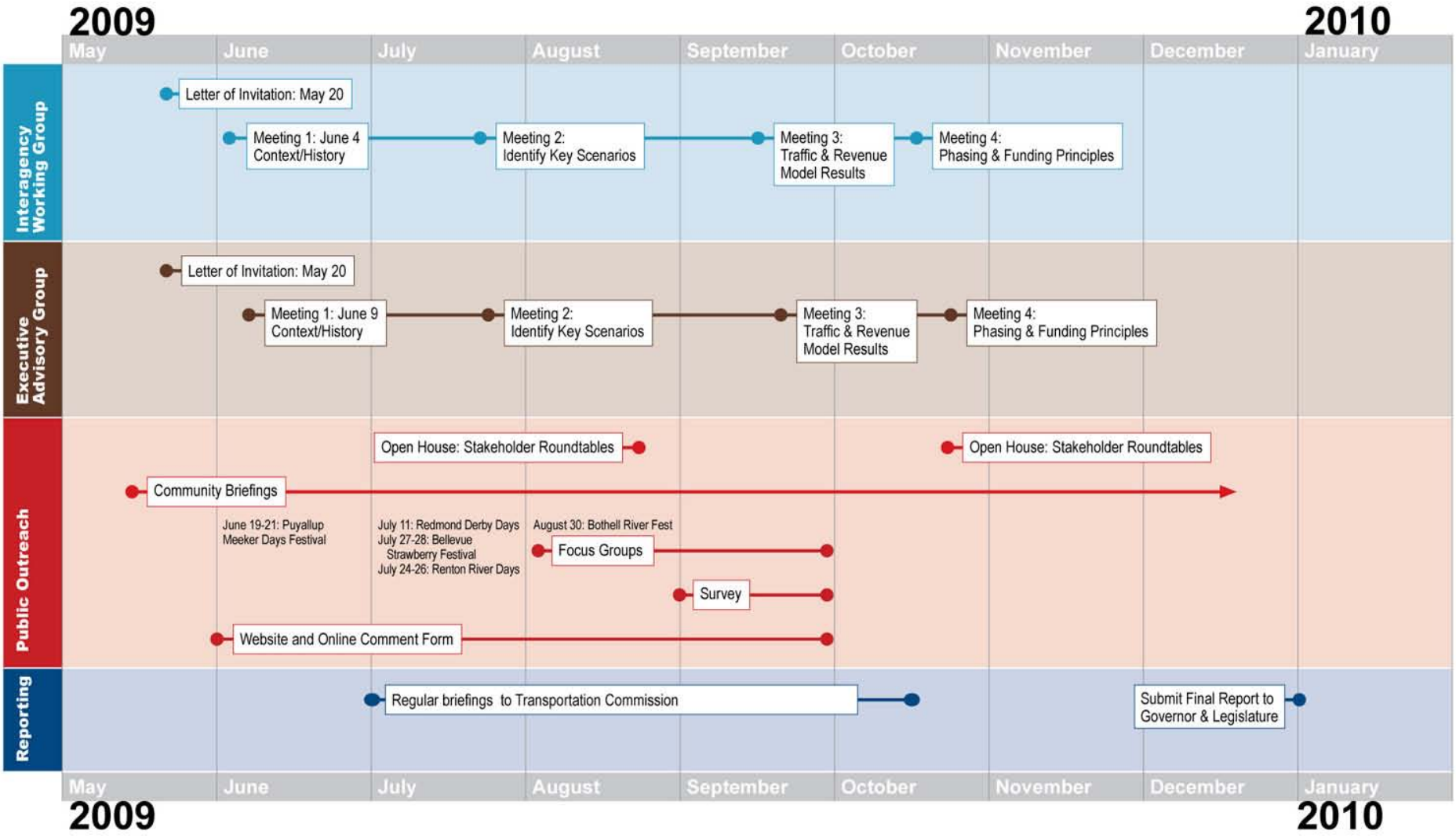
HOT lanes (high-occupancy toll lanes) offer an option for solo drivers to access high-occupancy vehicle (HOV) lanes to enjoy a more reliable trip in the carpool lane. Generally, this fee is dynamic; toll rates change with traffic levels to ensure that cars in the lane move at or above a set speed. In Washington, the first HOT lanes project recently opened on SR 167.

Express Toll Lanes

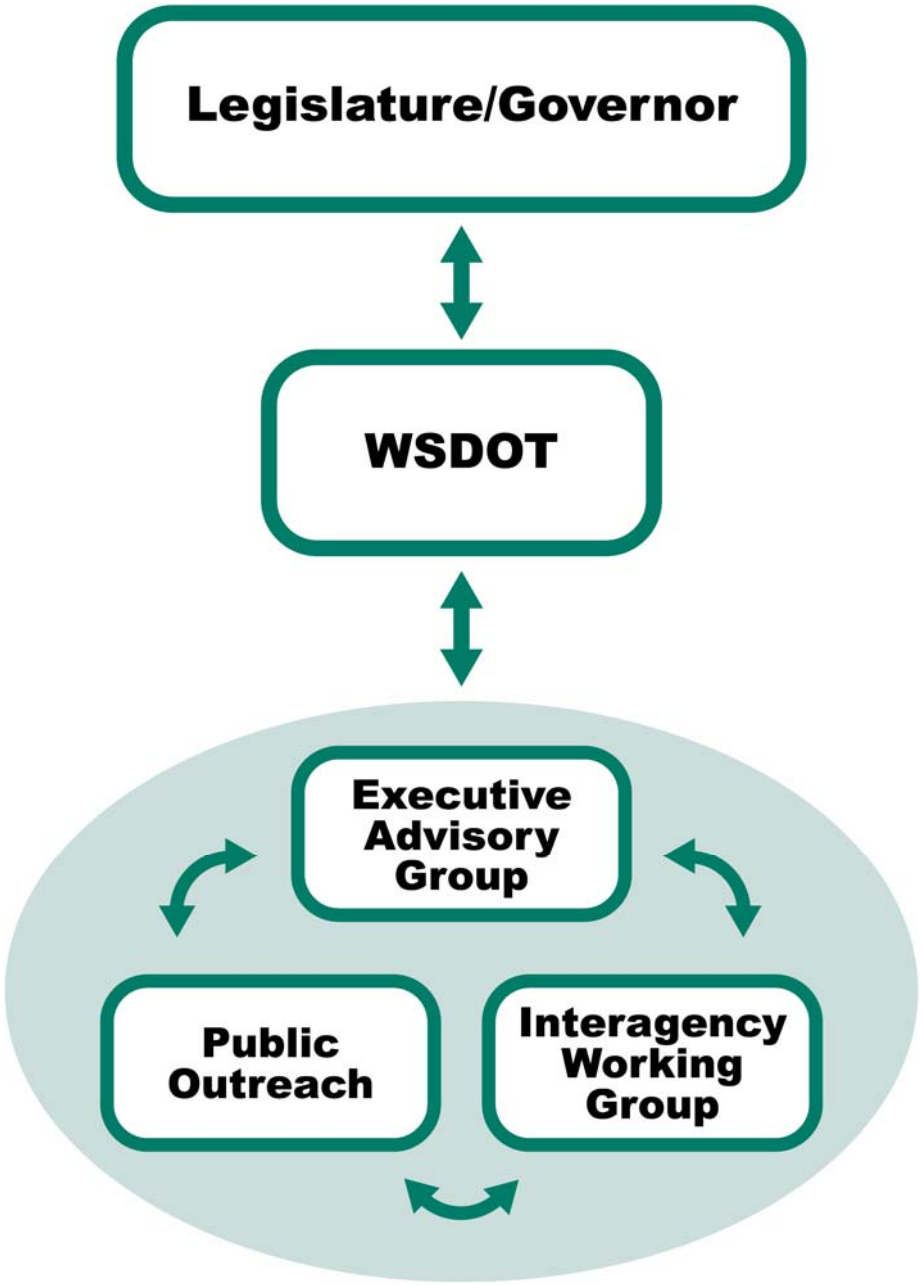
Express toll lanes are being proposed for the I-405 corridor and could also be used in other major corridors. Similar to HOT lanes, express toll lanes allow those who do not qualify as carpools to pay a toll to use the HOV lanes.

What is our schedule?

Tolling Outreach Timeline



Eastside Corridor Tolling Study – Public Process



Executive Advisory Group
Roles and Responsibilities

In carrying out their assigned duties, Executive Advisory Group members will:

- Attend or be represented at all committee meetings;
- Identify issues vital to the Eastside Corridor tolling implementation process;
- Provide strategic advice to WSDOT on the implementation of toll lanes for policy consideration by the Governor and the Legislature;
- Assist in providing opportunities for public, business and civic group input;
- Advise WSDOT on the development of funding and phasing principles to help guide the budget and schedule objectives;
- Represent the governments and agencies they belong to and assist in building/maintaining a regional consensus and keeping their community informed;

Interagency Working Group
Roles and Responsibilities

Interagency Working Group members will:

- Attend all committee meetings;
- Identify issues vital to the Eastside Corridor tolling implementation process to help inform local elected officials;
- Provide technical input to WSDOT on the implementation of toll lanes for policy consideration by the Governor and the Legislature;
- Represent the governments and agencies they belong to and assist their Executive Advisory Group member in identifying local issues.

