

Eastside Corridor ***Tolling Study***

Executive Advisory Group
December 10, 2009



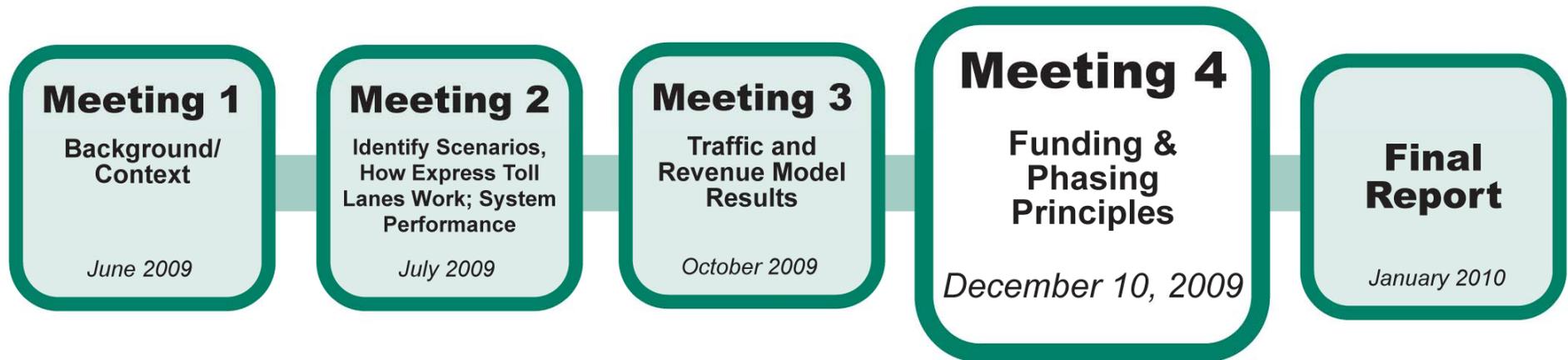
Welcome

Craig Stone

Director of WSDOT Toll Division



Meeting Goals and 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

What is our charge?

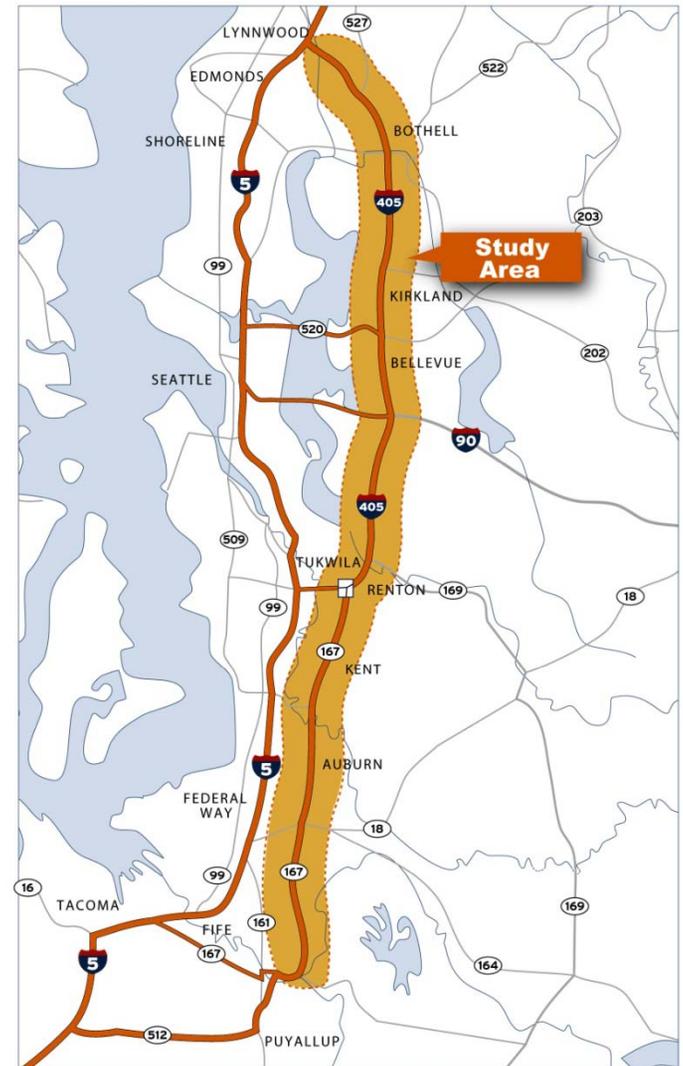
Transportation Budget – ESSB 5352

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.



