

# **Eastside Corridor**

## ***Tolling Study***

**Interagency Working Group**  
**October 20, 2009**



# Welcome

**Craig Stone**

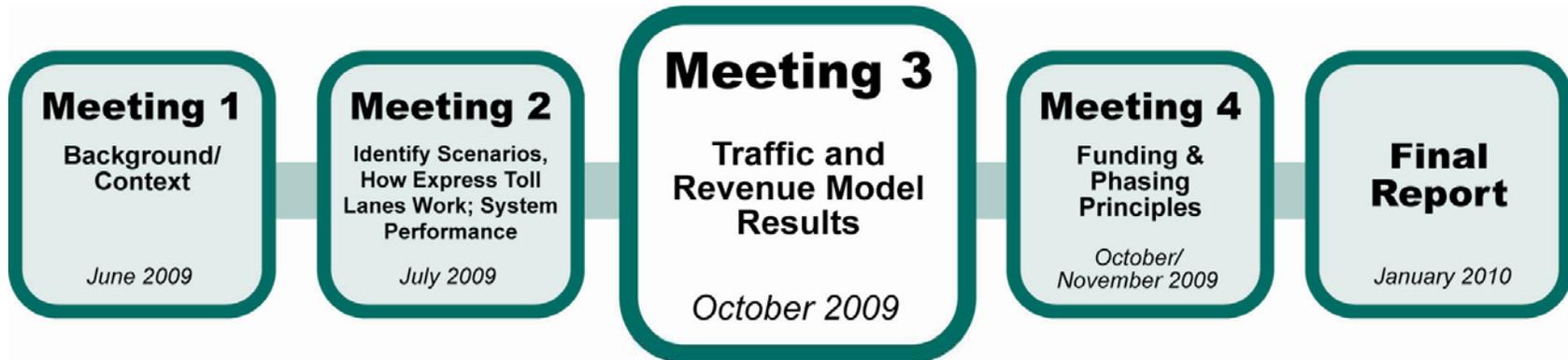
Director of WSDOT Toll Division



# Agenda

- Recap Study Process and Public Input
- Initial Traffic and Revenue Results
- Draft Principles
- Wrap Up

# Meeting Goals



1. Review public input to date
  - Where have we been?
  - Where are we going?
2. Review initial findings of the traffic and revenue results

# 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?



# Study Recap

**Kim Henry**

Eastside Corridor Project Director

**Denise Cieri**

Eastside Corridor Deputy Project Director

**Colleen Gants**

Eastside Corridor Communications



# What is our charge?

## Transportation Budget – ESSB 5352

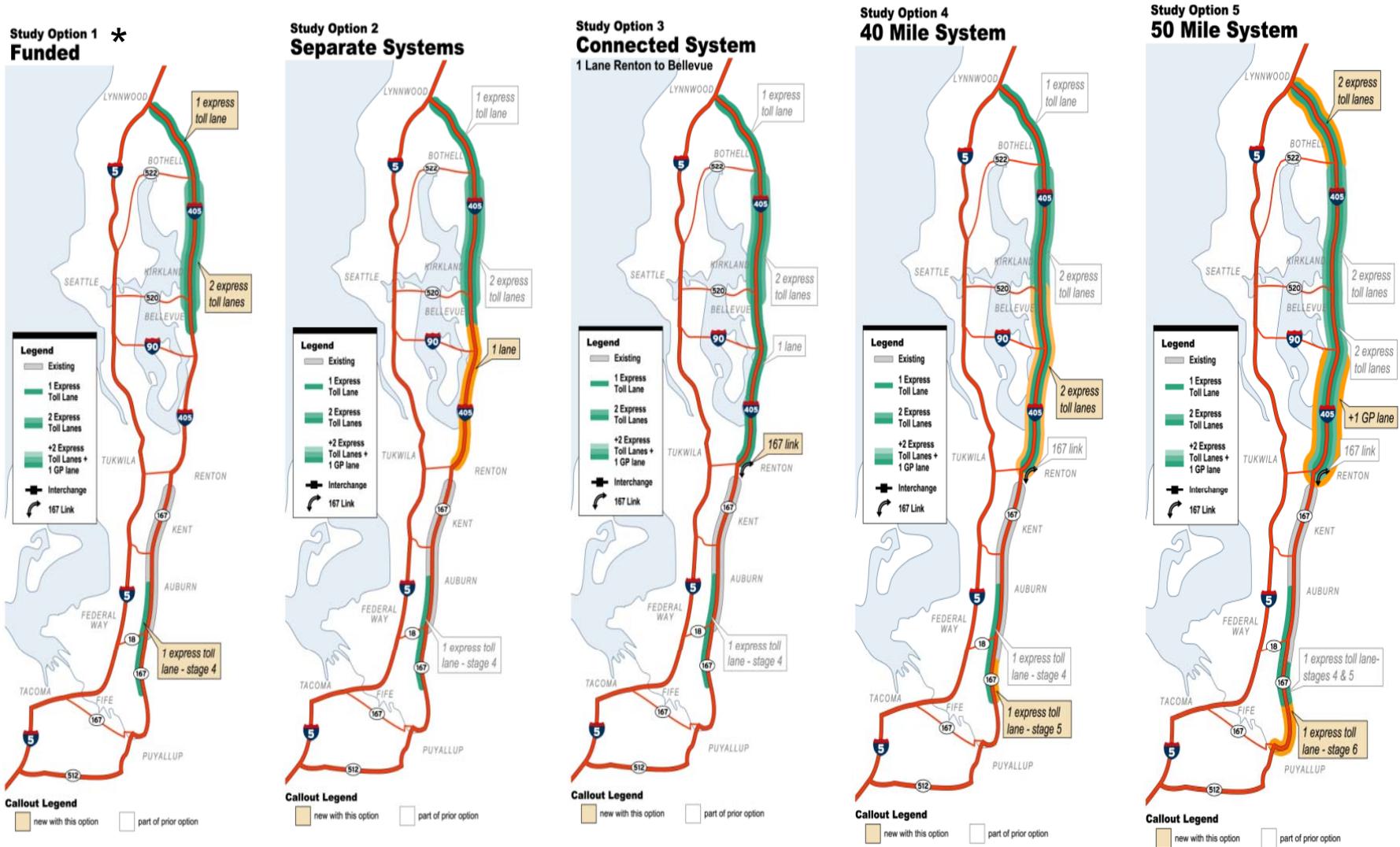
By January 2010, the department must prepare a traffic and revenue study for Interstate 405 in King county and Snohomish county that includes funding for improvements and high occupancy toll lanes, as defined in RCW 47.56.401, for traffic management. The department must develop a plan to operate up to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



# Range of Study Options



\* Financing possible with existing corridor funds



# Transit Coordination

## *Making Transit & HOV Travel Work:*

- Principles for maximizing transit effectiveness, speed & reliability
- Optimal transit access