How did we get here?
The Evolution of the Express Toll Lane Concept on I-405

2002 **Corridor EIS**

- Recommended further consideration of managed lanes:

"*The Preferred Alternative includes an additional four-foot buffer in each direction along I-405. This would accommodate expanded managed lane options in the corridor if future regional plans deem them desirable."* (pg. 2.17)

"The [4-foot] buffer design allows for future consideration of expanded managed lane operations along I-405, which could include managing up to two lanes each direction." (Appendix A of Appendix H-39)

2003 **Managed Lane Technical Analysis**

- Based on $4.8 B Implementation Plan.
- Showed performance benefit to merit future consideration.

2005 **Senate Bill 6091**

- Section 606. The legislature intends that tolls be charged to offset or partially offset the costs for the Alaskan Way Viaduct, State Route 520 Bridge replacement and widening of Interstate 405 including a managed lanes concept.

The Evolution of the Express Toll Lane Concept on I-405
(continued)

2006 **Express Toll Lane Traffic and Revenue Analysis**

- Evaluated express toll lanes application between SR 520 and I-5.
- Study results showed merit.
- Environmental review began in 2006, including the analysis of an express toll lanes option.

2007 **Senate Bill 1094**

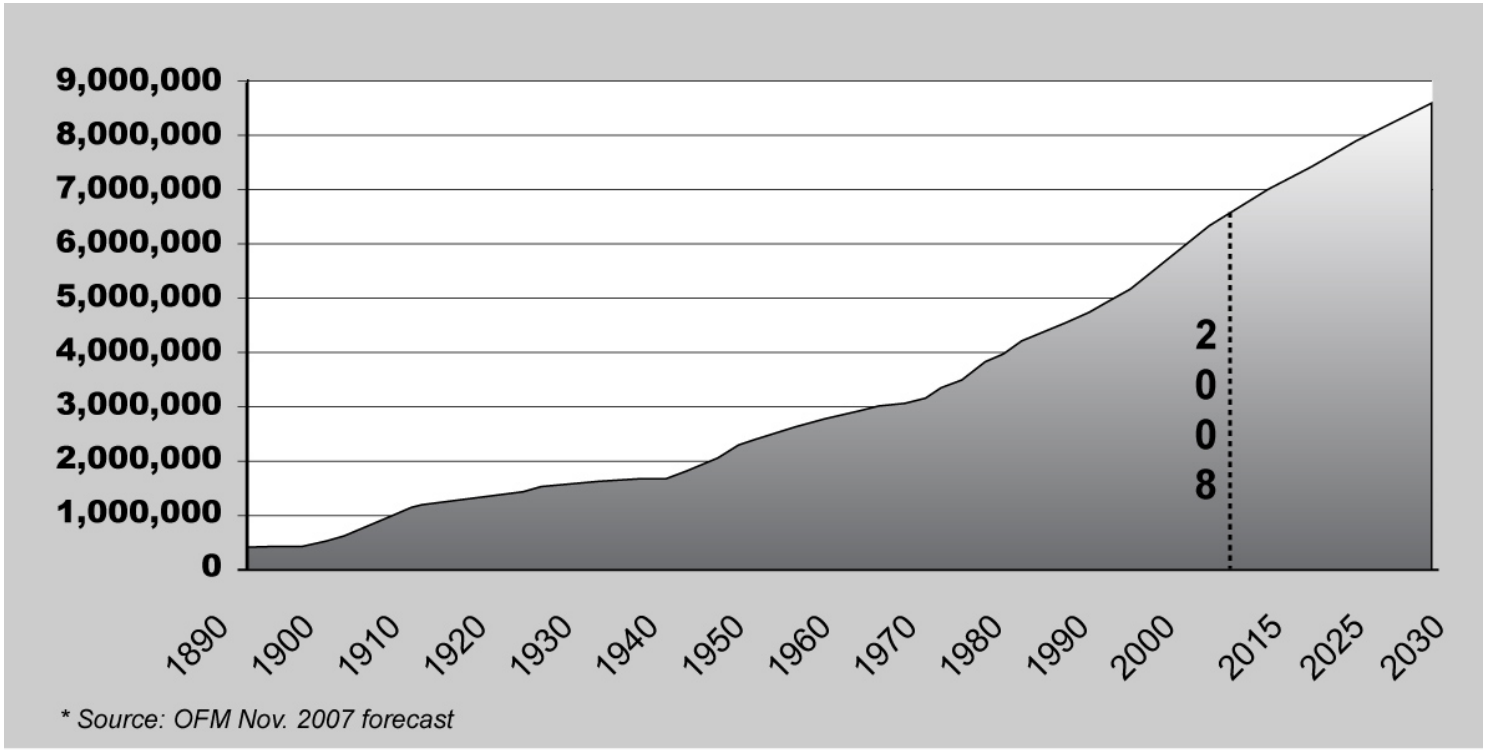
- Section 605. The legislature intends that tolls be charged to offset or partially offset the costs for the following projects, and that a managed lane concept be applied in their design and implementation: State Route 520 Bridge replacement and HOV project, and widening of Interstate 405.

2009 **ESSB 5352**

- By January 2010, the department must prepare a traffic and revenue study for Interstate 405 in King county and Snohomish county that includes funding for improvements and high occupancy toll lanes, as defined in RCW 47.56.401, for traffic management. The department must develop a plan to operate up to two high occupancy toll lanes in each direction on Interstate 405.

Washington State Population Growth

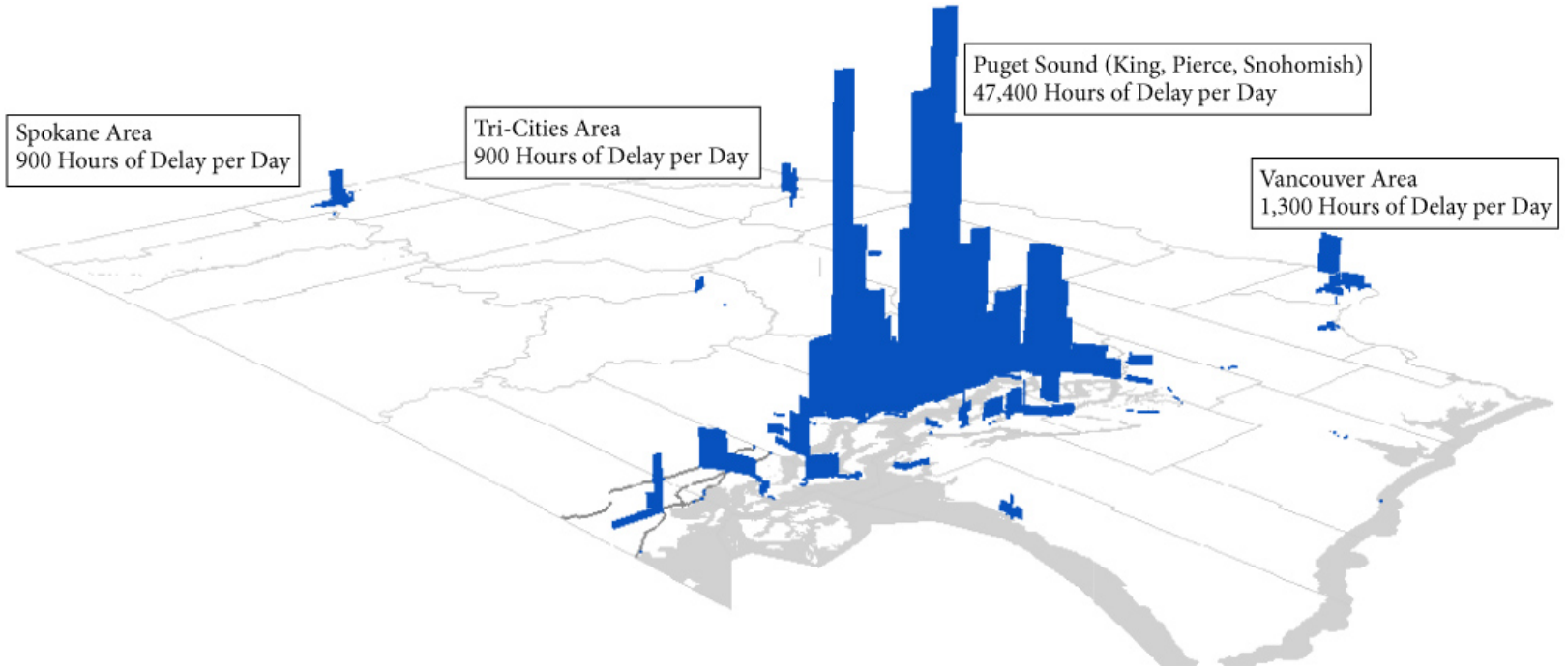
Demand for our highways is increasing rapidly