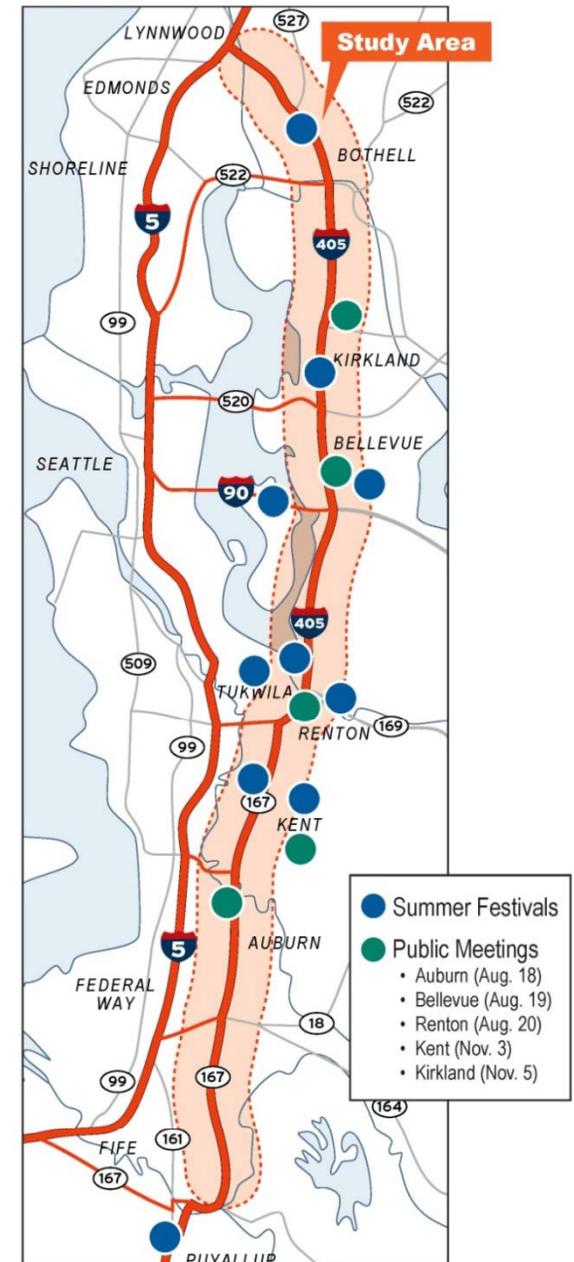
Public Outreach Results

Bruce Brown
PRR



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
 - **3%** of participants use only SR 167
- 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)

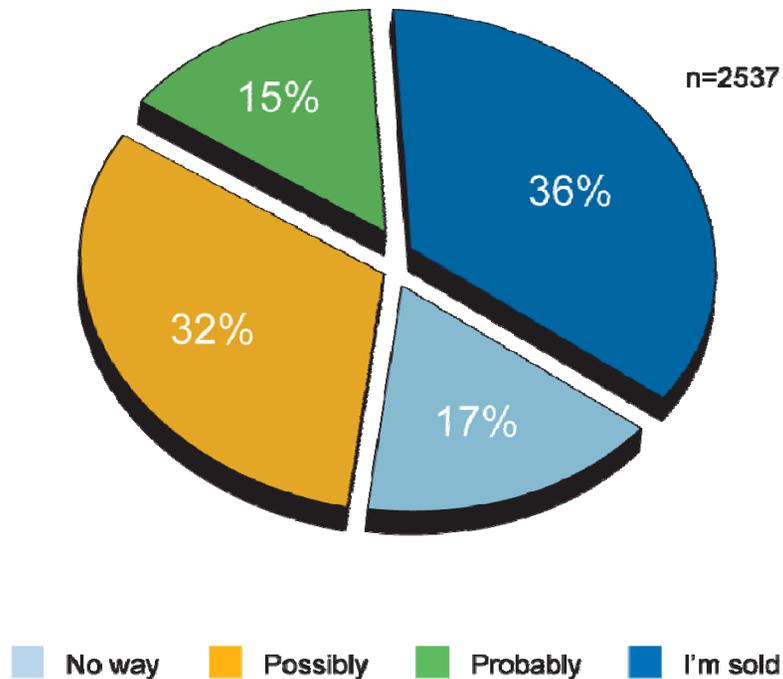


Online Survey Results

- **Market segments:**

Online Survey Market Segments

Base: All respondents who participated in the online survey



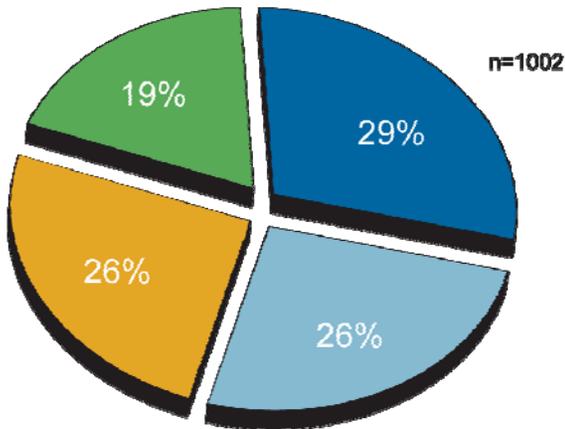
- **Factors most predictive of support for express toll lanes:**

