

Eastside Corridor

Tolling Study

Interagency Working Group
December 3, 2009



Washington State
Department of Transportation

Welcome

Craig Stone

Director of WSDOT Toll Division

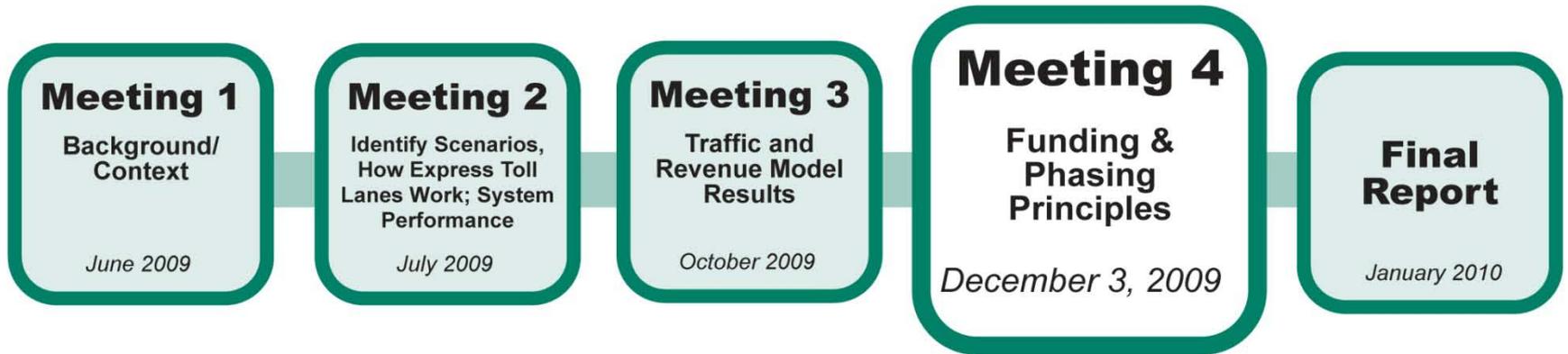


**Washington State
Department of Transportation**

Agenda

1. Recap public outreach results
2. Review Traffic Results for Options 1-5
 - Discuss sensitivity analysis
3. Review Revenue Results for Options 1-5
 - Discuss sensitivity analysis
4. Reflect and finalize study principles

Meeting Goals



1. Review and finalize funding and phasing principles

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?



Draft principles we reviewed at Meeting 3

- Need policy to address 2+, 3+ HOV
- Fix the worst first
- Traffic operations / congestion relief is first priority
- Revenue generated from tolling should stay in the corridor
- Corridors that generate user fees -- such as tolling -- should get higher prioritization for other funding than ones that do not have user fees
- Proposed system needs to fit within regional toll lane context
- Continue working on interim solution towards master plan BRT vision
- Create a phasing plan which arrives at a seamless corridor

What is our charge?

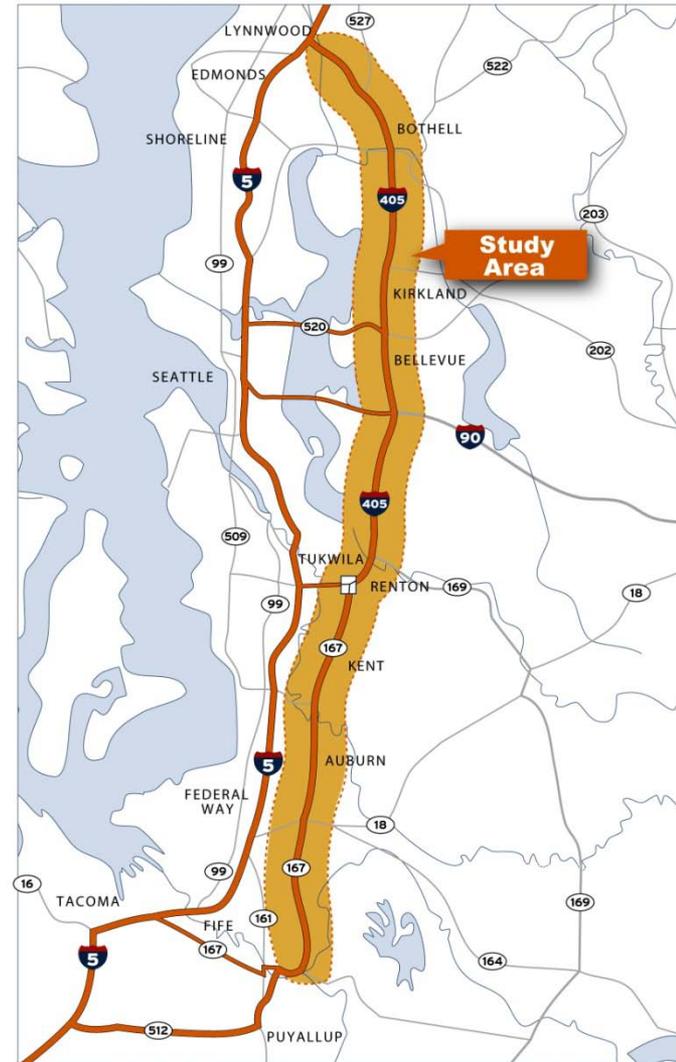
Transportation Budget – ESSB 5352

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.