## Meeting Accomplishments:

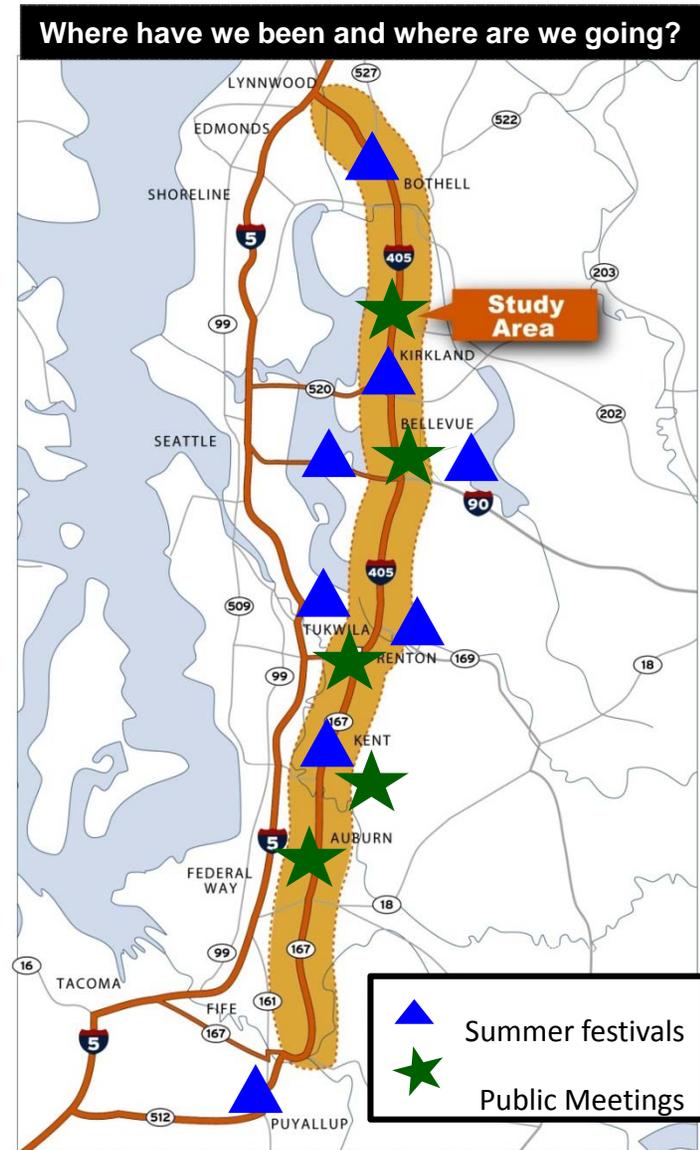
- Affirmed general I-405 Corridor Master Plan vision for an multi-modal corridor with integrated transit
- Identified issues & challenges
- Drafted key principles
- Working to develop incremental steps to achieve vision

## Key principles

- Speed & reliability
- Access for transit
- Transit & HOV priority
- Safety
- Balance multiple users

# Public Outreach

- 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 **3** public meetings, with 2 more coming in November
- Fielded **2,584** online surveys
- Conducted a statistically valid phone survey of **1,000** I-405 or SR 167 users
- Facilitated four corridor focus groups
  - 2 with I-405 users and 2 with SR 167 users (48 total participants)

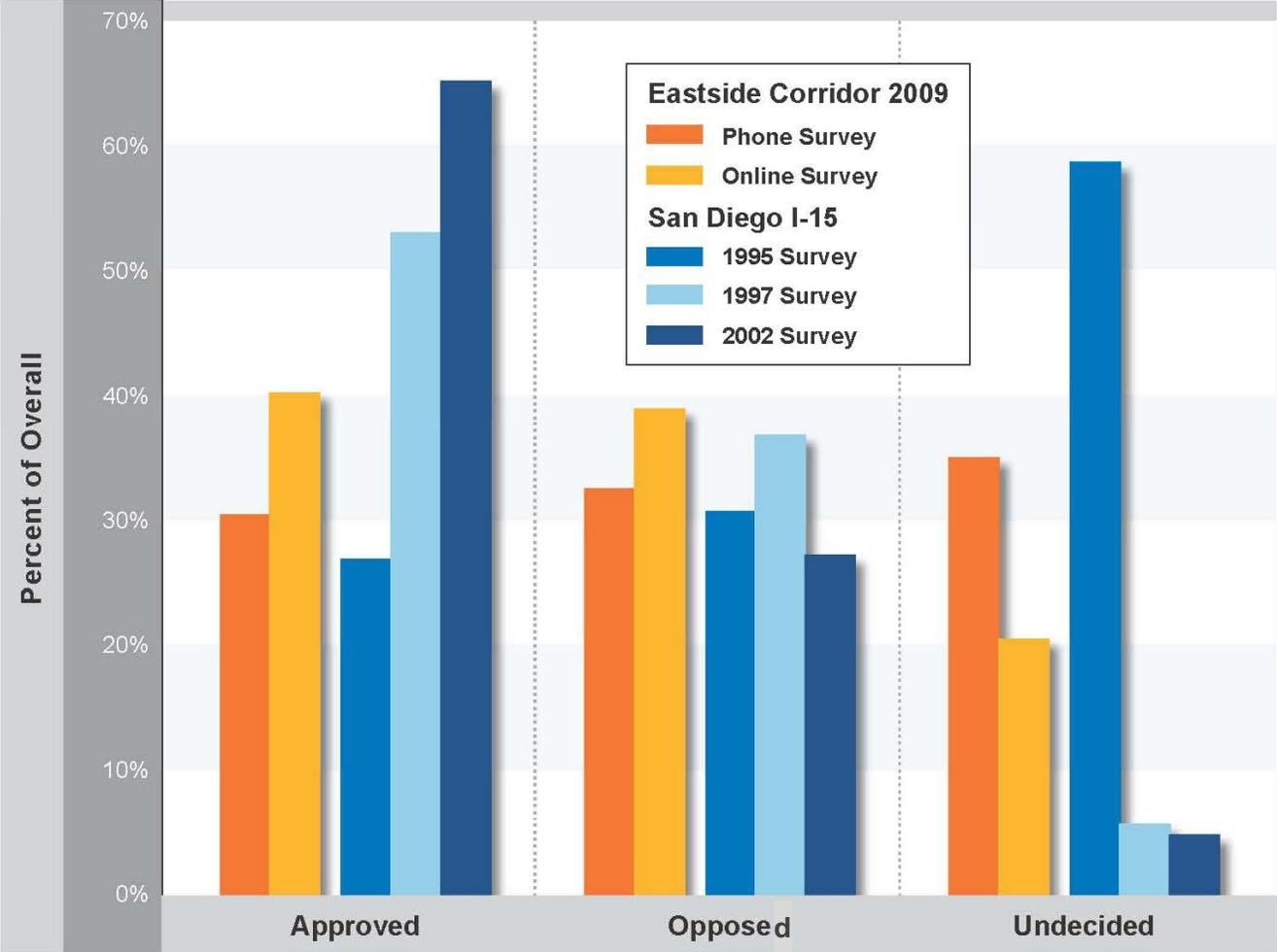


## Key Findings so far...

- **Use = Support.** Focus groups show that those who have used toll lanes, like the SR 167 HOT lanes and support the idea of express toll lanes on I-405.
- **Congestion relief = Willingness to pay.** Our research shows that approximately 52 percent 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.