2 million more people expected by 2030

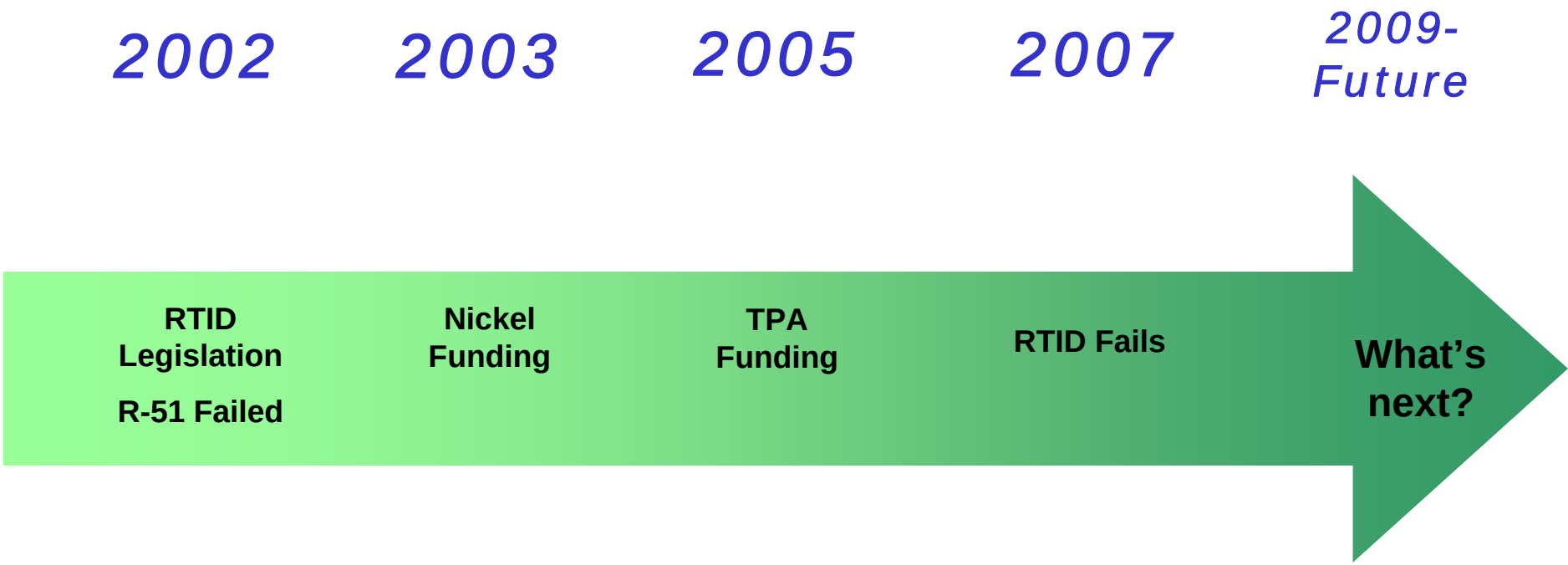
Highway Congestion

Vehicle Hours of Delay per Day per Mile in Washington State



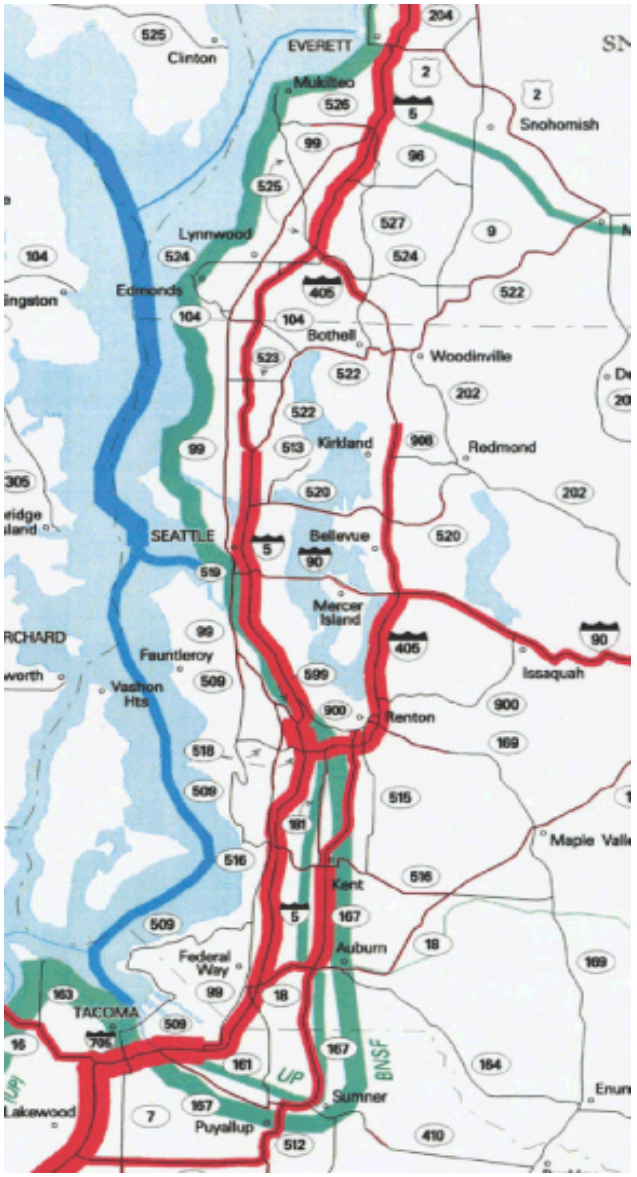
- 370,000 vehicle hours (520,000 person hours) daily delay (2004)
- Chiefly affecting urban areas and especially the Puget Sound region

Transportation Funding History



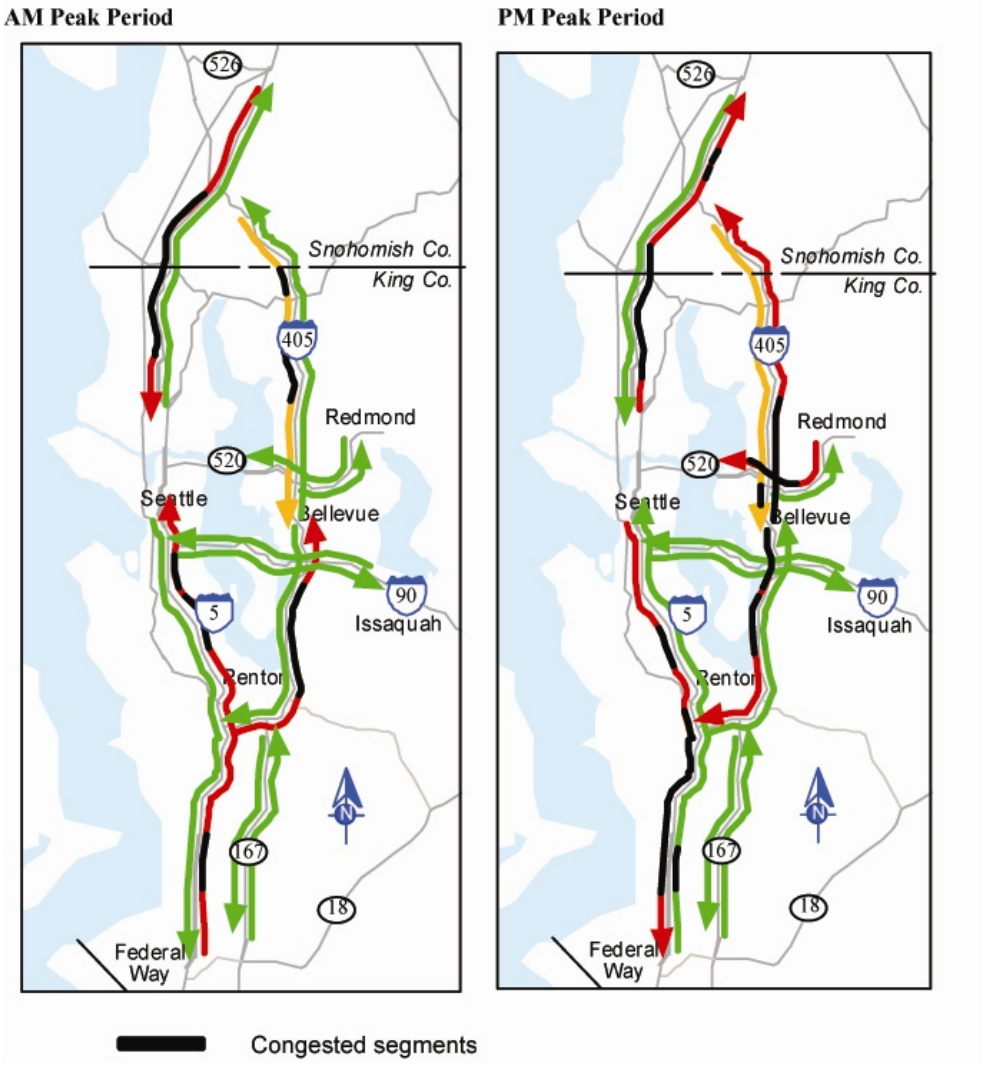
Freight Moved in the Region

- SR 167 serves the largest freight distribution center in the region.
- About one-third of the region's trucking storage facilities are located along the SR 167 corridor.
- I-405 carries twice the amount of freight shipped each year through the Port of Seattle; many of these trips originate on SR 167.