- 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



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



■ 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

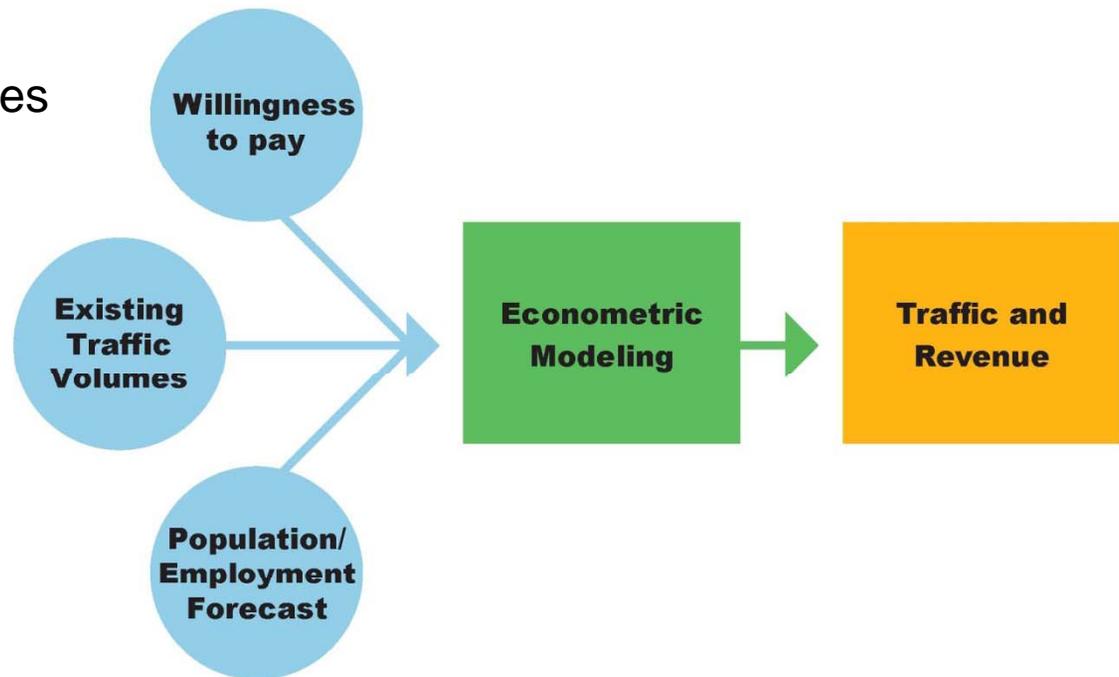


Traffic and Gross Revenue Analysis

Planning Level Study

Three Major Factors Driving Analysis Results

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



Traffic and Gross Revenue Analysis

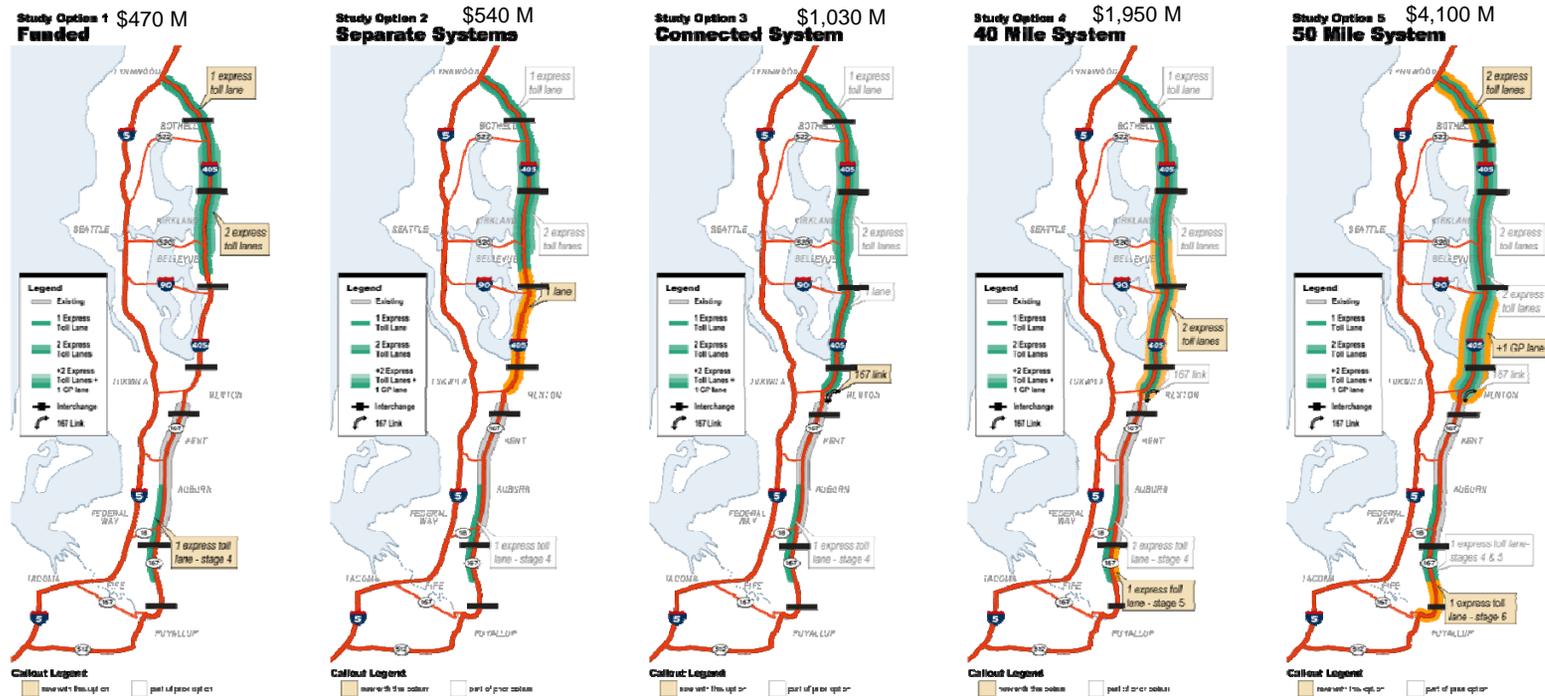
System Performance

- The performance takes into consideration 7 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