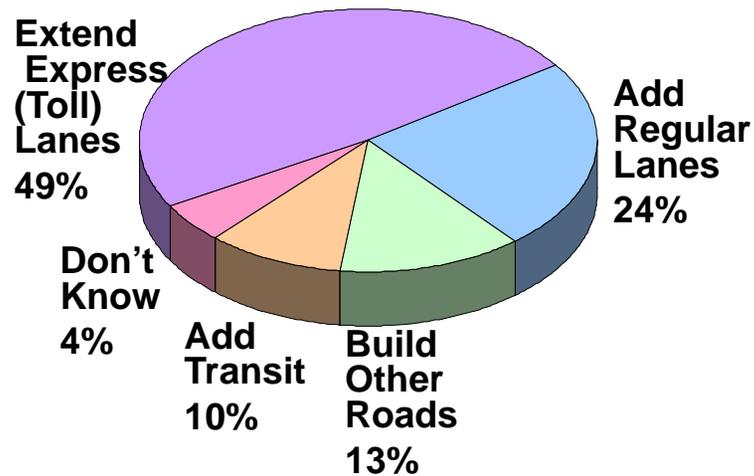
# Public support for tolled lanes increases after implementation

*How our results measure up nationally – highlight on I-15 in San Diego*

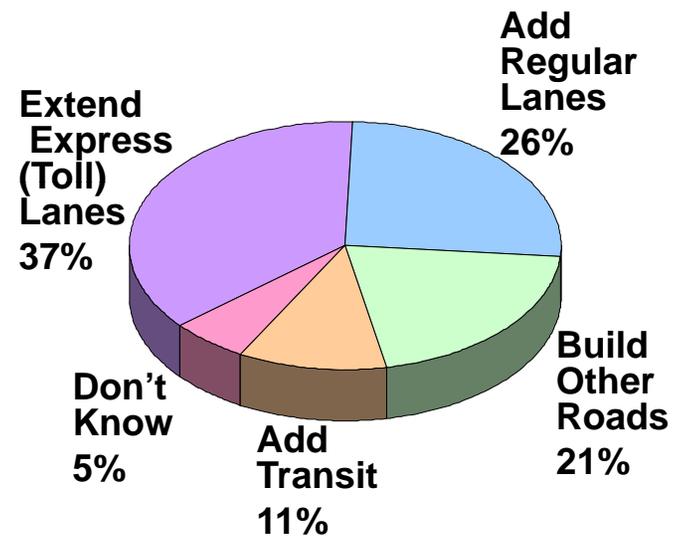


# Highlighting: SANDAG I-15 Express Lanes

Toll Users



Non-Users



***“... the single most effective way to reduce congestion.” - 2003 I-15 Phone Survey***

# SR 167 HOT Lanes Users are Big Supporters

- **Prior to implementation - *mixed opinion***

- ✓ 37.7% a good idea
- ✓ 38.2% will help congestion
- ✓ 39.8% will slow transit & carpools
- ✓ 47.4% won't relieve congestion



*“... Expand HOT lanes to other HOV lanes in the area.”*

- **Post implementation – *SR 167 HOT lane users are big supporters***

- ✓ 72% would pay to use HOT lanes
- ✓ 71% agree they provide a faster trip



# Upcoming Outreach – Please Join Us!



## Express Toll Lanes on I-405 and SR 167?

*Plans underway to operate our highways smarter.*

Ever driven on the express lanes? Or the SR 167 high occupancy toll (HOT) lanes? If so, you may be interested in a possible new transportation option.

WSDOT is considering creating a two-lane express toll lane system, alongside existing toll-free general purpose lanes on I-405. The express toll lanes would connect with SR 167 HOT lanes, creating a 50+ mile “expressway within a highway” from Puyallup to Lynnwood.

Through the use of technology, an Eastside Corridor express toll lane system could give commuters a choice for a reliable, fast trip every day.



### *We'd like your input.*

Join us to share your feedback and discuss the tolling study with project staff. You can come by any time between 4:00 and 7:00 pm. Your input is important and will be included in a report to the Governor and Legislature in January 2010.

#### **Tuesday, November 3 Kent**

Kent Meridian High School  
Cafeteria  
10020 SE 256th St  
Kent, WA 98030

#### **Thursday, November 5 Kirkland**

Kirkland City Hall  
Peter Kirk Room  
123 5th Ave  
Kirkland, WA 98033

**4:00 to 7:00 p.m.**

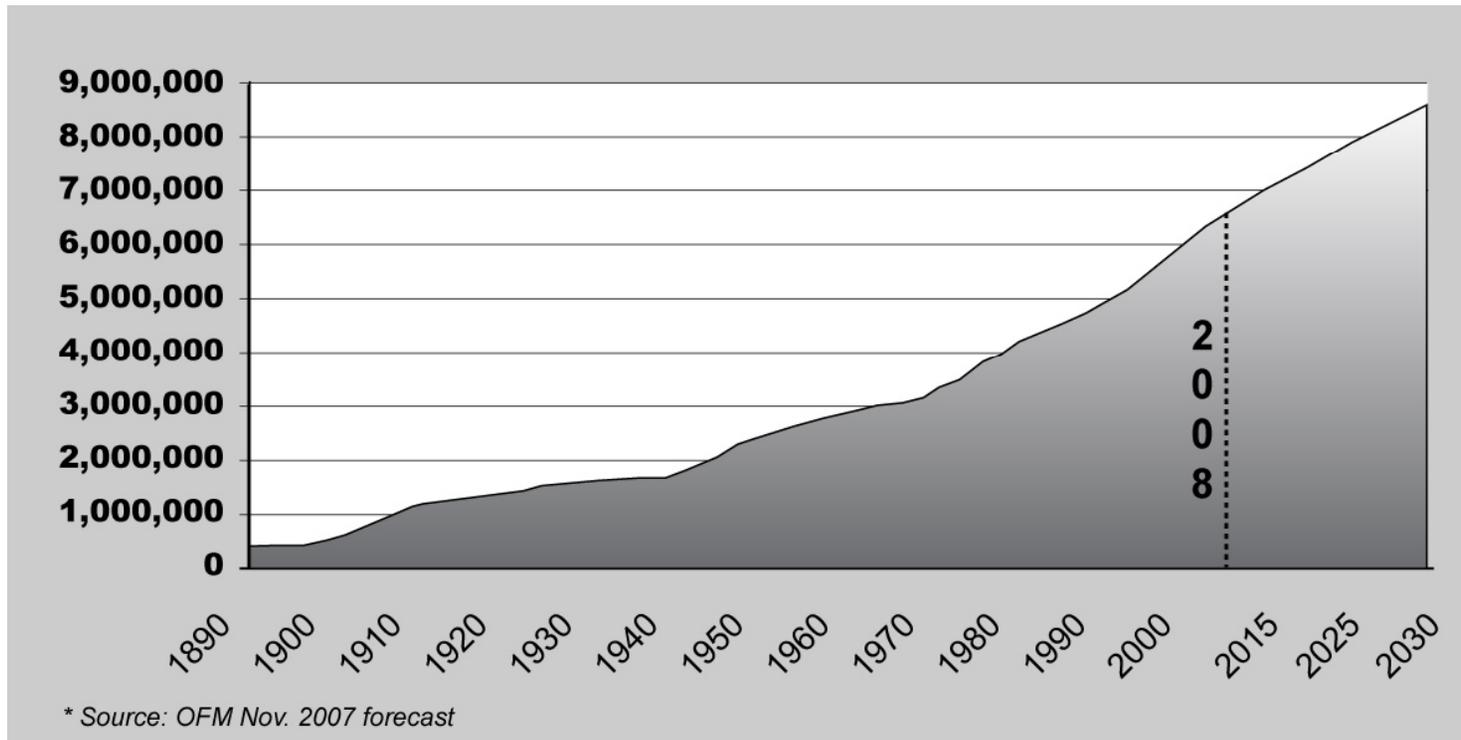
Two express toll lanes could create a “highway within a highway” – so commuters have a choice for a reliable trip along SR 167 and I-405 (the Eastside Corridor).