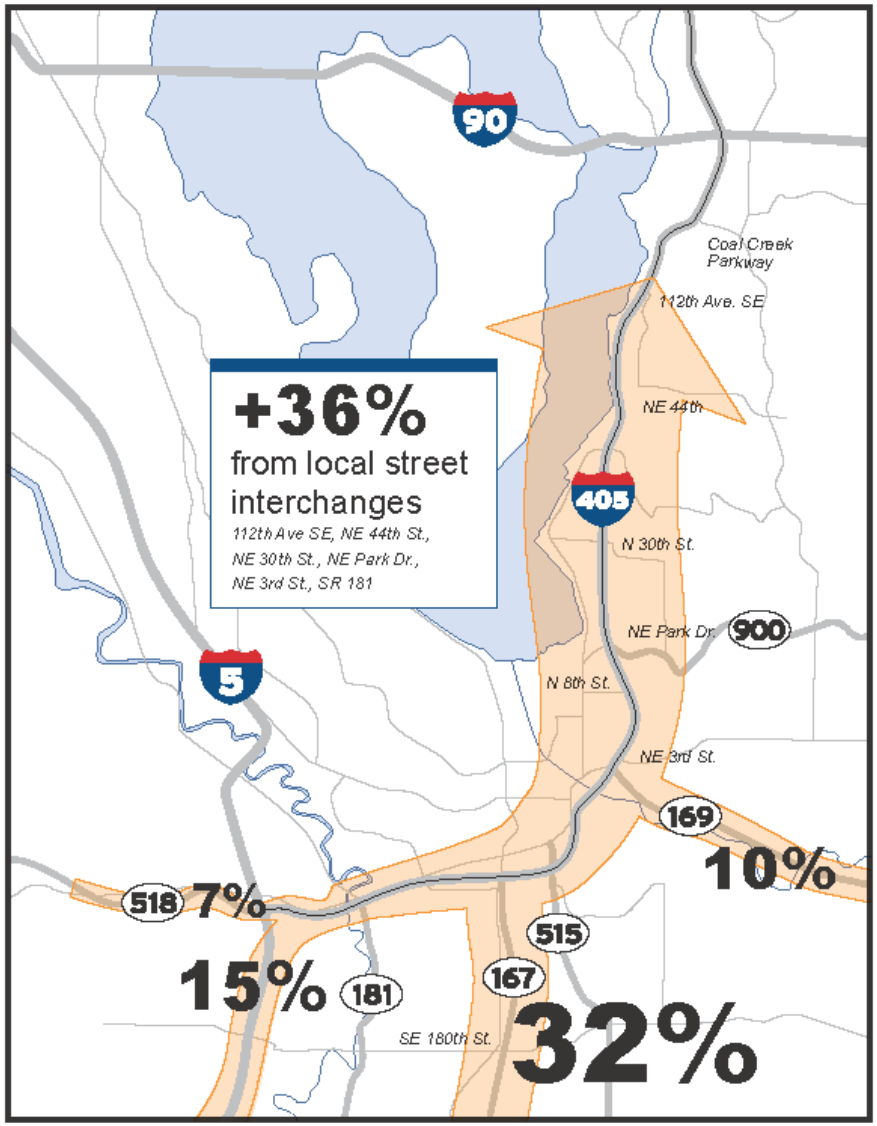
HOV Lane Operational Performance

- Current HOV lanes are not meeting performance targets.
- HOV lanes should operate at 45 mph 90% of the time.
- The I-405 areas currently not meeting these criteria are:
  - Northbound Renton to Bellevue (AM)
  - Northbound Bellevue to Bothell area (PM)
  - Southbound Bellevue to Renton (PM)



I-405 and SR 167: A Regional System

- SR 167 contributes 1/3 of the daily traffic on I-405 in Renton
- Regional transportation depends on this north-south I-405 and SR 167 corridor connection.



I-405 Northbound Traffic Flow (2005)

Project History and Update

Kim Henry
Eastside Corridor Project Director

Washington State Department of Transportation

I-405 Master Plan

Regional Consensus

- EIS Record of Decision, 2002

Roadways

- 2 new lanes in each direction
- Local arterial improvements

Transit & Transportation Choices

- **Bus Rapid Transit system**
- 9 new transit centers added
- 50% transit service increase
- HOV direct access ramps and flyer stops
- **Potential express toll lanes system**
- 5000 new Park & Ride spaces
- 1700 new vanpools

Environmental Enhancements

SR 167 Corridor Plan

Regional Consensus

- Corridor plan published in early 2009.

Roadways

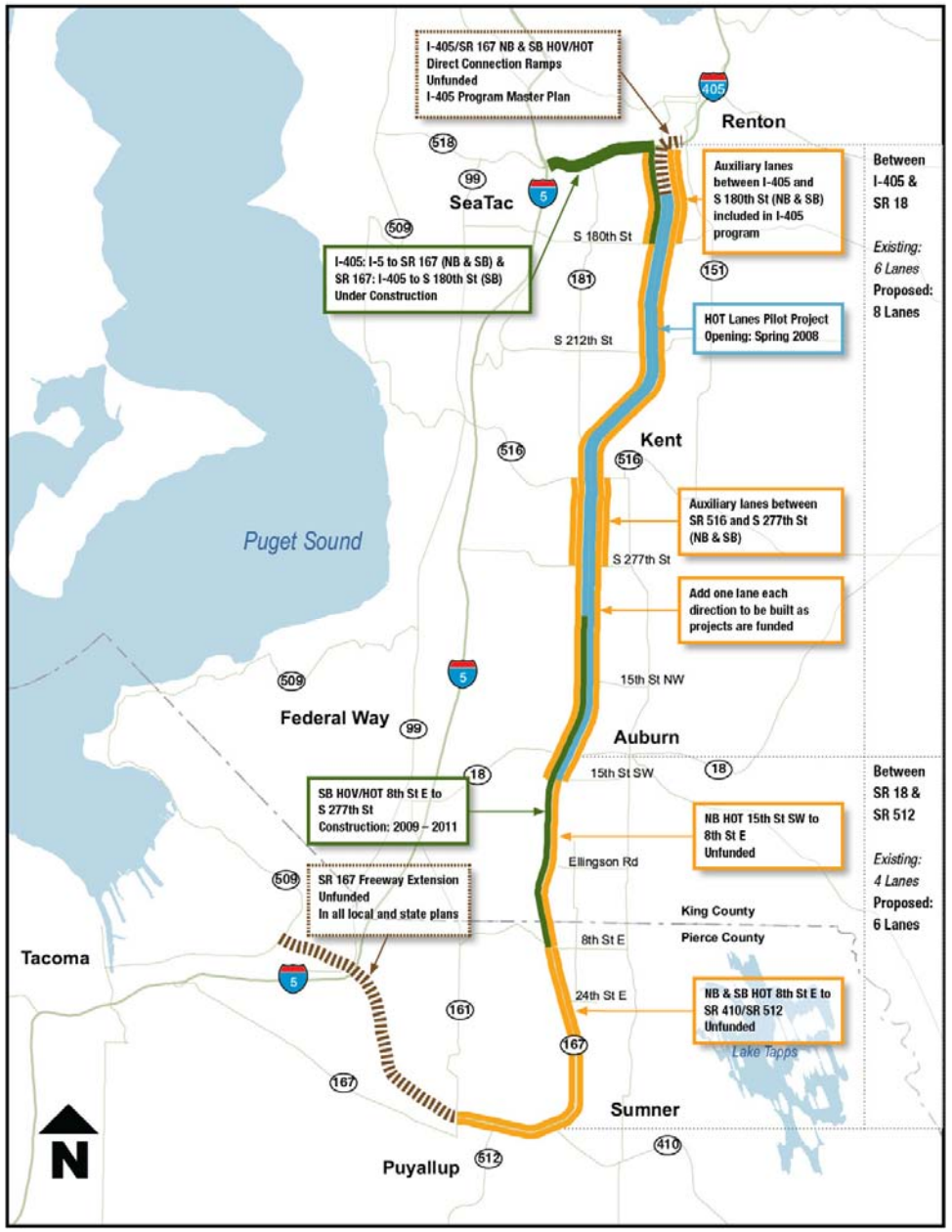
- Adds one to two lanes corridor-wide.

Transit & Transportation Choices

- Includes corridor-wide HOT lanes.

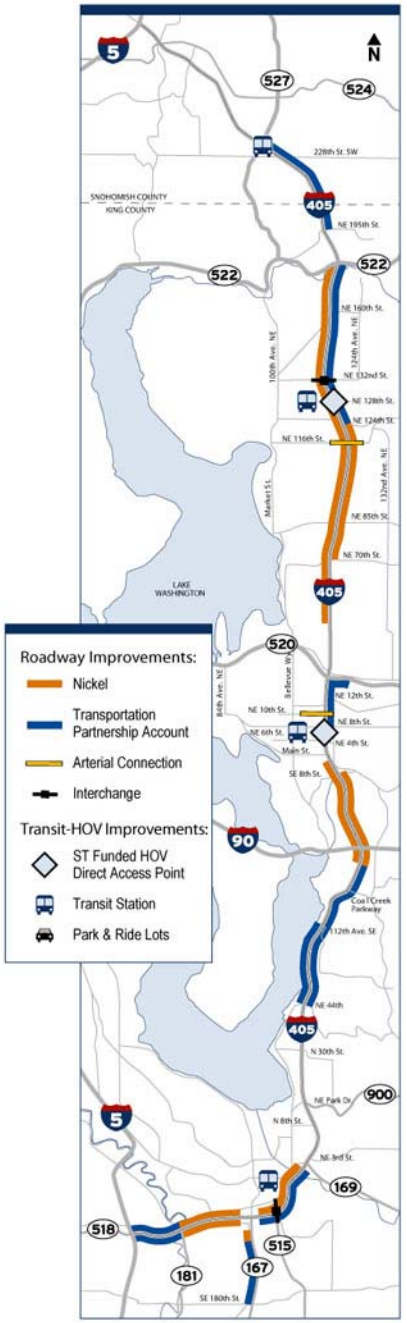
Environmental Enhancements

- Environmental mitigation projects.