Public Outreach Results

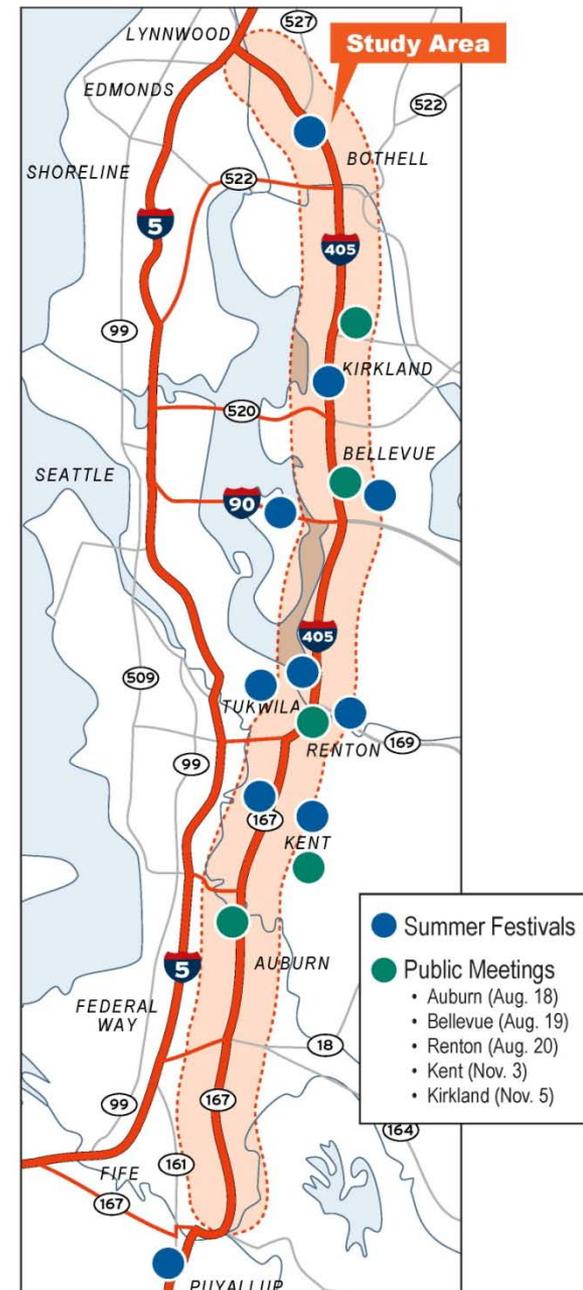
Bruce Brown
PRR



Washington State
Department of Transportation

Public Outreach – *By the Numbers*

- Hosted booths at **10** summer festivals
- Heard from **1,105** people through comment forms and email correspondence
- Mailed **220,000** postcards to households in the I-405 and SR 167 corridor to advertise the online survey and open houses
- Held **5** public meetings, 3 in August and 2 in November
- Fielded **2,584** online surveys
 - **40%** of participants use both I-405 and SR 167 regularly
- Conducted a statistically valid phone survey of **1,002** I-405 or SR 167 users
- Facilitated **4** corridor focus groups
 - **2** with I-405 users and **2** with SR 167 users (**30** total participants)

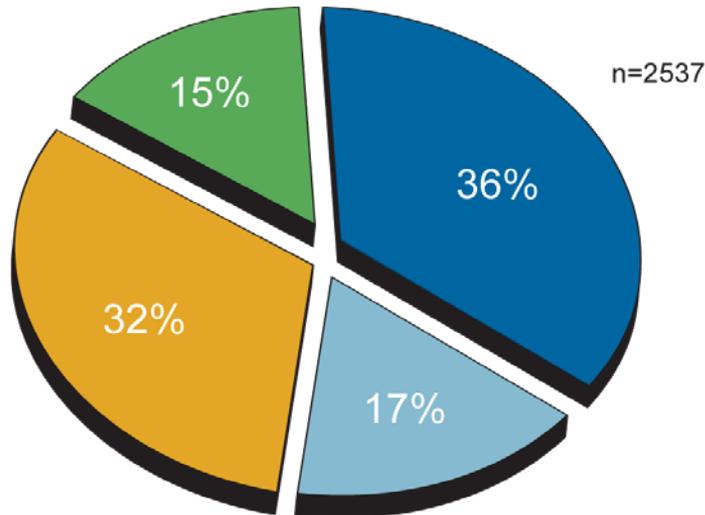


Online Survey Results

- **Market segments:**

Online Survey Market Segments

Base: All respondents who participated in the phone survey



■ No way ■ Possibly ■ Probably ■ I'm sold

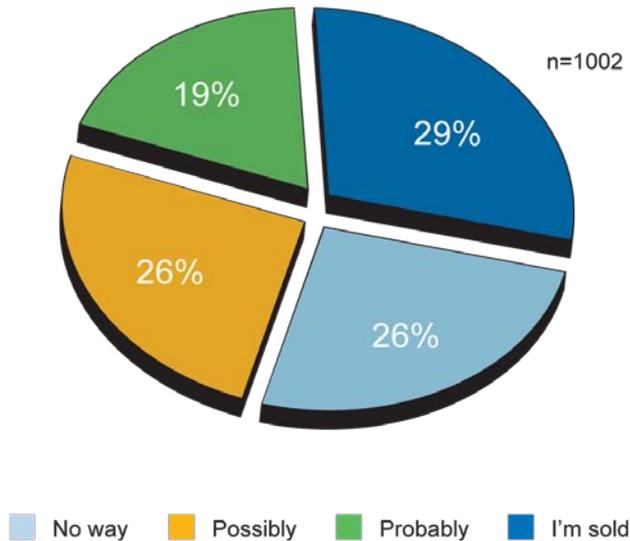
- **Factors most predictive of support for express toll lanes:**