For more information email [ectollingstudy@wsdot.wa.gov](mailto:ectollingstudy@wsdot.wa.gov) or visit [www.wsdot.wa.gov/tolling/eastsidecorridor](http://www.wsdot.wa.gov/tolling/eastsidecorridor) - Contact: Janet Matkin at 206-716-1150.

# Washington State Population Growth

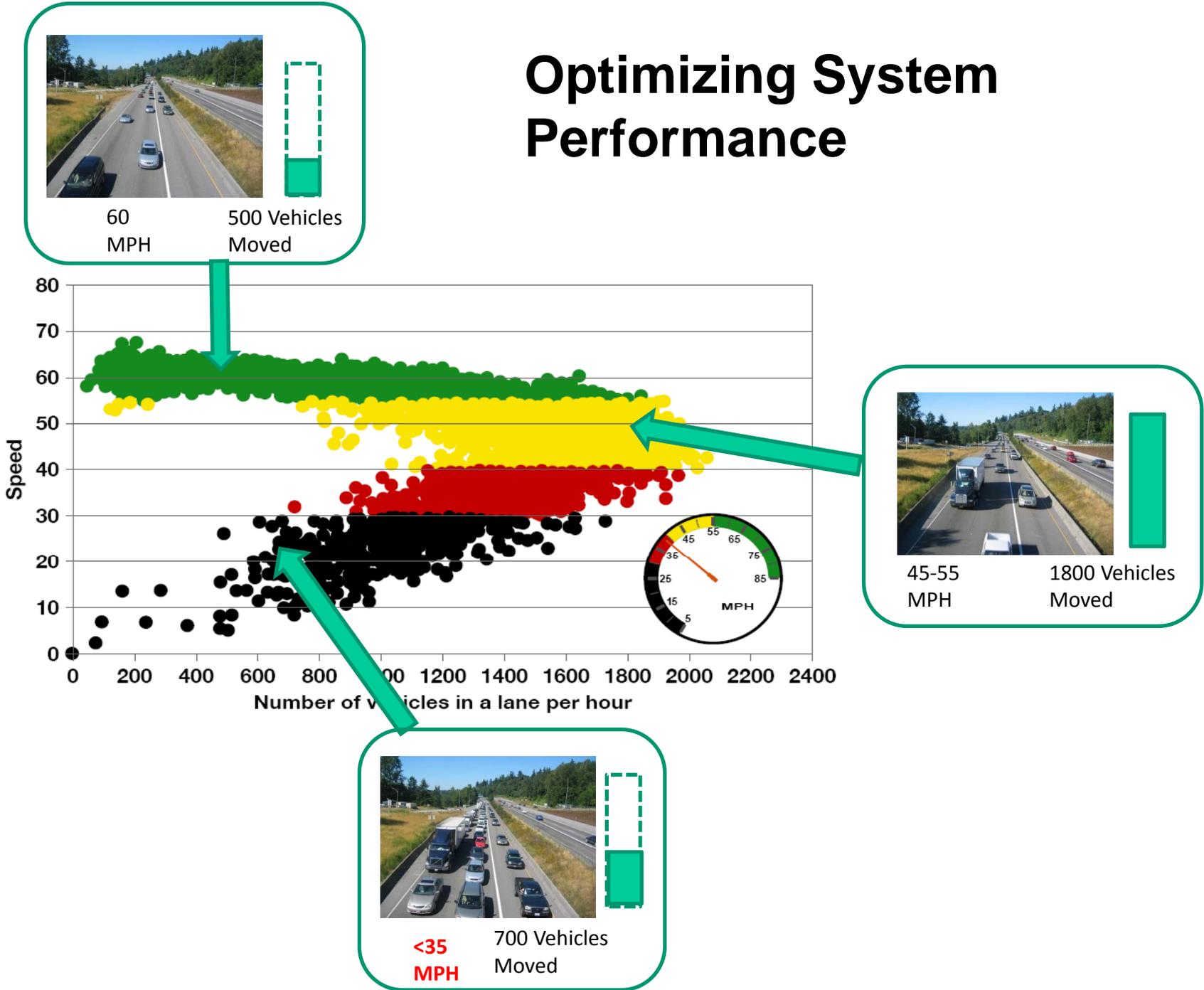
Demand for our highways is increasing rapidly