Performance – express toll vs. general purpose lanes (preliminary results)



Vehicles and people moving at freeflow speeds, 2020 AM Peak 2-Hours, Peak Directions, All Lanes



Freeflow = 45 - 60 mph

Express toll lane performance across Options

(preliminary results)

Vehicles and people moving at freeflow speeds *2020 AM Peak 2-Hours, Peak Directions, All Lanes*

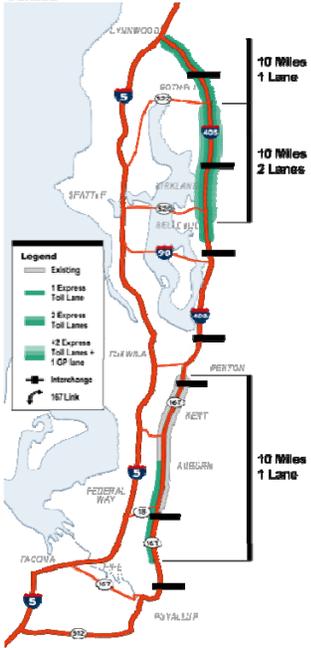


Freeflow = 45 – 60 mph

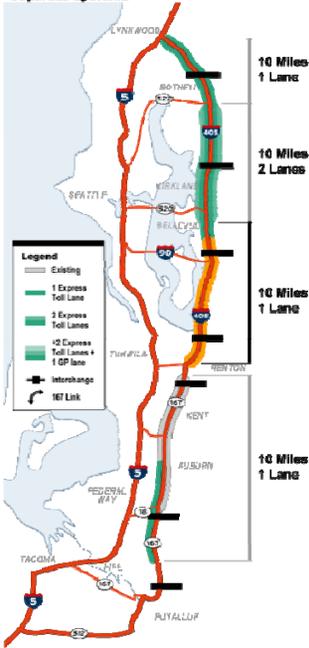
Comparison of Study Options – Average Toll Rates

(preliminary results)

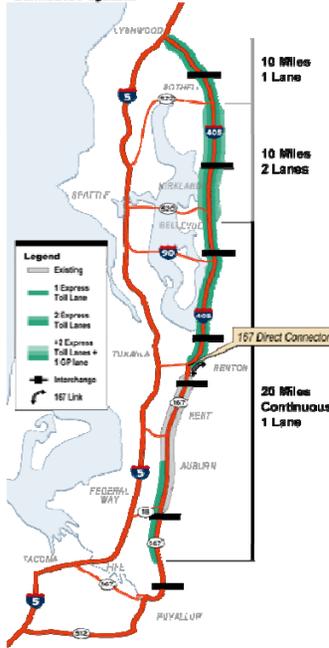
Study Option 1* \$470 M
Funded



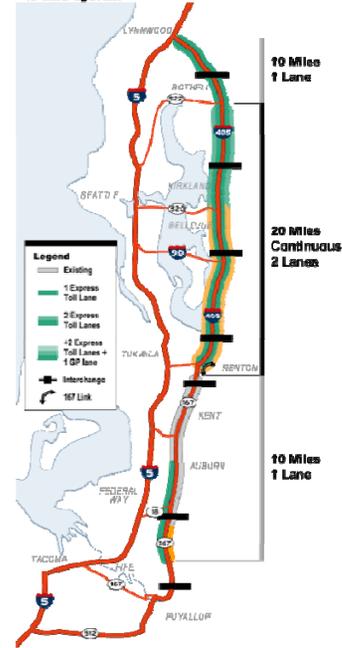
Study Option 2 \$540 M
Separate Systems



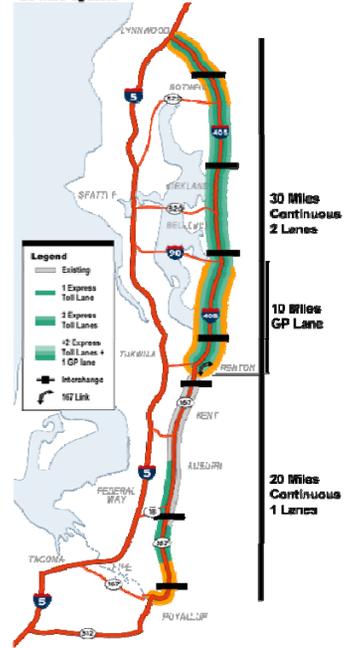
Study Option 3 \$1,030 M
Connected System



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

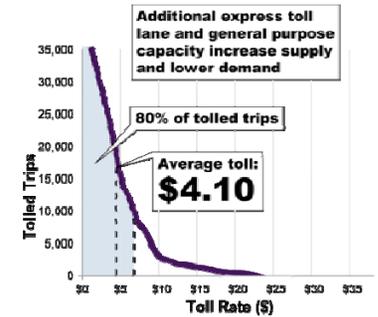
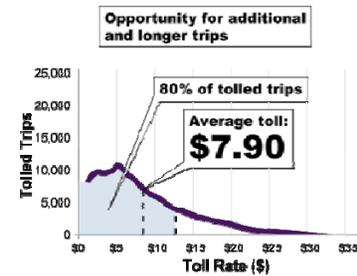
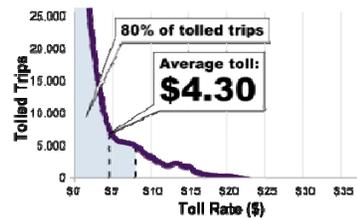
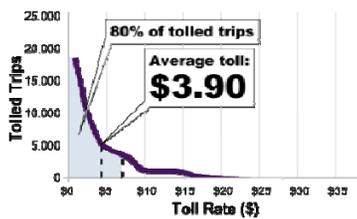