- Previous experience using HOT lanes on SR 167
- Experienced more congestion on SR 167 in previous week
- Younger in age

Phone Survey Results

Phone Survey Market Segments

Base: All respondents who participated in the phone survey



Factors most predictive of support for express toll lanes:

- The more **traffic congestion experienced** on I-405 in the last week, the more supportive of express toll lanes
- Strong appeal of the statements:
 - *“Tolling will help **guarantee travel speeds** of at least 45 mph, providing a more reliable trip to those who use express toll lanes”*
 - *“Moving vehicles out of the general purpose lanes and into express toll lanes will **increase speeds in all lanes**”*
 - *“**Tolling funds** could go directly into a dedicated account to **maintain and improve** the I-405 and SR 167 travel corridors”*
 - *“Express toll lanes would collect tolls electronically as vehicles travel at regular highway speeds. There would be **no toll booths**”*

Corridor Focus Groups



- **Four focus groups:**

- Two with I-405 users (conducted in Bellevue with residents from Issaquah, Bothell, Snohomish, Sammamish, Seattle, Renton, Bellevue, Shoreline and Kirkland)
- Two with SR 167 users, one with HOT lane users (conducted in Puyallup with residents from Seattle, Newcastle, Renton, Kent, Auburn, Milton, Puyallup and Bonney Lake)

- **Key findings**

- Those who used SR 167 HOT lanes are very supportive
- Despite skepticism in the three groups that had never tried HOT lanes, some participants could appreciate express toll lane benefits like:
 - Additional option for traveling in a faster lane other than carpooling
 - Would reduce stress
 - Good use of under-used HOV lanes
 - Could generate funds for infrastructure improvements
 - Could relieve congestion in all lanes

Key Findings...

- **Use = Support.** Focus groups show that those who have used toll lanes, like the SR 167 HOT lanes, support the idea of express toll lanes on I-405.
- **Congestion relief = Willingness to pay.** Our research shows that approximately 52 percent of those who filled out comment forms would pay to use express toll lanes if it would give them a faster, more reliable trip. Participants in the focus groups who have used HOT lanes are willing to pay up to \$5 a segment on I-405 to travel faster.
- **Understanding = Support.** People who understand the benefits of express toll lanes tend to support them. When electronic toll operations were explained to phone survey participants, they found the collection method to be appealing.
- **Undecided = Opportunity.** For people who do not yet know the benefits of express toll lanes, there is an opportunity to alleviate their concerns through further information.
- **Dislike of tolls = Non supporters.** People who dislike the idea of tolling under most or all circumstances are unlikely to become supporters.

Traffic Results: Options 1 - 5 and Sensitivity Analysis

Karl Westby
Eastside Corridor



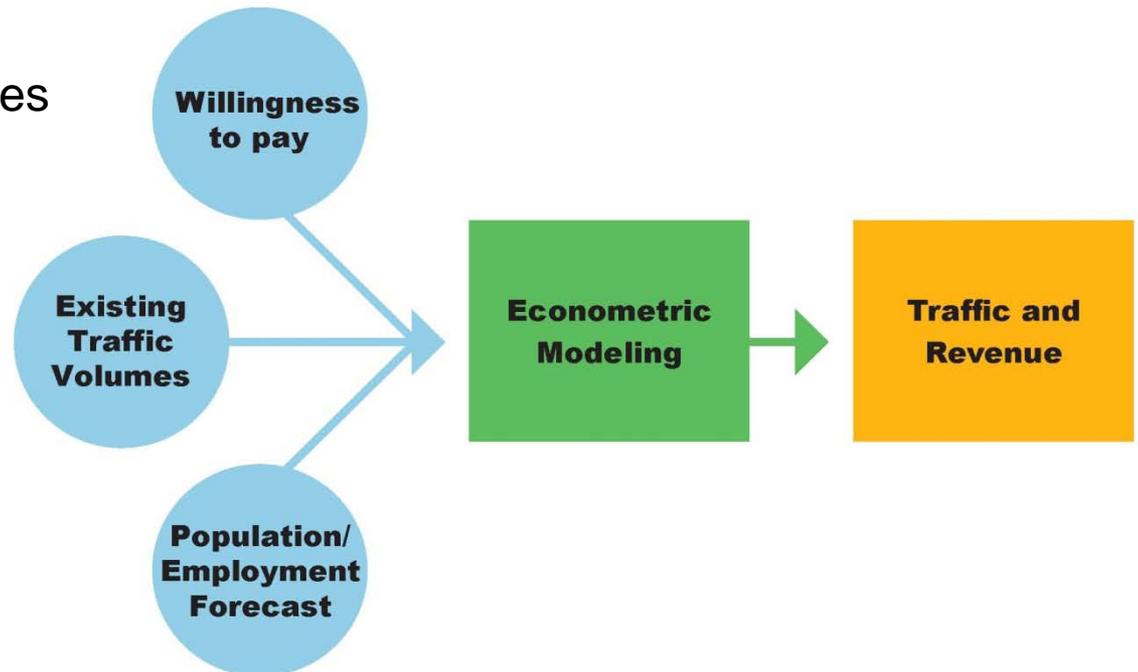
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Traffic and Gross Revenue Analysis

Planning Level Study

Three Major Factors Driving Analysis Results

- Population and Employment Forecasts
- Willingness to Pay
- Existing Traffic Volumes



Traffic and Gross Revenue Analysis

System Performance

- The performance takes into consideration 5 sections (screen lines) of the corridor
- Evaluates the total number of persons and vehicles moving at high speeds
- Compares, for each option, a tolled improvement and no-tolled improvement
- To make an “apples to apples” comparison, the models use 3+
 - 1, 4, and 5 could operate at 2+ toll free in the near term, but revenue would be less and toll rates would be higher.