2 million more people expected by 2030



# Optimizing System Performance



# Our congestion is outgrowing current strategies



*Full HOV lane*



*Ramp meter back-up*



*Empty HOV lane*

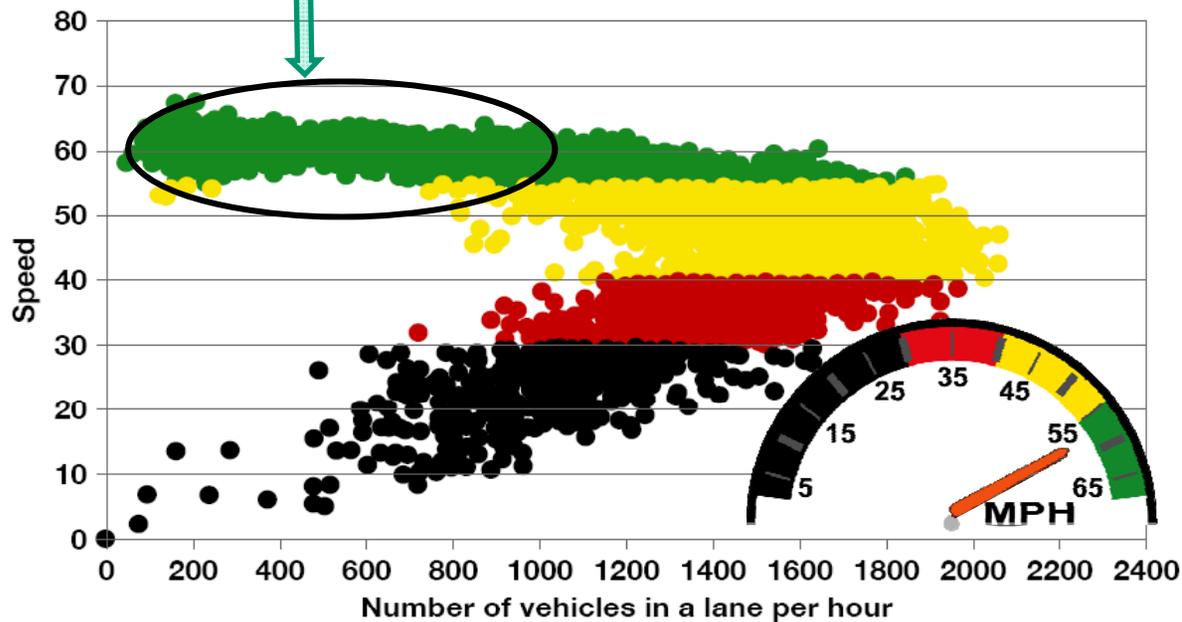


*Empty express lanes*

If the price is too high, the lane will be empty

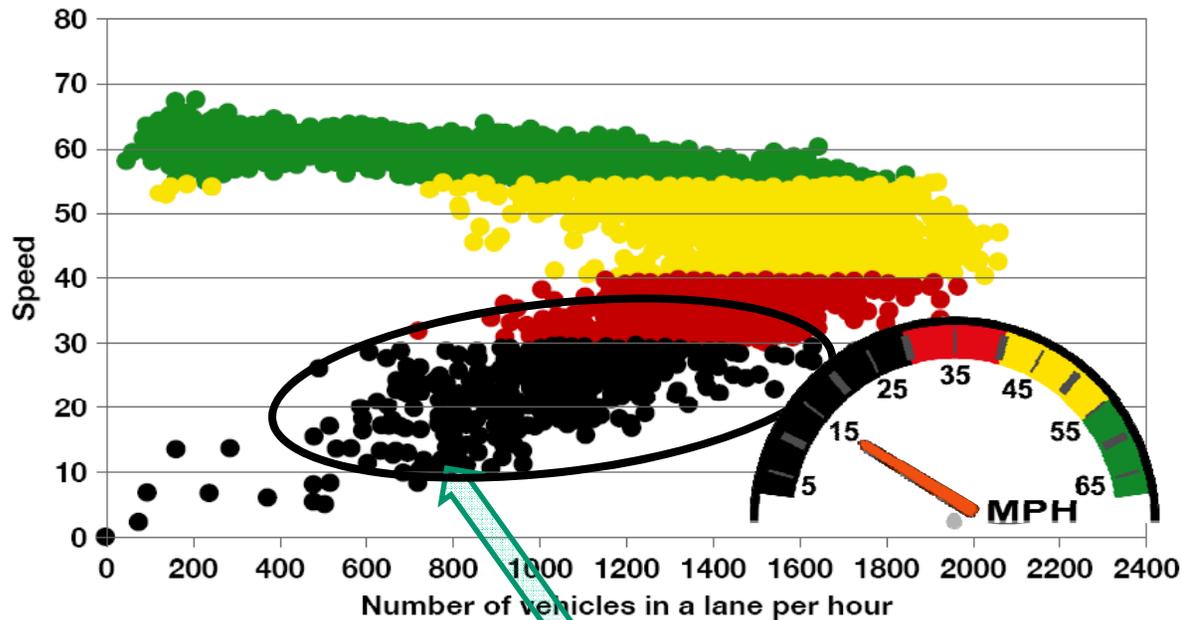
# Dynamic Pricing Solution

*The most effective price to move the most traffic*



# Dynamic Pricing Solution

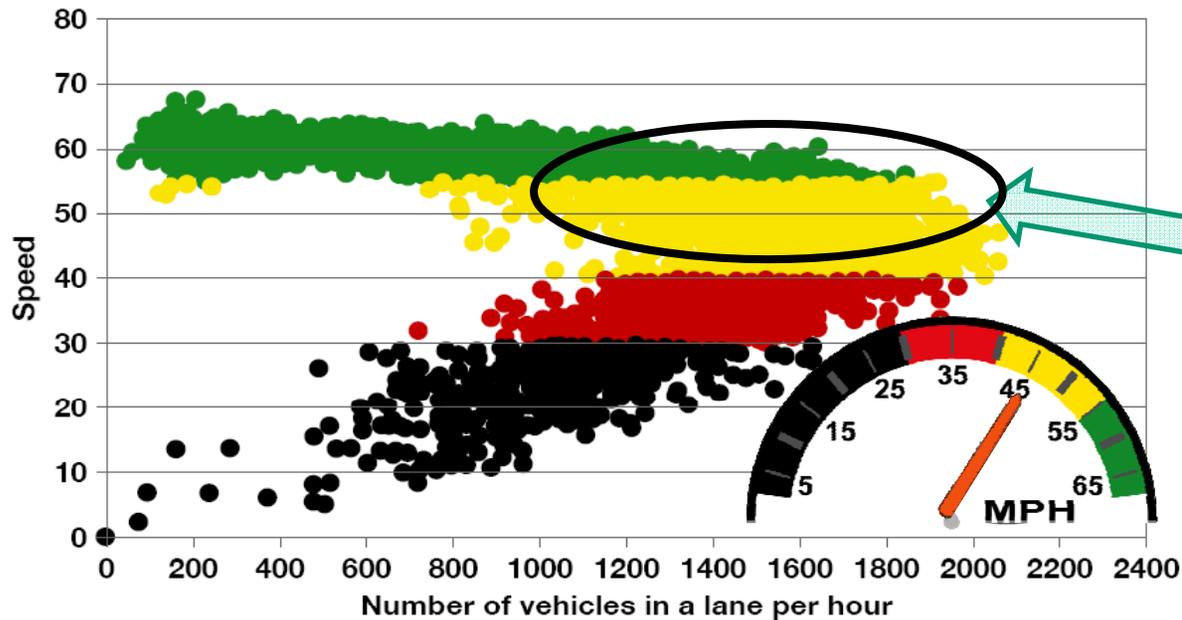
*The most effective price to move the most traffic*