Study Option 5 \$4,100 M
50 Mile System

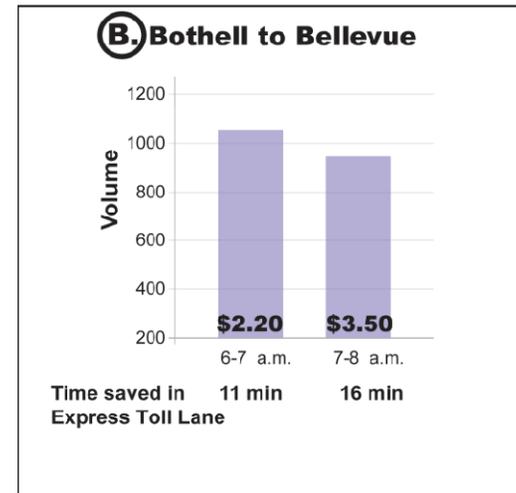
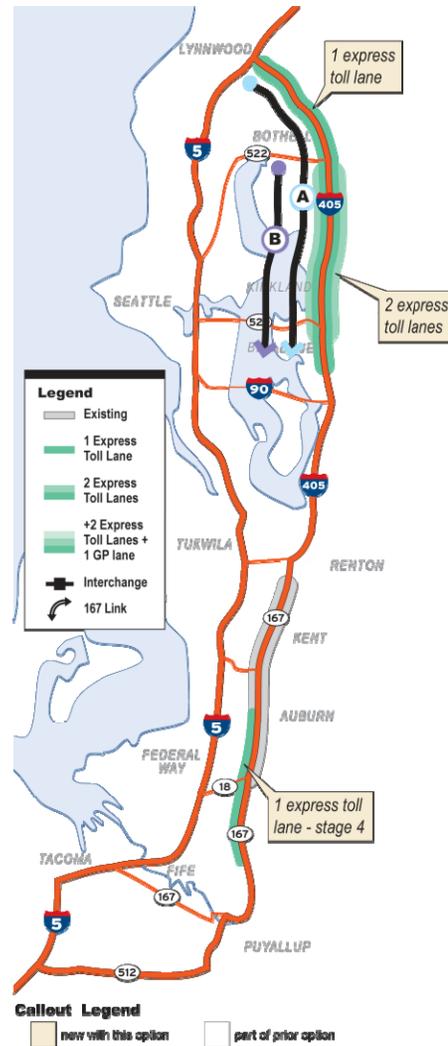


*Funding possible from savings within the corridor

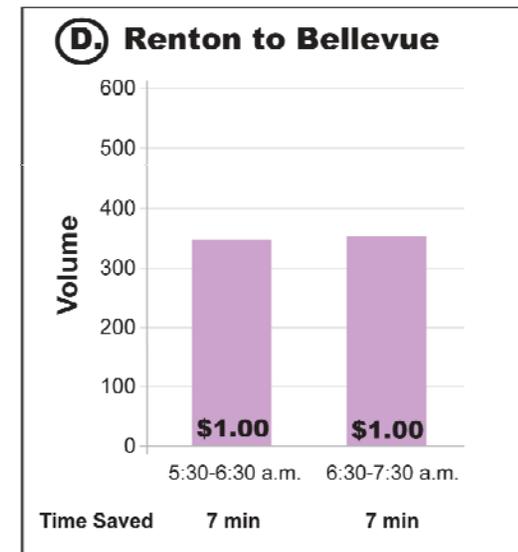
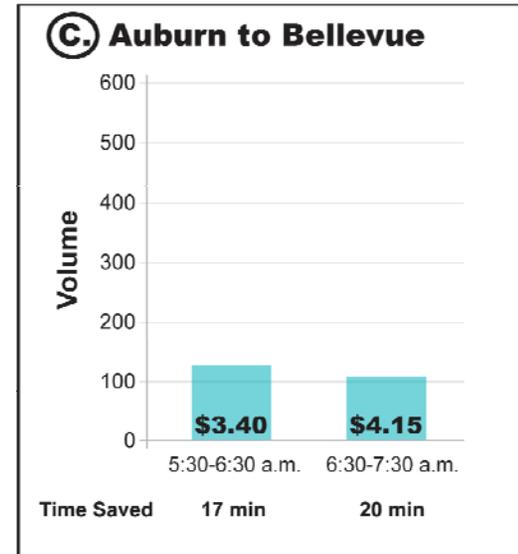
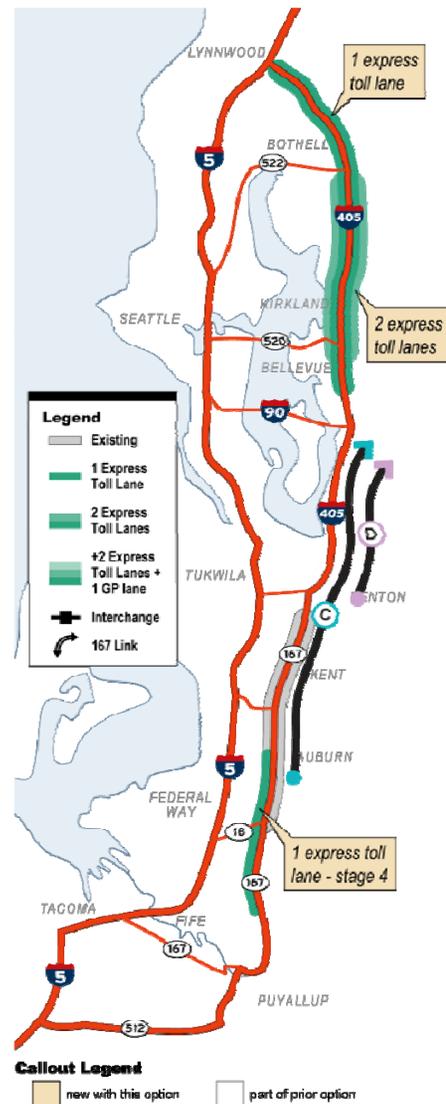
2020 Weekday, All Day, Toll Rates (2008 Dollars)