Sections of the corridor we studied

Why an express toll lane system?

(preliminary results)

Study Option 1* \$470 M
Funded



*funding possible from savings within the corridor

Study Option 2 \$540 M
Separate Systems



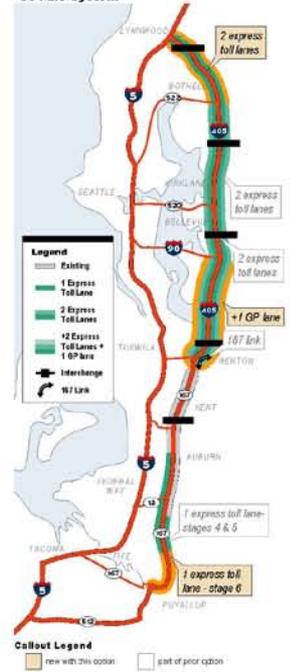
Study Option 3 \$1,030 M
Connected System



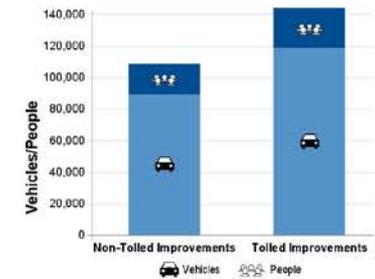
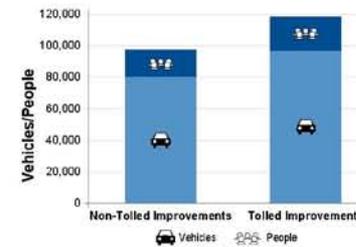
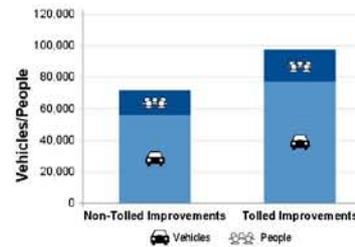
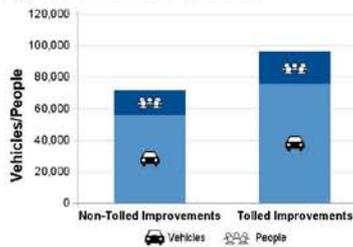
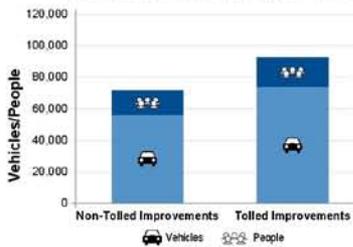
Study Option 4 \$1,950 M
40 Mile System



Study Option 5 \$4,100 M
50 Mile System



Vehicles and people moving at freeflow speeds



How much are people paying?

(preliminary results)

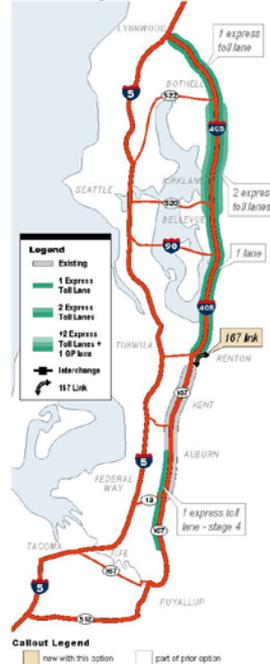
Study Option 1*
Funded



Study Option 2
Separate Systems



Study Option 3
Connected System



Study Option 4
40 Mile System

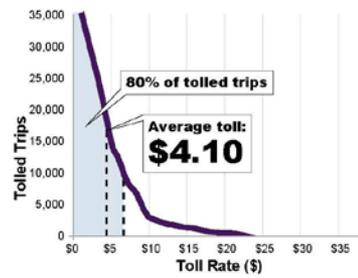
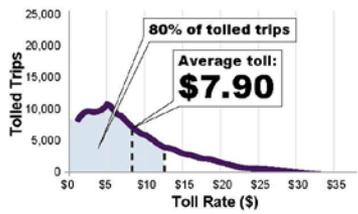
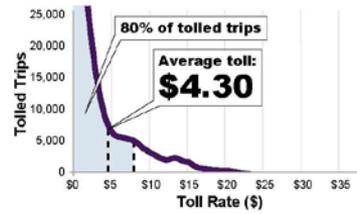
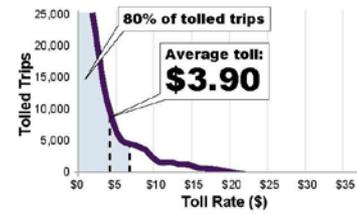
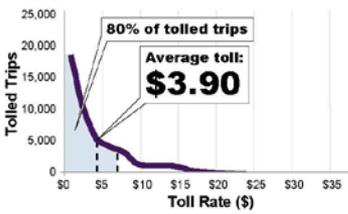