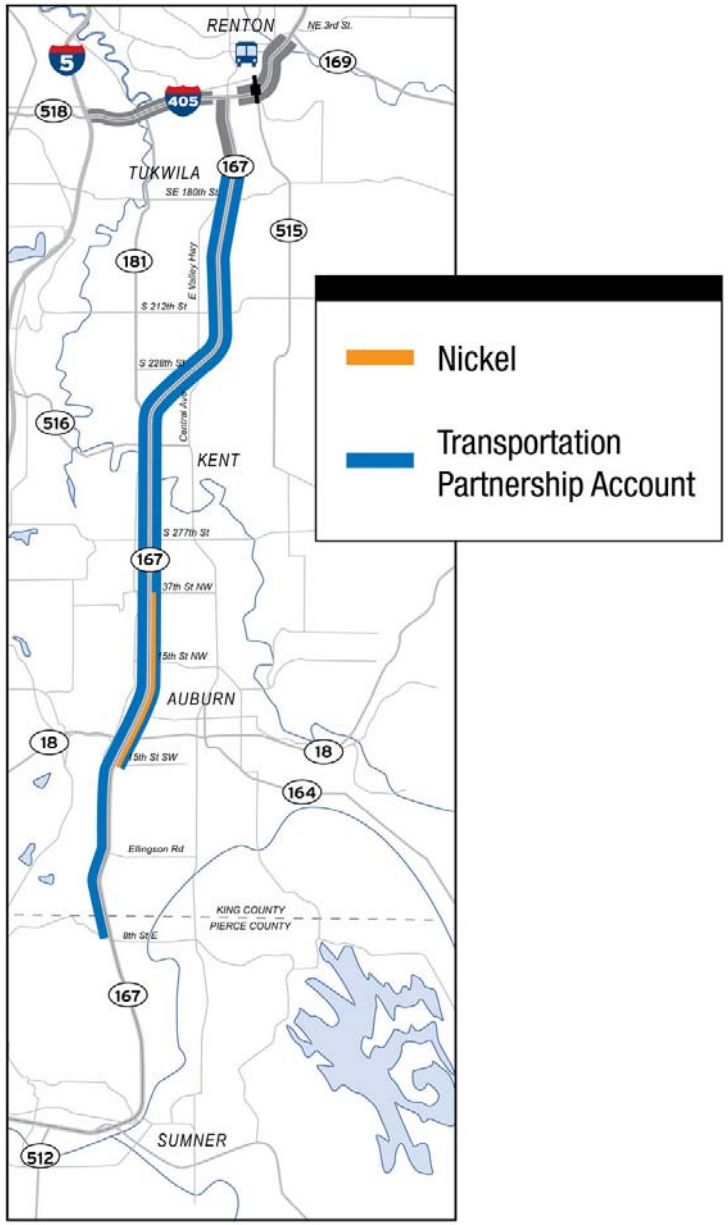
I-405 Funded Projects

Based on 09LegFin Approved Budget	Dollars in Millions
I-405/NE 195th St to SR 527 - NB Widening	$ 50.99
I-405/SR 520 to SR 527 - Widening Stage 2	
I-405/SR 520 to SR 527 - Widening Stage 2	$ 110.30
I-405/NE 124th St to SR 522 - NB Widening	$ 135.59
I-405/NE 132nd St - Bridge Replacement	$ 76.52
I-405/NE 132nd St - New Interchange	$ 48.50
I-405/SR 520 to SR 522 - Widening	$ 81.44
I-405/NE 8th St to SR 520 Braided Ramps - I/C Improvements	$ 277.37
I-405/NE 10th St Bridge Crossing	$ 63.90
I-405/112th Ave SE to SE 8th St Widening	
I-90 to SE 8th St - Widening	$ 179.87
112th Ave SE to I-90 - NB Widening	$ 19.95
Bellevue Vicinity Seismic Retrofit	$ 0.91
I-405/NE 44th St to 112th Ave SE - Widening	$ 150.00
I-405/Springbrook Creek Wetland and Habitat Mitigation Bank	$ 15.90
I-405/I-5 to SR 169 Stage 1 - Widening	
SR 181 to SR 167 - Widening	$ 127.35
I-5 to SR 181 - Widening	$ 22.38
SR 167/S 180th St to I-405 - SB Widening	$ 19.05
SR 167 HOT Lanes Pilot Project - Managed Lanes (partial)	$ 0.69
I-405/I-5 to SR 169 Stage 2 - Widening and SR 515 Interchange	
SR 167 to SR 169 - Ad new SB Lane	$ 58.05
SR 515 - New Interchange	$ 112.80
SR 167 to SR 169 - NB Widening	$ 5.03
I-405/Thunder Hills Creek Culvert - Emergency Repair	$ 12.31
I-405 Total Corridor Program	**$ 1,568.89**

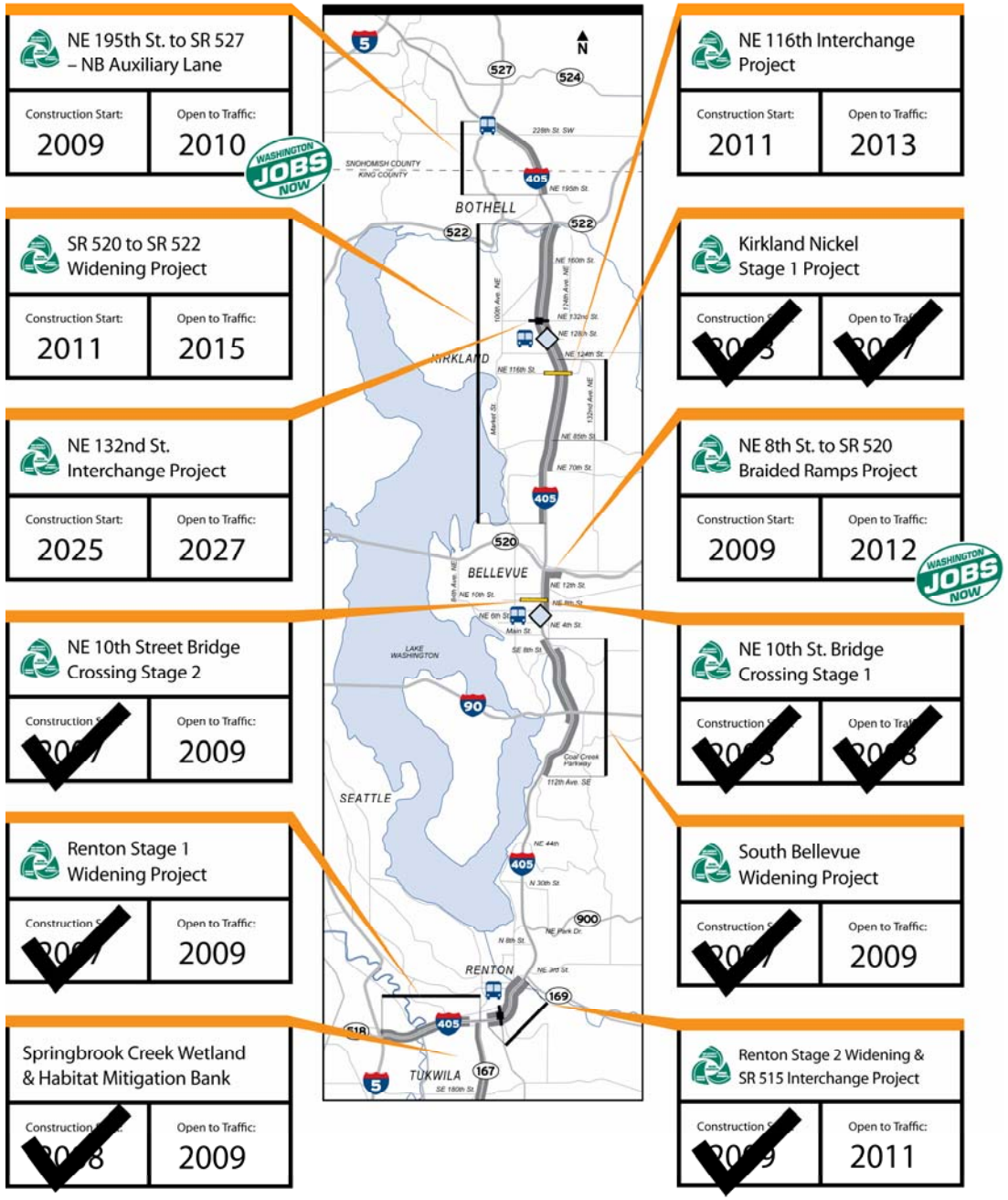


SR 167 Funded Projects

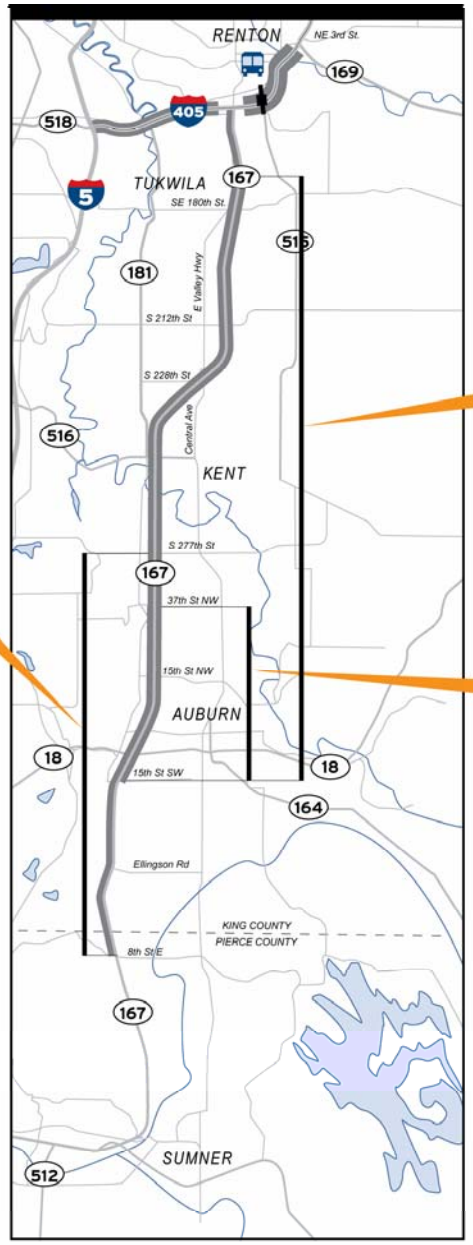
Based on 09LegFin Approved Budget	Dollars in Millions	
SR 167/15th St SW to 15th St NW - Add HOV Lanes	$	42.31
SR 167 HOT Lanes Pilot Project - Managed Lanes	$	18.82
SR 167/8th St E Vic to S 277th St Vic - Southbound Managed Lane		
SR 167/8th St E Vic to S 277th St Vic - Southbound Managed Lane	$	82.00
SR 167 Improvement Projects - Corridor Mobility Improvement Analysis	$	1.52
SR 167 Total Corridor Program	**$**	**144.65**