2013 Sample Commutes Entering Bellevue Option 1 (3+ Toll Free)



2013 Sample Commutes Entering Bellevue Option 4 (3+ Toll Free)



Challenges:

Do express toll lanes cause diversion to local streets?

- No, I-405 improvements remove traffic from local streets
- Added capacity to I-405 decreases peak period volumes on the local street network:
 - Study Options 1-3 reduce 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%
 - Study Option 5 reduces traffic on Filbert Rd. by 10% and Woodinville-Snohomish Rd. (Bothell) by 30%

Challenges: 2+ HOV Lane Operations

- HOV lanes should operate at 45 mph 90% of the time.

I-405:

- Current HOV lanes are not meeting performance targets.

SR 167:

- HOV lanes currently have capacity.
- HOT lane pilot project underway.

HOV Lane Congested Segments

AM Peak Period



PM Peak Period



— Congested segments

Sensitivity Tests - 2 + Toll Free



- Less buy-in opportunity, so toll rates are higher.
- Generates limited revenue.



- More buy-in opportunity, so rates are lower.
- Greater revenue-generating potential.

2013 Sample Commutes Entering Bellevue Option 1

2+ HOV Toll Free**

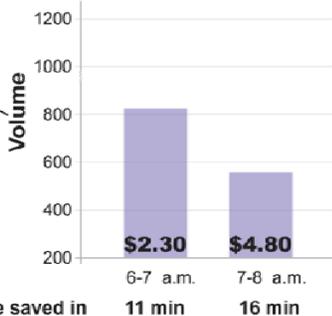
(A) Lynnwood to Bellevue



** Extrapolated data for 2013

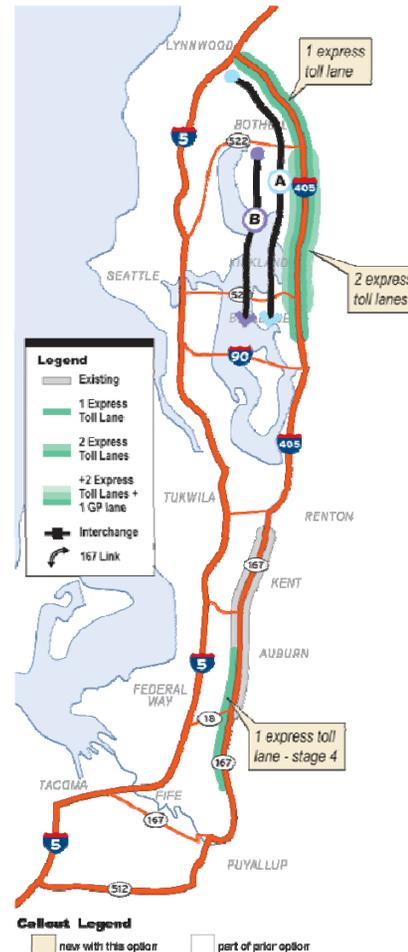
The toll rate shown here represents the average price for an hour in 2008 dollars.

(B) Bothell to Bellevue



** Extrapolated data for 2013

These volumes only represent people making these commutes. They do not represent all trips in the express toll lanes.