Study Option 5
50 Mile System



*funding possible from savings within the corridor

2020 Weekday Daily Average Toll Rates (2008 Dollars)



Express Toll Lanes and Local Streets

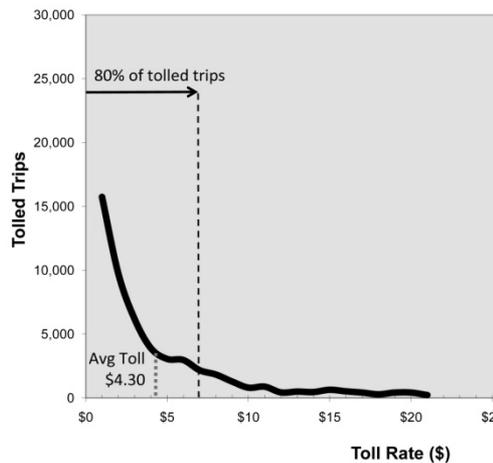
- I-405 improvements remove traffic from local streets
- Added capacity to I-405 decreases peak period volumes on the local street network.
 - Study Option 1 reduces traffic on 124th Ave NE (Kirkland) by 15%
 - Study Option 4 reduces traffic on 118th SE and Lake Hills Connector/Richards Rd. (Bellevue) by 15%
 - Study Option 4 reduces traffic on Lake Washington Blvd. N (Renton) by 30%

Sensitivity Tests

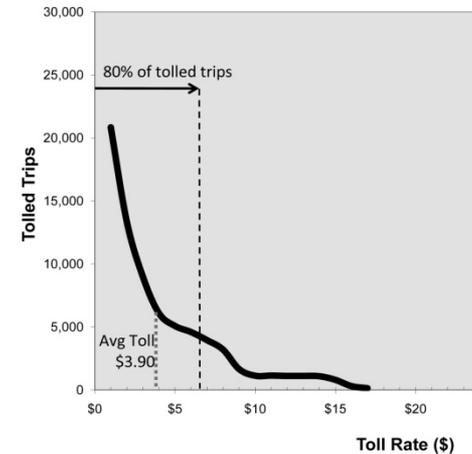
2+ HOV

- Rates are higher (Due to less space to sell)
- Revenue is lower (Less buy-in opportunity)