I-405 Corridor Funded Projects



SR 167 Corridor Funded Projects



8th St. E to S 277th St.– Southbound HOT lane

Construction Start:	Open to Traffic:
2013	2015

SR 167 HOT Lanes Pilot Project

Construction S…	Open to Traffi…
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NB HOV 15th St. SW to 15th St. NW

Construction S…	Open to Traffi…
20[illegible]5 ✓	20[illegible] ✓

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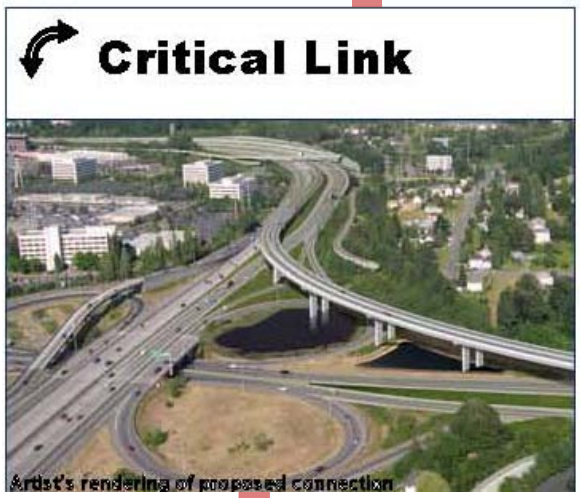
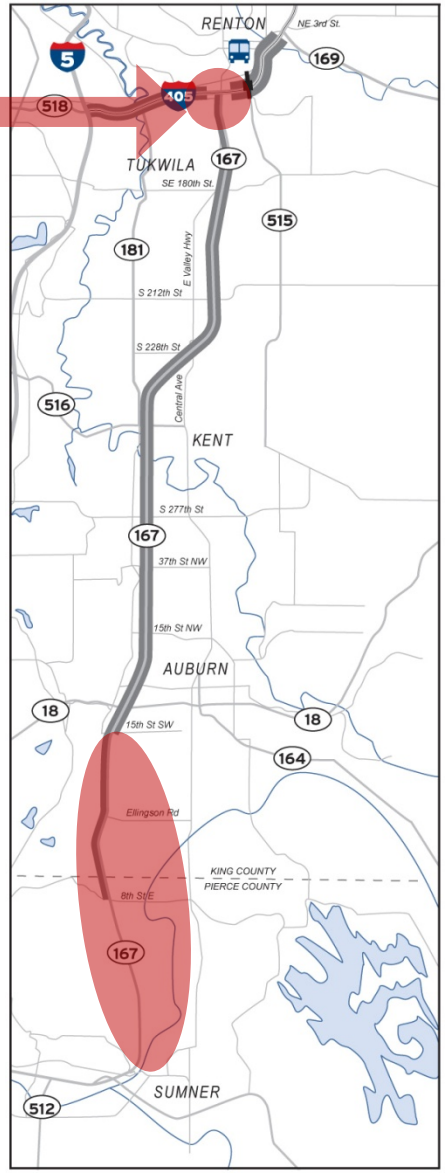
Funding Gaps

I-405



SR 167



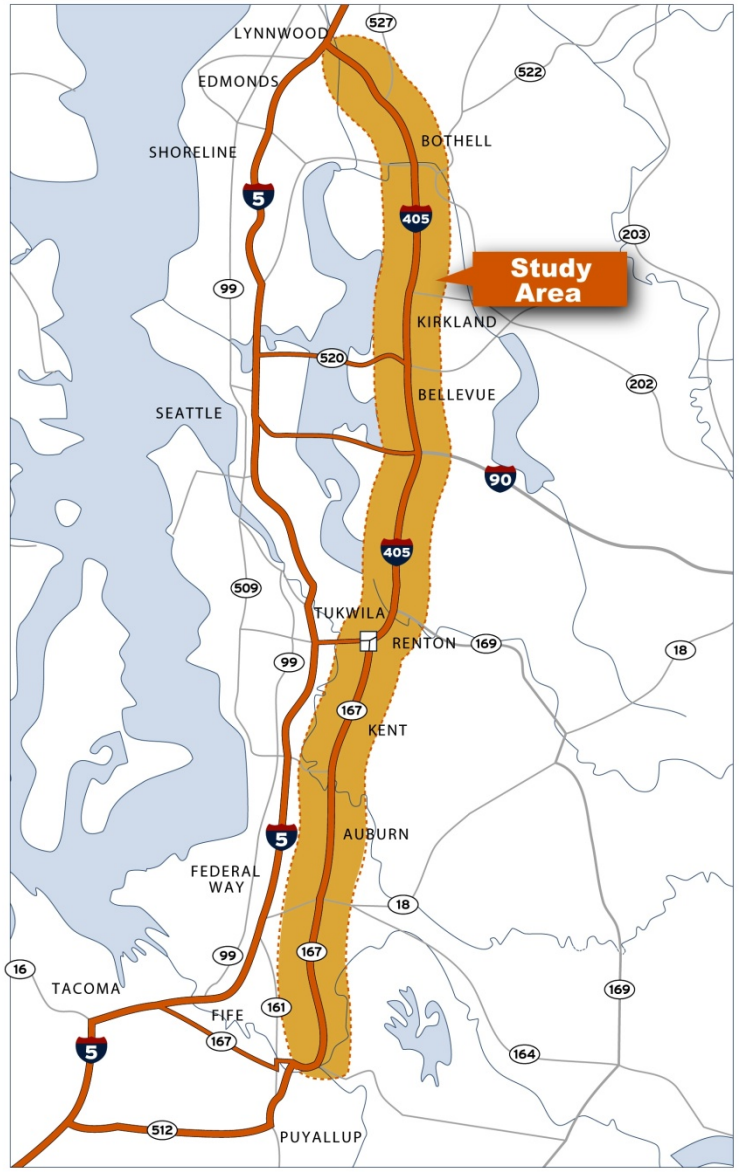
Eastside Corridor: I-405 and SR 167

Both corridor programs have long-range plans with concurrent implementation

- I-405 Corridor Master Plan, 2002; implementation ongoing.
- SR 167 Corridor Plan, 2009; implementation ongoing.

Both corridor programs face the same challenges

- Regional population growth.
- Regional employment growth.
- Increasing travel demand with insufficient means of managing demand.