If the price is too low, the lane will be congested and slow moving

# Dynamic Pricing Solution

*The most effective price to move the most traffic*

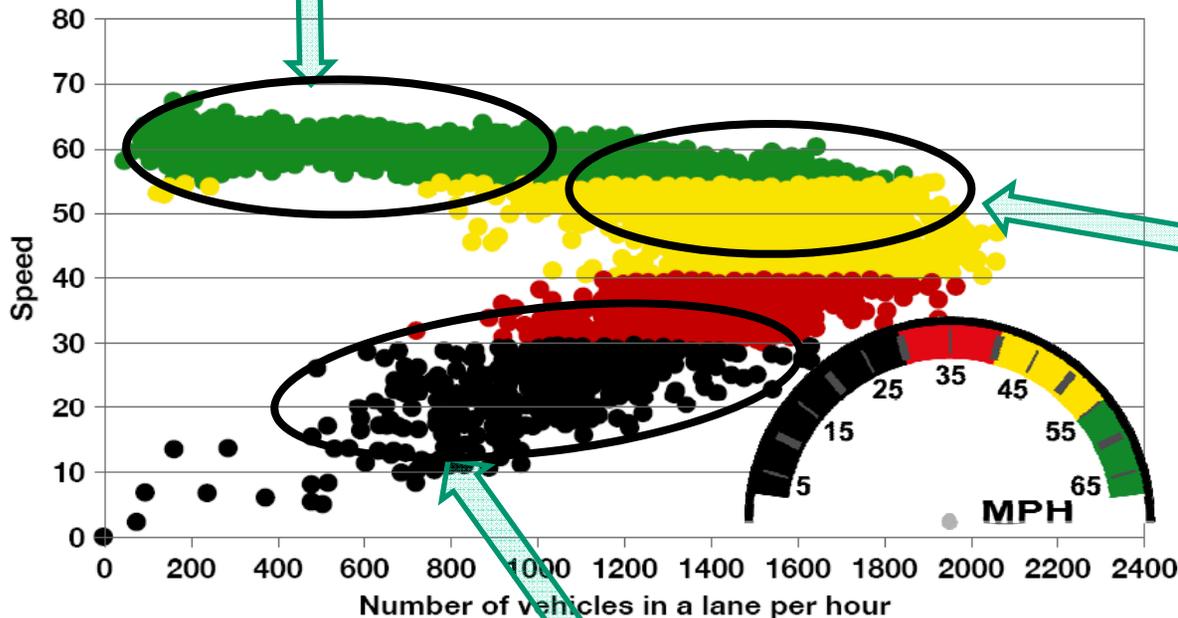


Allow the users to determine the price to keep consistent speeds

# Dynamic Pricing Solution

*The most effective price to move the most traffic*

If the price is too high, the lane will be empty



Allow the users to determine the price to keep consistent speeds

If the price is too low, the lane will be congested and slow moving

**Break**

# Traffic Methodology & Preliminary Results

**Ed Regan**

Wilbur Smith Associates

**Karl Westby**

Eastside Corridor Project Team

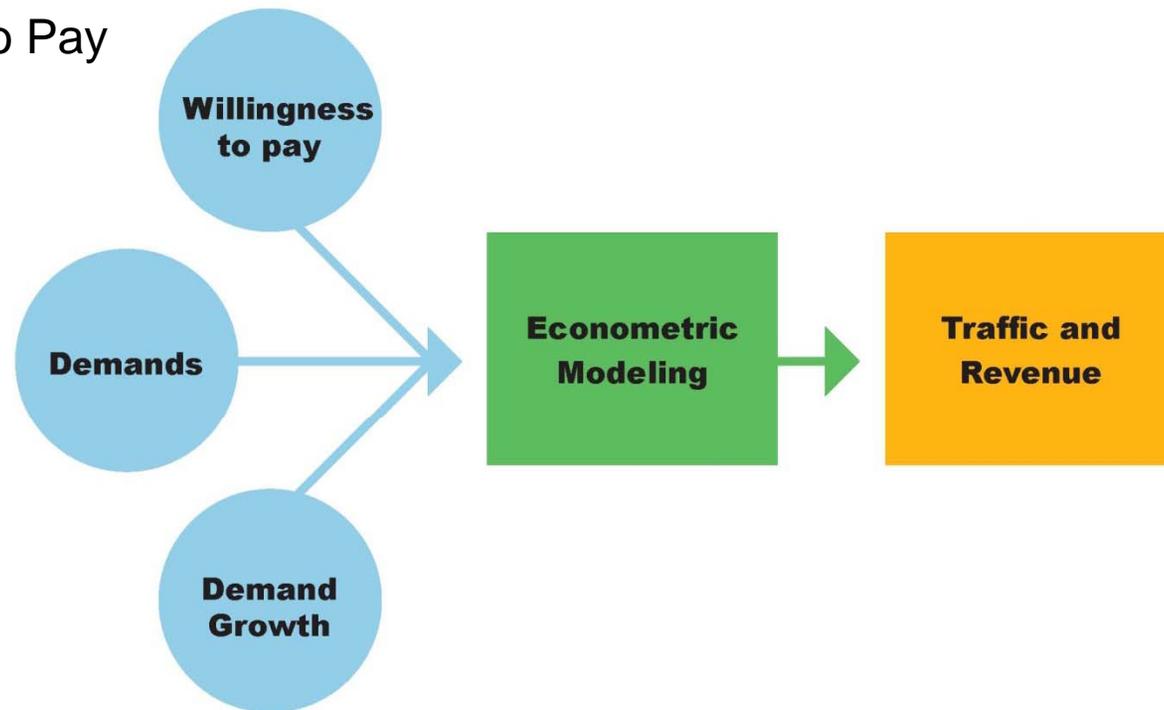


# Traffic and Gross Revenue Analysis

Planning Level Study

Two Major Factors Driving Analysis Results

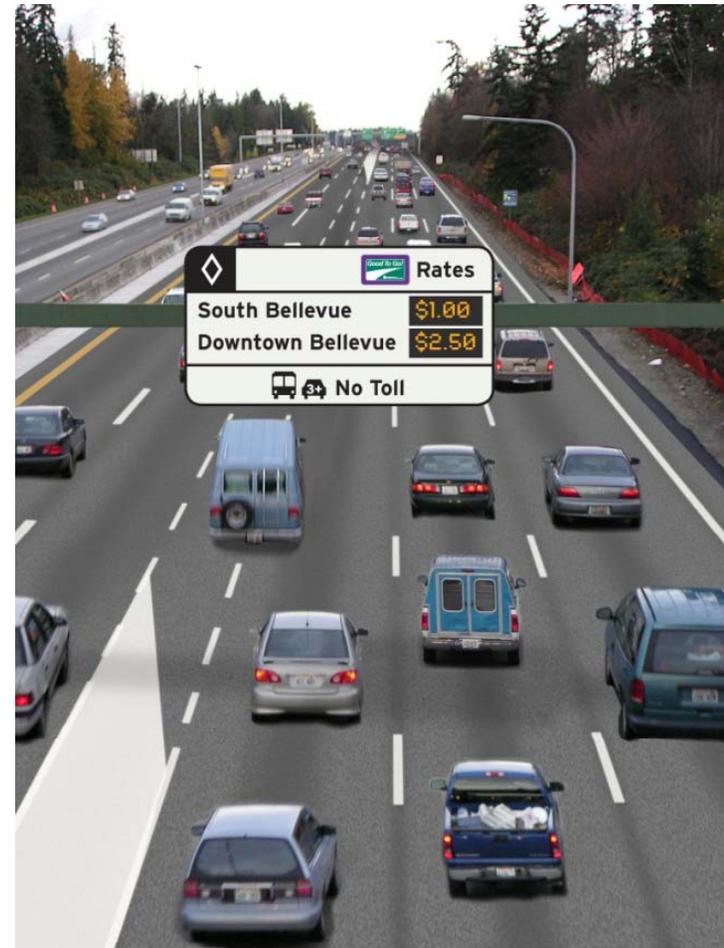
- Population and Employment Forecasts
- Willingness to Pay