2020 Option 1 Toll Rates at 2+



2020 Option 1 Toll Rates at 3+



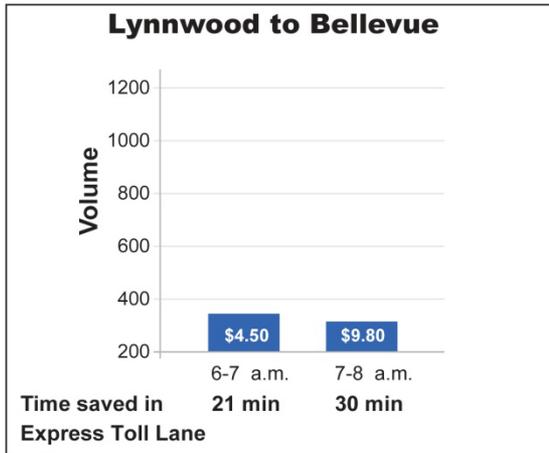
Toll Cap

- \$12.00 for Study Option 1
- Closed to HOV when the toll cap is reached

2013 Sample Commutes Entering Bellevue Option 1

2+ HOV Toll Free

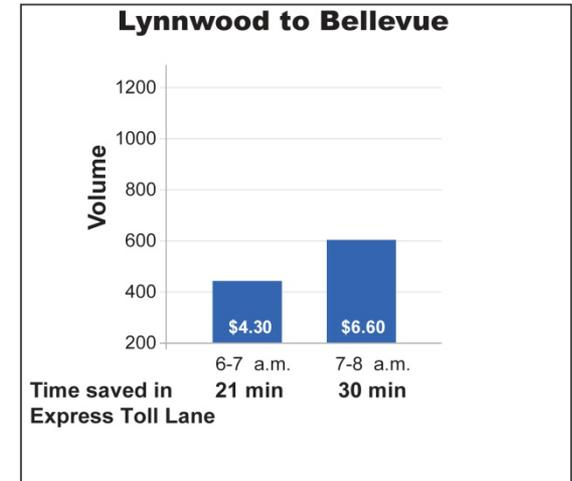
Lynnwood to Bellevue



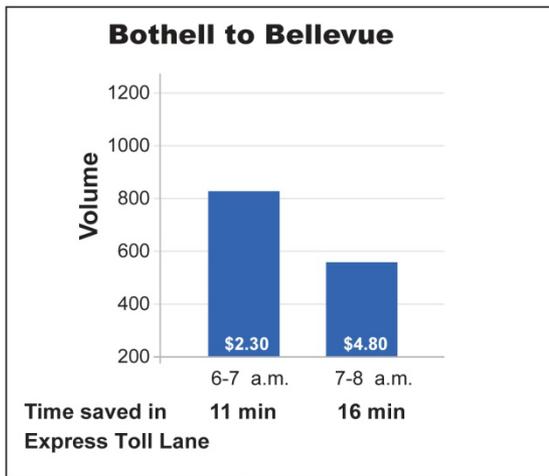
** Extrapolated data for 2013

3+ HOV Toll Free

Lynnwood to Bellevue

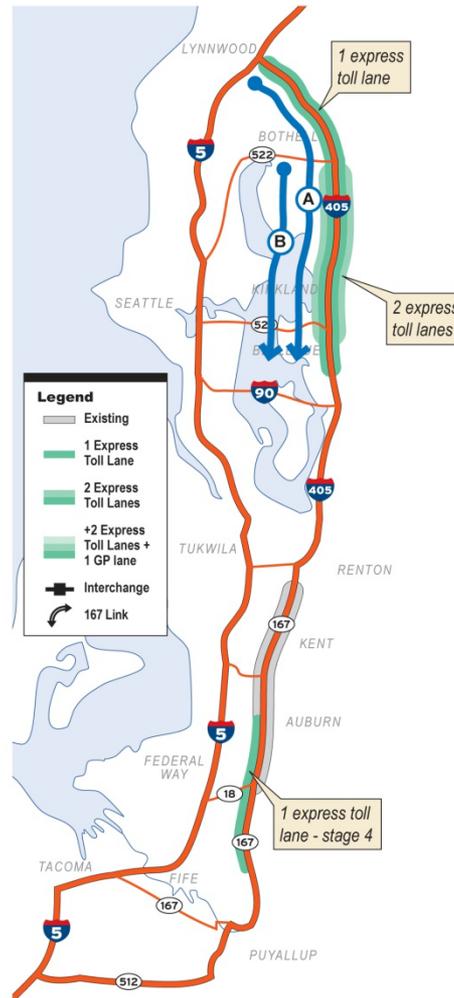
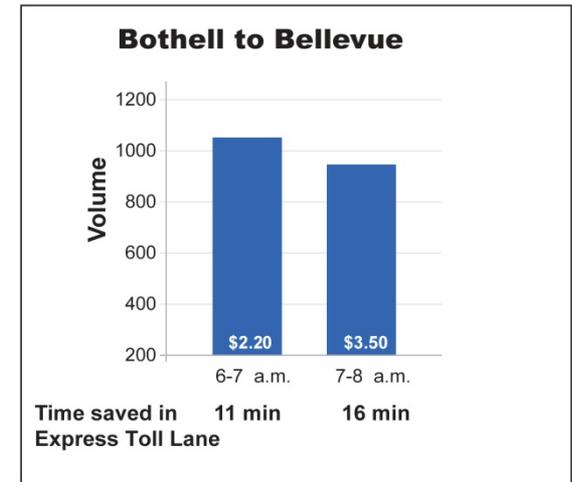


Bothell to Bellevue



** Extrapolated data for 2013

Bothell to Bellevue



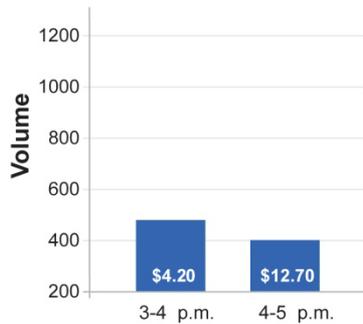
* In 2008 Dollars

2013 Sample Commutes Leaving Bellevue

Option 1

2+ HOV Toll Free

Bellevue to Lynnwood

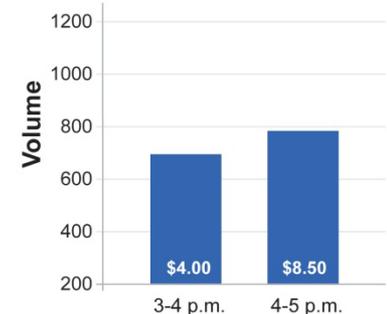


Time saved in Express Toll Lane
 30 min 30 min

** Extrapolated data for 2013

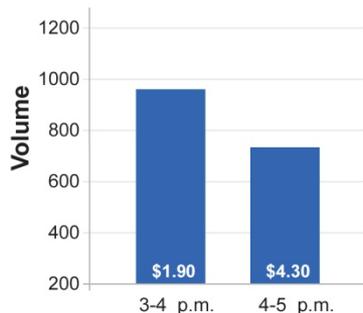
3+ HOV Toll Free

Bellevue to Lynnwood



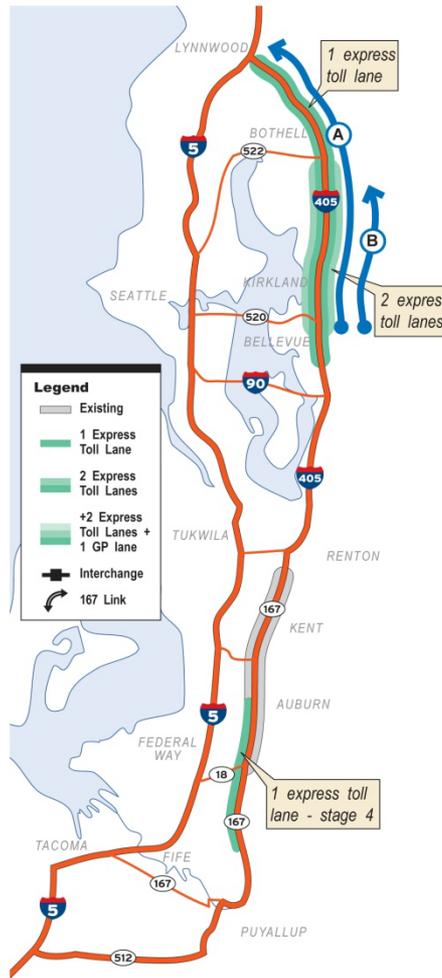
Time saved in Express Toll Lane
 30 min 30 min