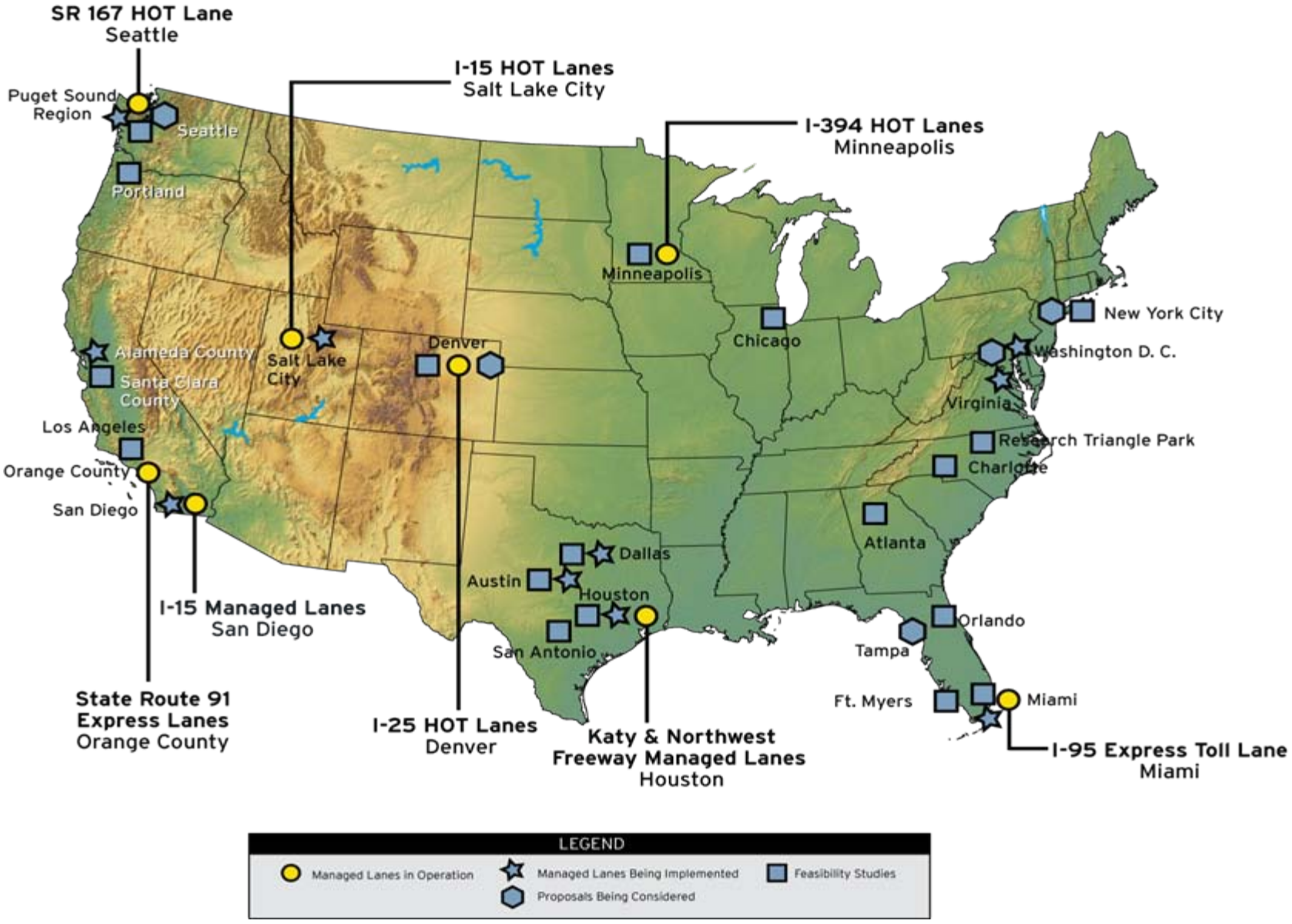
National and Regional Tolling Overview

Tad Widby
HNTB

David Hopkins
WSDOT

Washington State Department of Transportation

Tolling Projects in the U.S.



SR 91, California

Objective:

Primary-Revenue Generation

Secondary- Congestion Management

Background

- Opened December 1995 (Private Franchise)
- Purchased by Orange County Transportation Authority in January 2003

System

- 10 miles, 2-lanes each direction
- Buffer separated by pylons, access at ends

Operations

- Variable time-of-day tolling, 24/7
- HOV 3+ toll-free except during peak hours; HOV 2+ discount

I-15, Salt Lake City, Utah

Objective:

Primary-Congestion Management

Secondary - Revenue generation toward covering operations and management

Background

- Opened September 2006 (38 miles),
- Expanded (to 44 miles) December 2008

System

- Conversion of HOV1-lane each direction
- Striped buffer, access at ends and 19 intermediate

Operations

- $50 monthly permit for unlimited use
- HOV 2+, Hybrids toll-free

I-15, San Diego, California

Objective:

Primary- Congestion Management

Secondary-Revenue operations and maintenance and transit infrastructure

Background:

- Opened in 1998 as a Value Pricing Pilot Project with two reversible lanes
- In March 2009, extended and widened to four bi-directional lanes with moveable barrier

System

- 12 miles to date (Phased system 20 miles total), access at ends and four intermediate
- Infrastructure toward implementing Bus Rapid Transit (BRT)

Operations

- Dynamic Tolling
- HOV 2+ toll-free

I-10 Katy Freeway, Houston, TX

Objectives:

Primary- Congestion Management for transit service

Secondary- Revenue towards operations and maintenance

Background

- Opened January 1998 with one lane
- In April 2009, expanded to 2-lanes each direction

System

- 12 miles, Buffer separated by pylons, access at ends and four intermediate
- Bus Rapid Transit

Operations

- Dynamic tolling; HOV 2+ toll-free (peak)

I-95 Express Lanes, Miami, FL

Objectives:

Primary- Traffic Management

Secondary-Revenue for operations and maintenance.

Background

- Opened in December 2008, 2-lanes each direction

System

- 10 miles (Phased system 20 miles total), Buffer separated by pylons, access at ends and one intermediate access
- Bus Rapid Transit

Operations

- Dynamic tolling
- Pre-registered carpoolers (HOV 3+) and hybrids toll-free

History of tolling in Washington state

- 14 bridges financed with bonds and paid for with tolls.
- The first tolled bridges were the Tacoma Narrows Bridge and the I-90 bridge across Lake Washington. Opened July 1940.

- Nearly a 20-year gap before tolling started again with the opening of new Tacoma Narrows Bridge in July 2007.
- First HOT lane system opened in May 2008 on SR 167 between Renton and Auburn.

Tolling in Washington now

Tacoma Narrows Bridge

- Both toll booths and electronic toll collection.
- 75% of traffic using electronic tolls.
- 85% of morning commuters have electronic toll accounts.
- 96% of all Gig Harbor households have *Good To Go!* accounts.
- 14 million transactions in first year.

SR 167 HOT lanes

- All electronic toll collection – no toll booths.
- Dynamic pricing based on traffic levels.
- More than 20,000 *Good To Go!* users have paid to use the SR 167 HOT lane.
- Average of 1,223 vehicles per day paid to use the HOT lanes.

Setting up a *Good To Go!* account

- Most customers sign up on-line.
- Full-service customer service centers are available for walk-ins.
- Mobile *Good To Go!* centers are available to set up at events, businesses, and high-traffic areas

- A credit card sized transponder adheres to the windshield.
- Customers can choose auto replenishment.
- One account for all Washington tolling facilities.

SR 167: New Configuration

Single HOT lane in each direction

- HOT lane separated by double-white lines.
- Variable message signs indicate toll rate at each entry point.
- Pay a single toll to travel any distance on the 10-mile route.
- Free to buses and HOV 2+.

Pre-HOT lanes:

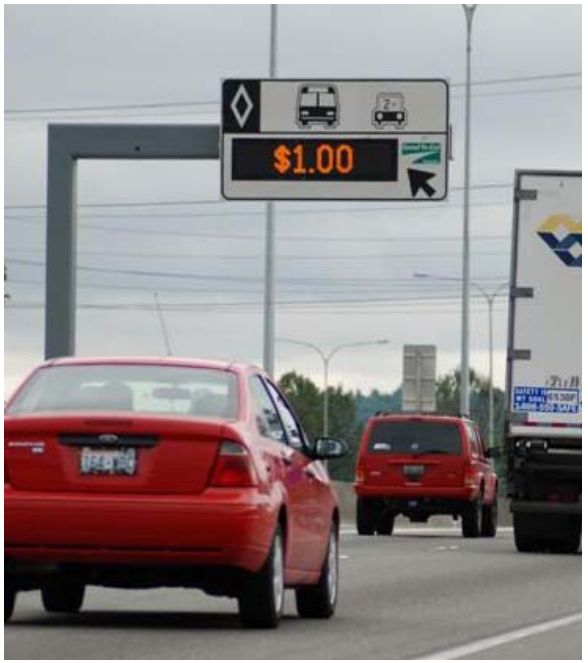
SR 167 had two general purpose lanes and one HOV lane.

Post HOT lanes : *HOV lanes were converted to a single HOT lane in each direction.*

Current Highlights

8 months after HOT lanes opened on SR 167—

- HOT lane operates at or above 45 mph 99.4% of the time during peak hours.
- More than 20,000 *Good To Go!* Users.
- No apparent safety impacts.
- Increasing peak-hour and daily toll transactions.
- Decreased peak-hour travel times in both GP and HOT lanes.
- Transit ridership up nearly 25 percent.
- Available capacity remaining.
- Peak hour users paid an average of $1.25 to save 9.1 minutes in the NB HOT lane and $1.25 to save 5.1 minutes in the SB HOT lane.



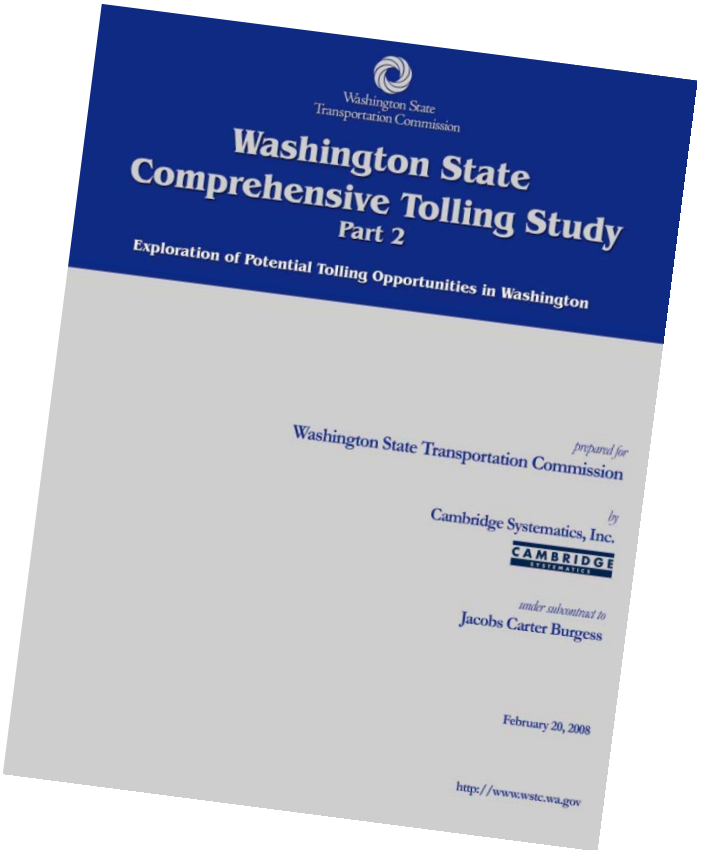
No toll booths in the future

- 520 corridor will use 100 percent electronic tolling.
- Electronic tolling is more efficient and safer, no need to slow traffic.
- No additional right-of-way needed to erect toll booths.
- Cash collection costs more than electronic tolling.
- Majority of transactions will be *Good To Go!* account holders.
- Washington drivers have embraced electronic tolling in record numbers.