# Traffic and Gross Revenue Analysis

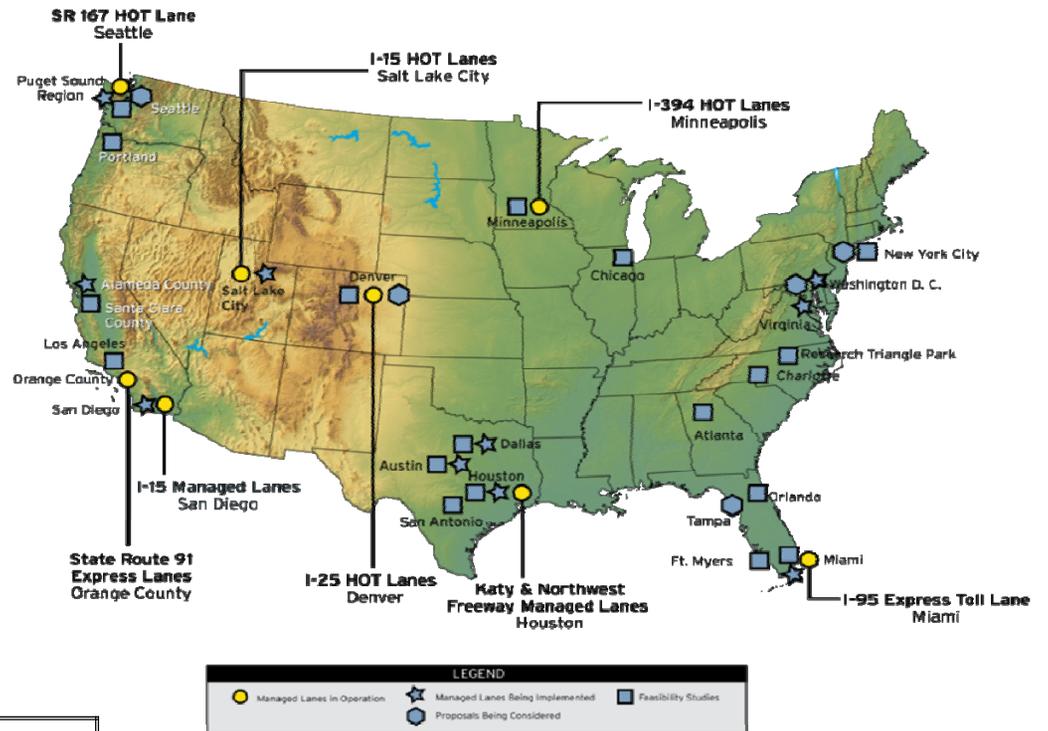
## - Dynamic Pricing

- Overriding Criteria
  - Rates set to optimize throughput so that lanes are free flowing (45 mph or faster)
- Secondary Objective
  - Rates set to generate revenue



# National Experience

- Dynamic Pricing Concept
  - Well documented that it works
  - Most programs are expanding their HOT lanes or express toll lanes to the next phase
  - I-95 in Florida after 6 months in operation are seeing speeds doubled in the GP lanes from 1 year ago



<b>2008</b>	18 mph HOV	19 mph GP
<b>2009</b>	57 mph EL	40 mph GP

# 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.

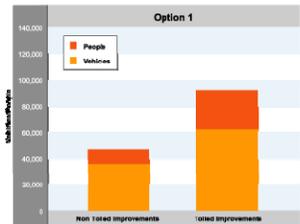
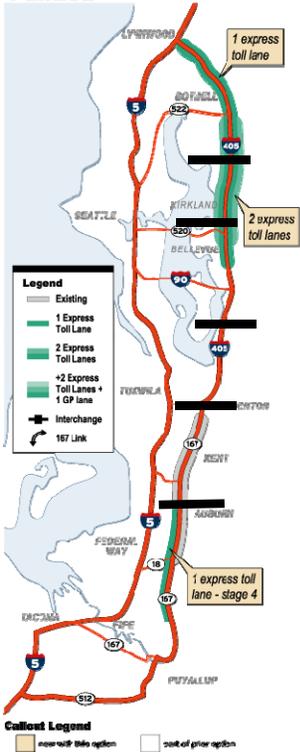


*Sections of the corridor we studied*

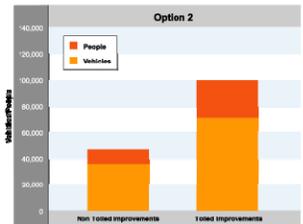
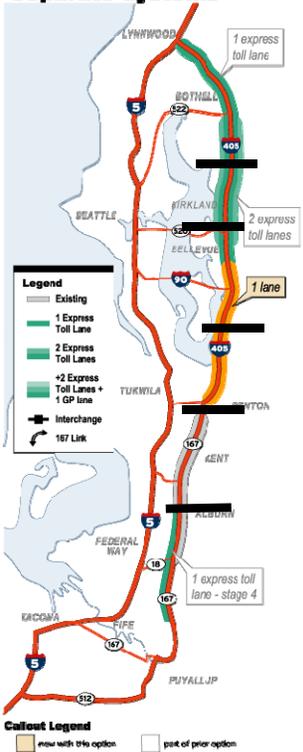
# Study Options - Traffic Performance

## People and Vehicles Moved

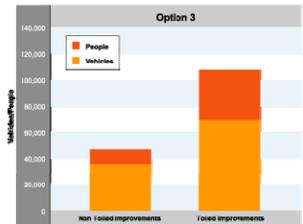
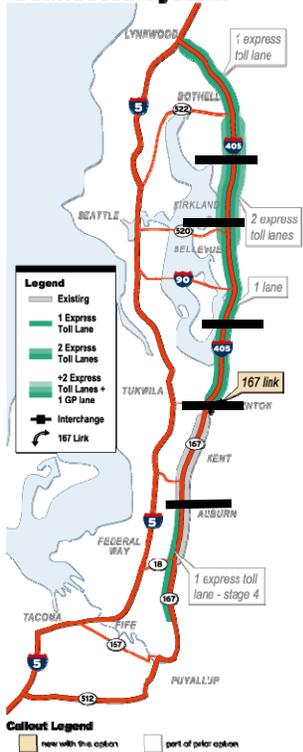
**Study Option 1 \* Funded**