Bellevue to Bothell



Time saved in Express Toll Lane
 11 min 16 min

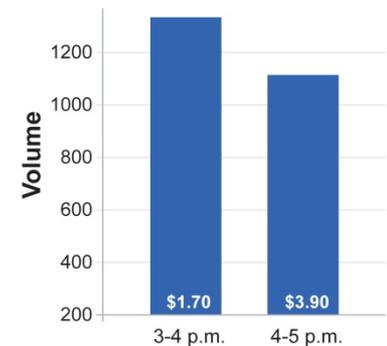
** Extrapolated data for 2013



Callout Legend
 new with this option part of prior option

* In 2008 Dollars

Bellevue to Bothell



Time saved in Express Toll Lane
 11 min 16 min

Revenue Results and Sensitivity Analysis

Josh Posthuma
Parsons Brinkerhoff



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Bonding Assumptions

- Analyzed both non-recourse and state-backed finance options
- Bond terms provided by the Washington State Office of the State Treasurer

Bond Terms	
Bond Maturity	30 Years
Interest Rates Non-Recourse	9-10%
Interest Rate Triple Pledge	6 - 6.5%
Debt Service Coverage Ratio	2.0

- Debt Service Coverage Ratio could be lowered with proven results from a corridor project

Funding and Bonding Scenarios

(preliminary results)

Capital and Need	Funding	Study Option 1*	Study Option 2	Study Option 3	Study Option 4	Study Option 5
	Capital cost	\$470 M	\$540 M	\$1,030 M	\$1,950 M	\$4,103 M
	Available funding	\$403 M	\$403 M	\$403 M	\$403 M	\$403 M
	Funds Needed	(\$87 M)*	(\$140 M)	(\$630 M)	(\$1,550 M)	(\$ 3,700 M)

* Funding possible from savings within the corridor.

Non-recourse Bonds (3+)	Bonding	Study Option 1	Study Option 2	Study Option 3	Study Option 4	Study Option 5
	Range of net bond proceeds	\$150-265 M	\$175-310 M	\$190-340 M	\$460-795 M	\$300-580 M
	Percent of funding gap filled	100%+	100%+	30-55%	30-50%	20-35%
	Remaining funding gap	\$0	\$0	(\$290-440 M)	(\$755-1,090 M)	(\$3,120-3,400 M)

State-backed HOV (3+)	Bonding	Study Option 1	Study Option 2	Study Option 3	Study Option 4	Study Option 5
	Range of net bond proceeds	**	**	\$415-745 M	\$910-1,565 M	\$545-1,055 M
	Percent of funding gap filled	**	**	65-100%+	60-100%+	35-70%
	Remaining funding gap	**	**	\$0 - (\$215 M)	\$0 - (\$640 M)	(\$2,845-3,155 M)

Non-recourse HOV (2+)	Bonding	Study Option 1	Study Option 2	Study Option 3	Study Option 4	Study Option 5
	Range of net bond proceeds	\$65-130 M	**	**	\$310-545 M	**
	Percent of funding gap filled	97-100%+	**	**	20-35%	**
	Remaining funding gap	\$0	**	**	(\$1,005-1,240 M)	**

State-backed HOV (2+)	Bonding	Study Option 1	Study Option 2	Study Option 3	Study Option 4	Study Option 5
	Range of net bond proceeds	**	**	**	\$580-1,035 M	**
	Percent of funding gap filled	**	**	**	35-65%	**
	Remaining funding gap	**	**	**	(\$515-970 M)	**

Toll Cap (3+) Non-recourse	Bonding	Study Option 1	Study Option 2	Study Option 3	Study Option 4	Study Option 5
	Range of net bond proceeds	\$125-220 M	**	**	**	**
	Percent of funding gap filled	100%+	**	**	**	**
	Remaining funding gap	\$0	**	**	**	**

** Sensitivity not performed for this option



Reflect & Finalize Study Principles

Kim Henry
Eastside Corridor Project Director

Denise Cieri
Eastside Corridor Project Team



Washington State
Department of Transportation

I-405 Managed Lanes & Corridor History

2002

- EIS
- Master Plan
- Managed Lanes

2003

- Managed Lanes Technical Analysis

2005

- SB 6091, Section 606
"... include managed lane concept"

2006

- Express Toll Lane Investment Analysis

2007

- SB 1094, Section 605
"managed lane concept applied in design and implementation"

2008

- HB 1773 designates *"eligible toll facilities"*

2009

- ESSB 5353 Eastside Corridor Tolling Study

Corridor EIS, complete in 2002:

- Program committees recommended further consideration of managed lanes after more detailed study and policy considerations. They considered pricing a regional issue
- Include a 4-foot buffer to separate the managed lanes.

Senate Bill 6091, passed in 2005:

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

Senate Bill 1094, passed in 2007:

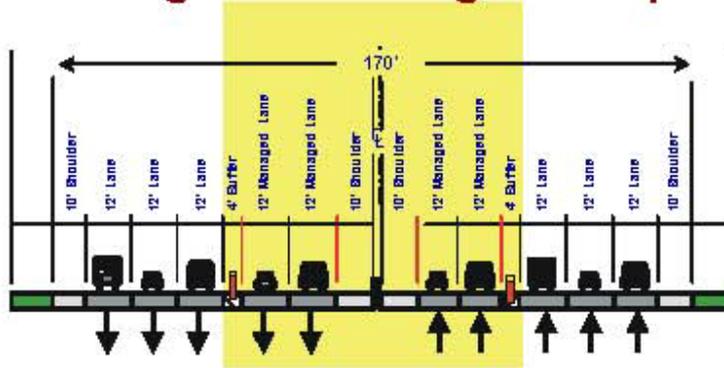
- Section 605. The legislature intends that tolls be charged to offset or partially offset the costs of the following projects, and that a managed lane concept be applied in their design and implementation. SR 520 Bridge, replacement and HOV project, and widening of Interstate 405.