Tolling in Washington

2008 Transportation Commission Tolling Study examined the viability of tolling seven corridors:

- Lake Washington Corridor
- I-5 Corridor – Central Puget Sound
- **I-405/SR 167 Corridor**
- I-5 in Lewis County
- SR 395 North Spokane Corridor
- Columbia River Crossing
- I-90 Snoqualmie Pass East



Tolling Studies Underway

In the last session, the legislature identified several projects where tolling should be studied as part of future improvements:

- I-405 tolling study due by January 2010
- Alaskan Way Viaduct revenue study due by January 2010
- Columbia River Crossing tolling study due by January 2010
- SR 167 and SR 509 (sections not yet built) tolling studies due by September 2010

Looking north at I-405 in South Bellevue

HOT lane simulation

What are regional tolling goals?

- **Revenue generation**
  - Help build projects
- **Congestion management**
  - Optimize throughput
  - Move optional trips out of peak hours
  - Encourage shift to transit or carpools
- **Mixed approach**
  - Raise funds and improve throughput
- **Environmental improvements**
  - Reduce greenhouse gases

New Narrows Bridge

SR 167 HOT Lanes

Eastside Corridor Tolling Study Work Plan

Denise Cieri
I-405 Deputy Project Director

Washington State Department of Transportation

What is our charge?

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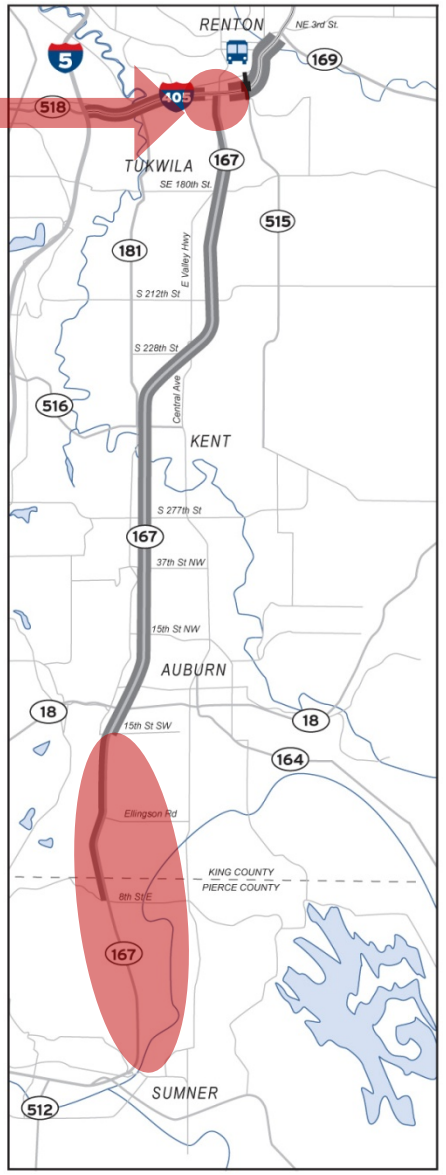
Tolling Could Help Address Funding Gaps

I-405

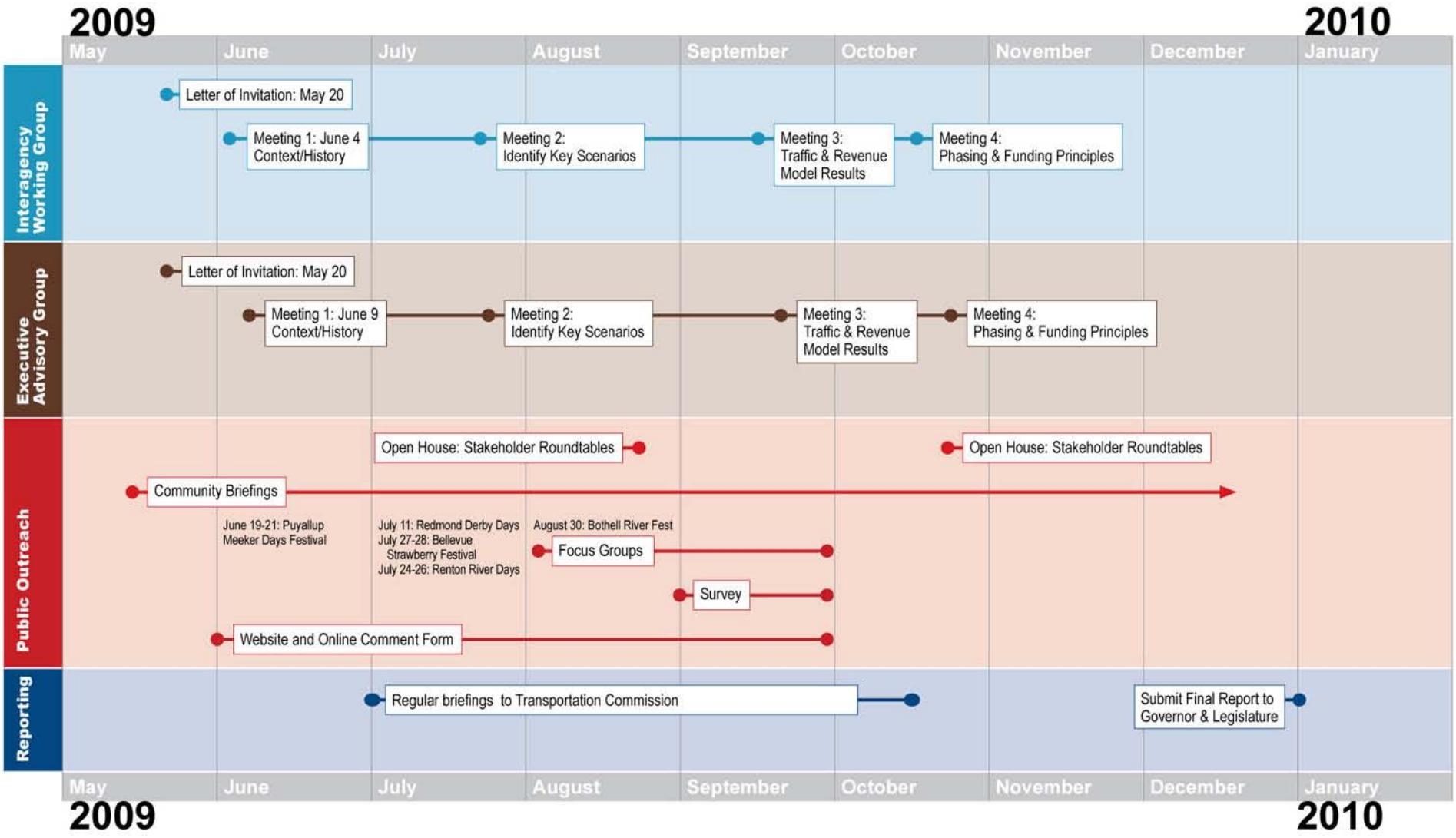
Critical Link

SR 167

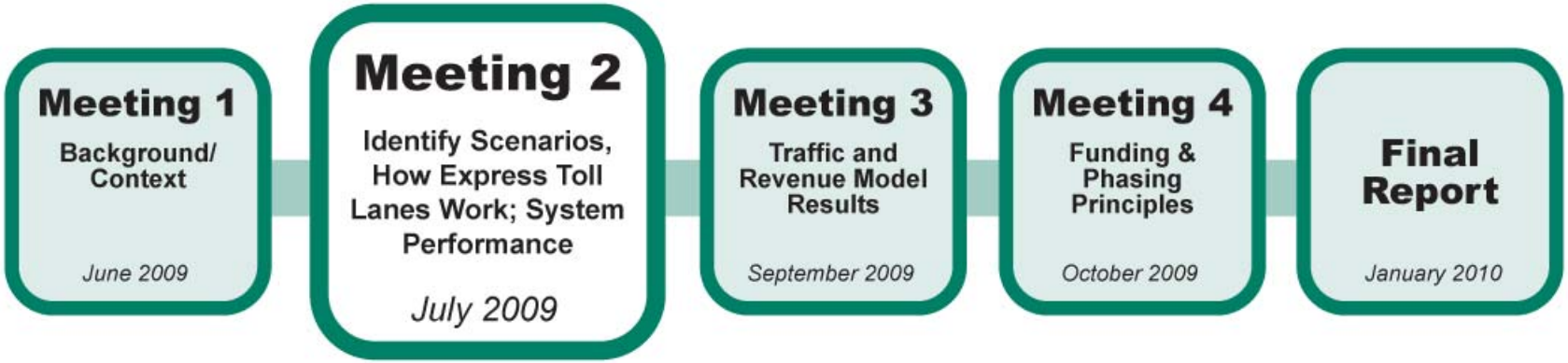


Draft Schedule

Tolling Outreach Timeline



Tolling Study Work Plan: What's next?



Wednesday, July 29
1:30–4:00 PM
Renton City Hall

Range of Considerations

- Should we develop a managed lane system on the Eastside Corridor?
- What is the balance between congestion management and revenue generation?
- How should the system operate?
  - A one-lane system? two-lane system? Or, a mix of the two?
  - Should the HOV designation be 2+ or 3+ or be phased from 2+ to 3+ as it becomes necessary?
- How should we implement the system?

Questions?

For more information on the
Eastside Corridor Tolling Study, please contact:

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Washington State Department of Transportation