3+ HOV Toll Free

(A) Lynnwood to Bellevue



Time saved in Express Toll Lane

(B) Bothell to Bellevue

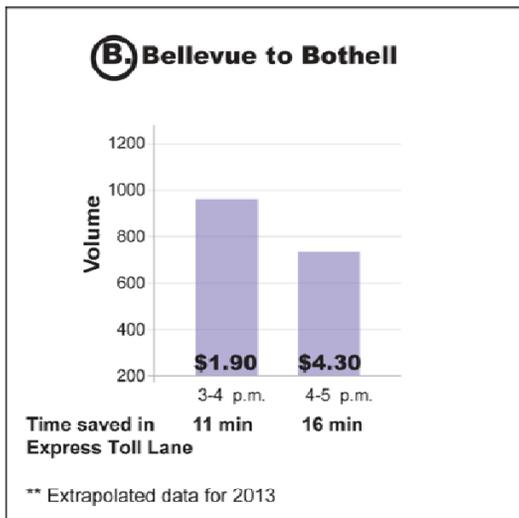
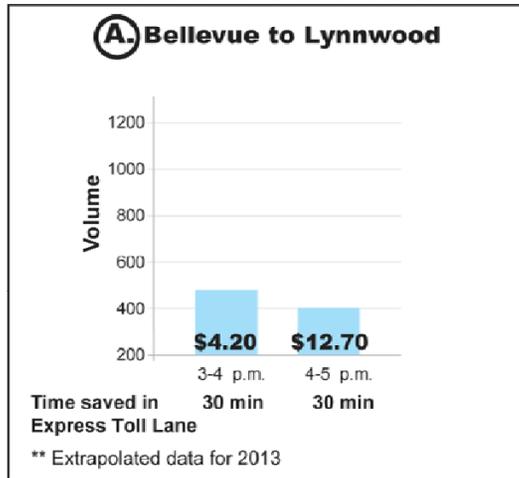


Time saved in Express Toll Lane

2013 Sample Commutes Leaving Bellevue

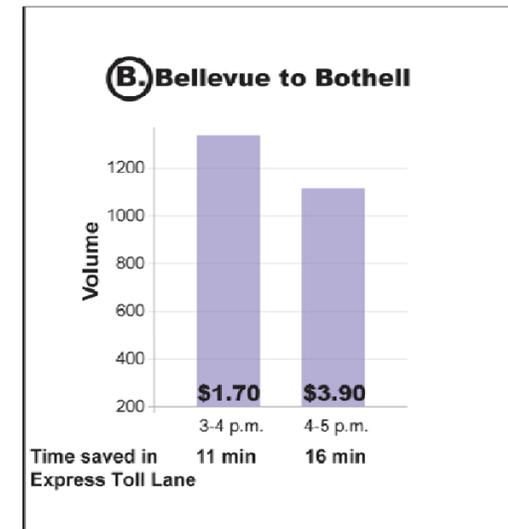
Option 1

2+ HOV Toll Free**



* In 2008 Dollars

3+ HOV Toll Free



Sensitivity Tests - Toll Cap

Toll Cap

- Assumed \$12.00 for Study Option 1
- Express toll lanes become HOV-only when the toll cap is reached: 20% of trips not made
- Reduced revenue



Revenue Results and Sensitivity Analysis

Brent Baker
Parsons Brinkerhoff



Bonding Assumptions

- Analyzed both non-recourse (toll revenue) and state-backed (triple pledge) finance options
- Bond terms provided by the Washington State Office of the State Treasurer

Bond Terms	
Bond Maturity	30 Years
Interest Rates Non-Recourse (Toll Revenue)	9-10%
Interest Rate State-Backed (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	(\$67 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)	(\$2,645-3,155 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



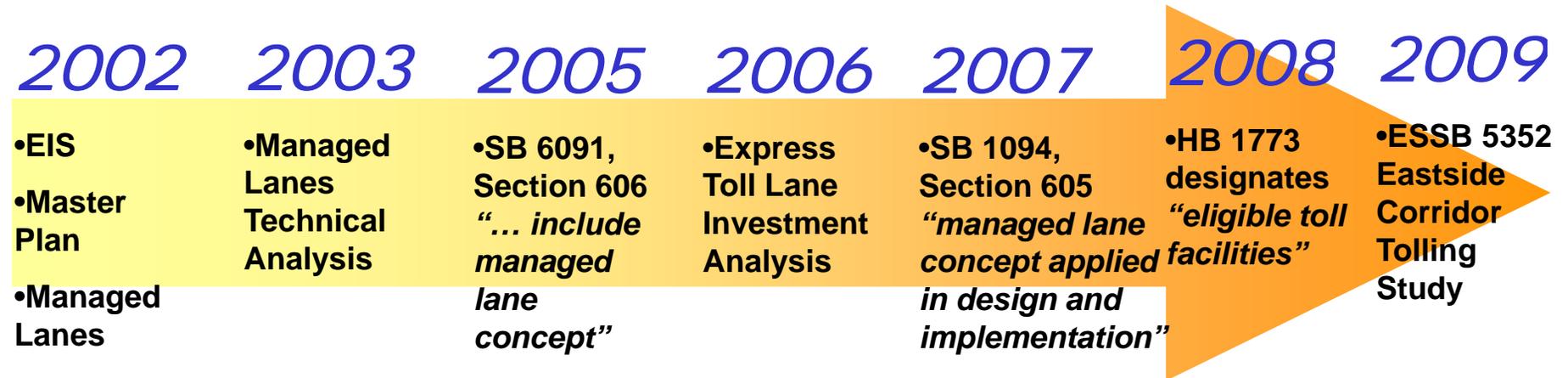
Reflect & Finalize Study Principles

Kim Henry
Eastside Corridor Project Director

Denise Cieri
Eastside Corridor Project Team



I-405 Managed Lanes & Corridor History



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:

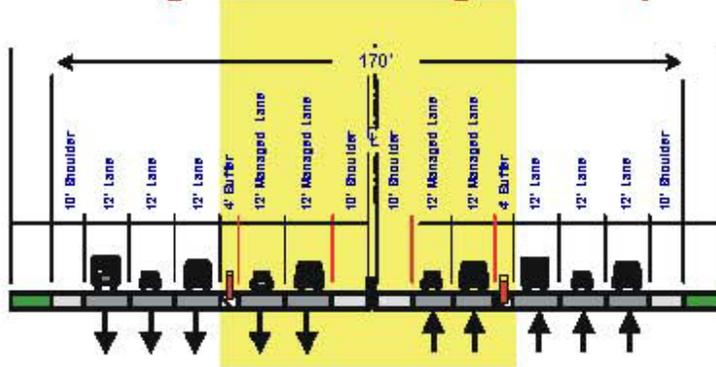
- Section 605. The legislature intends that tolls be charged to offset or partially offset the costs of the following projects, and that a managed lane concept be applied in their design and implementation. SR 520 Bridge, replacement and HOV project, and widening of Interstate 405.

House Bill 1773, passed in 2008:

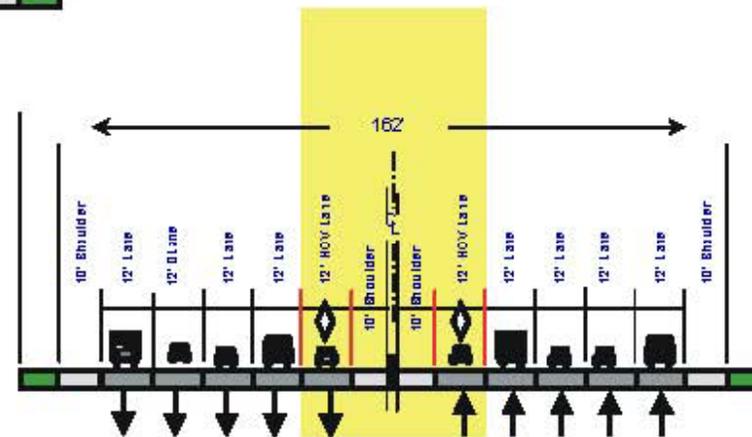
- Tolling policy bill to provide a source of transportation funding and to encourage effective use of the transportation system.
- Legislature designates eligible toll facilities.
- WSDOT to provide project, budget and finance plan for legislative approval for imposition of tolls.

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**

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?



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Yes

Congestion management is first priority

-2 lanes perform better than 1

- 3+ has long term sustainability

Implement Option 4 in phases, beginning with early action on SR 520 to I-5 (Option 1)

Combined Principles

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

Performance

1. Move more people.
2. Manage corridor to improve speed and reliability
 - o May require change in minimum HOV occupancy.
3. Prioritize and accommodate transit performance and HOV users
4. Minimize diversion to arterials or neighborhood streets.
5. Improve mobility for freight and drivers in all lanes.

Funding

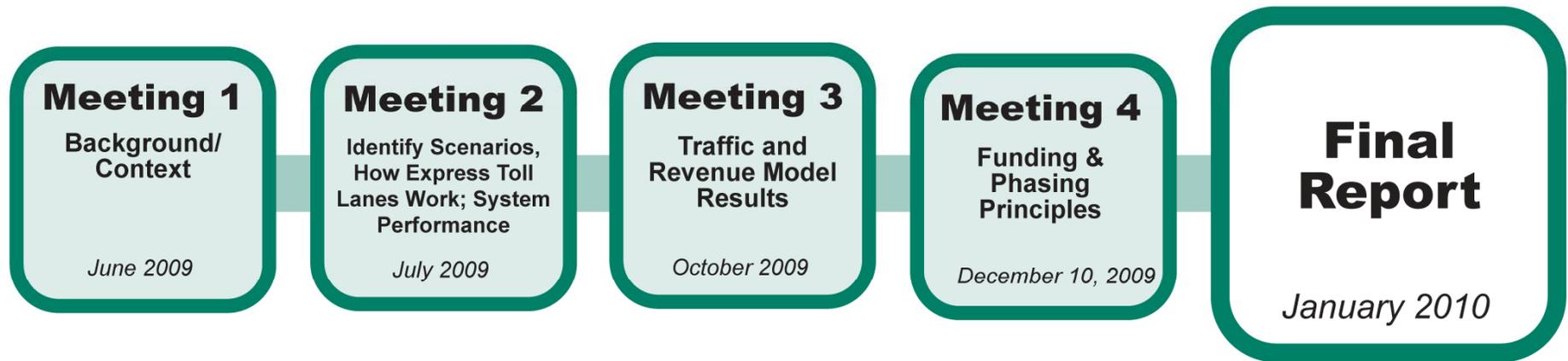
6. Retain tolling revenue in the Eastside Corridor.
7. Secure financing with fair terms, similar to other corridors –leverage traditional funding resources.
8. Exempt transit and carpools from tolls.
9. Continue to monitor national and regional trends to better understand how to fund toll projects
10. Prioritize funding

Implementation

11. Express toll lanes should be built in incremental steps and begin with funded projects
12. Express toll lanes should fit within long range regional planning and tolling system
13. Sensitivity to construction phasing on regional level

Public Outreach

14. Grow awareness, experience and support by engaging the public, local agencies and elected officials.
15. Make tolling operations mainstream and improve access



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:

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CieriD@wsdot.wa.gov
425-456-8509

Meeting materials posted at:
www.wsdot.wa.gov/tolling/eastsidecorridor