House Bill 1773, passed in 2008:

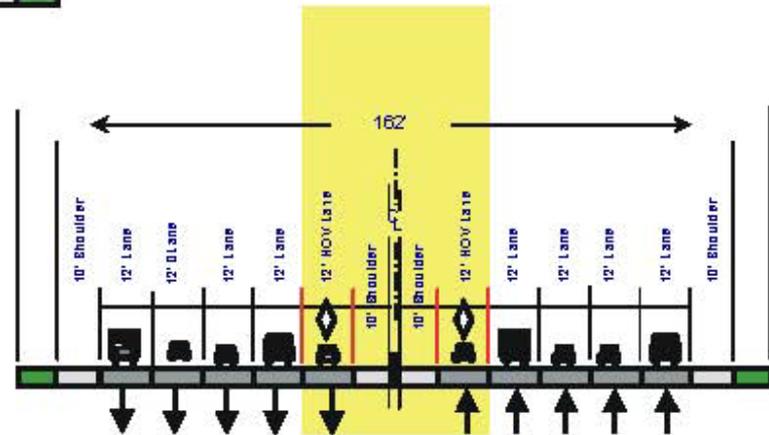
- Tolling policy bill to provide a source of transportation funding and to encourage effective use of the transportation system.
- Legislature designates eligible toll facilities.
- WSDOT to provide project, budget and finance plan for legislative approval for imposition of tolls.

I-405 Design Concepts

Managed Lane Design Concept



HOV Lane Design Concept



Managed Lanes Key Principles

- 1. Move more people**
- 2. Improve corridor speeds**
- 3. Increase mode splits**
- 4. Minimize diversion to arterials or neighborhood streets**
- 5. Provide mobility for freight**



Draft principles we reviewed at Meeting 3

- Need policy to address 2+, 3+ HOV
- Fix the worst first
- Traffic operations / congestion relief is first priority
- Revenue generated from tolling should stay in the corridor
- Corridors that generate user fees -- such as tolling -- should get higher prioritization for other funding than ones that do not have user fees
- Proposed system needs to fit within regional toll lane context
- Continue working on interim solution towards master plan BRT vision
- Create a phasing plan which arrives at a seamless corridor

Combined Principles

The Eastside Corridor (I-405/SR 167) express toll lane vision is to optimize freeway lane performance and manage congestion.

Operations

1. Move more people.
2. Improve corridor speeds to free-flow conditions.
 - o May require change in minimum HOV occupancy.
3. Increase mode splits
4. Minimize diversion to arterials or neighborhood streets.
5. Improve mobility for freight and drivers in all lanes.

Funding

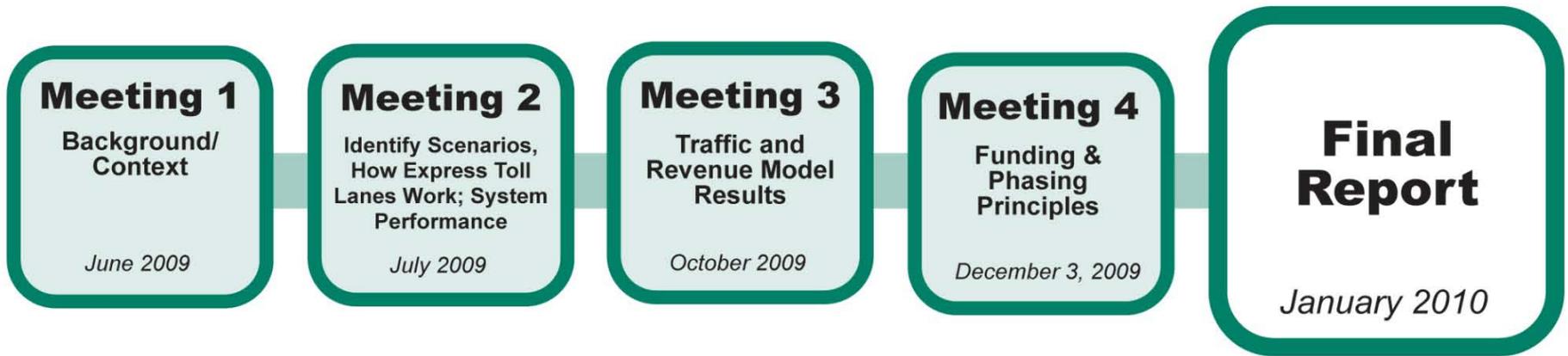
6. Retain tolling revenue in the Eastside Corridor.
7. Secure financing with fair terms, similar to other corridors.
8. Exempt transit and carpools from tolls

Implementation

9. Implement with a phased approach, logical segments, and building upon funded projects.

Coordination

10. Grow awareness, experience and support by engaging the public, local agencies and elected officials.



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.**

HAPPY HOLIDAYS!

Questions?

For more information please contact:

Denise Cieri, Eastside Corridor Deputy Project Director

CieriD@wsdot.wa.gov

425-456-8509

Meeting materials posted at:

www.wsdot.wa.gov/tolling/eastsidecorridor



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