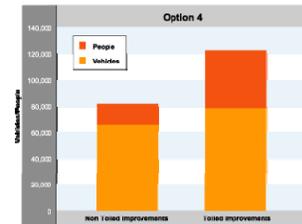
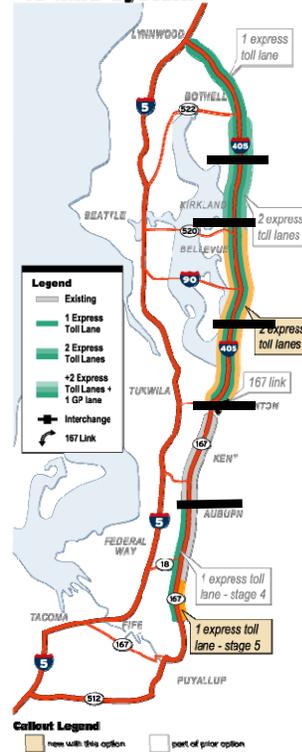
**Study Option 2 Separate Systems**



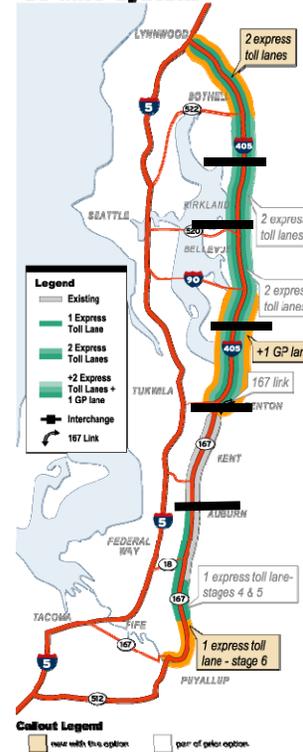
**Study Option 3 Connected System**



**Study Option 4 40 Mile System**



**Study Option 5 50 Mile System**



**Vehicles moving at 45 MPH or faster**

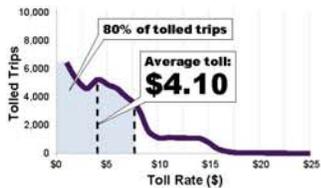
No Toll Improvement
  Tolled Improvement

\* Financing possible with existing corridor funds

# Study Options – Traffic Performance

## How much are people paying?

**Study Option 1 \*  
Funded**



**2020 Weekday Peak Period Toll Rates (2008 Dollars)**

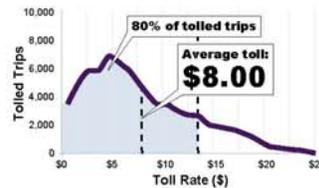
**Study Option 2  
Separate Systems**



**Study Option 3  
Connected System**



**Study Option 4  
40 Mile System**



**Study Option 5  
50 Mile System**



\* Financing possible with existing corridor funds

# How much might the average person pay?

	Avg. Trip Length	2008 Study	2009 Study
Study Option 1	7.5 miles	\$2.60	\$4.10
Study Option 2	8 miles	\$2.50 *	\$4.10
Study Option 3	10 miles	\$3.00 *	\$4.80
Study Option 4	12 miles	\$5.00 *	\$8.00

**All rates shown in 2008 dollars**

\*Extrapolated based on prior studies

# Revenue Methodology & Preliminary Results

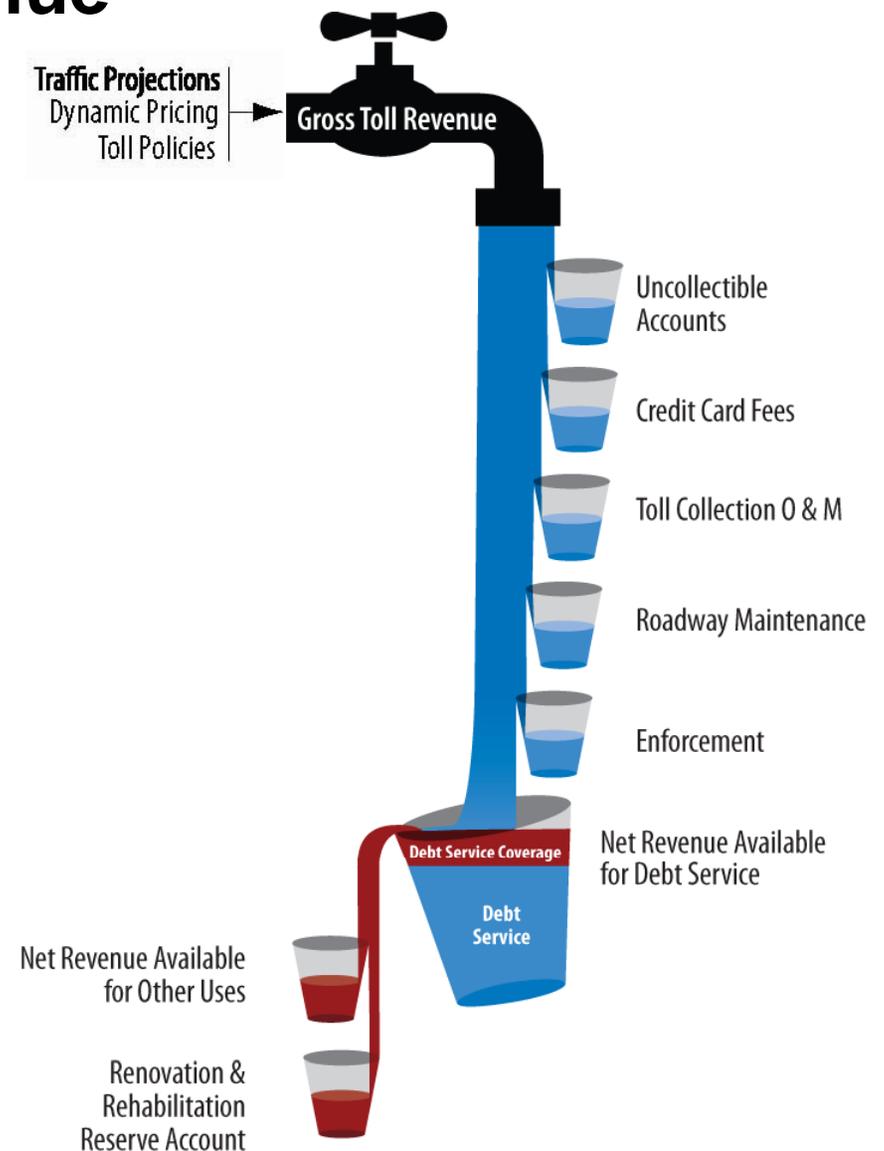
**Scott Ladner**  
Parsons Brinkerhoff

**Kim Henry**  
Eastside Corridor Project Director



# Determination of Net Revenue

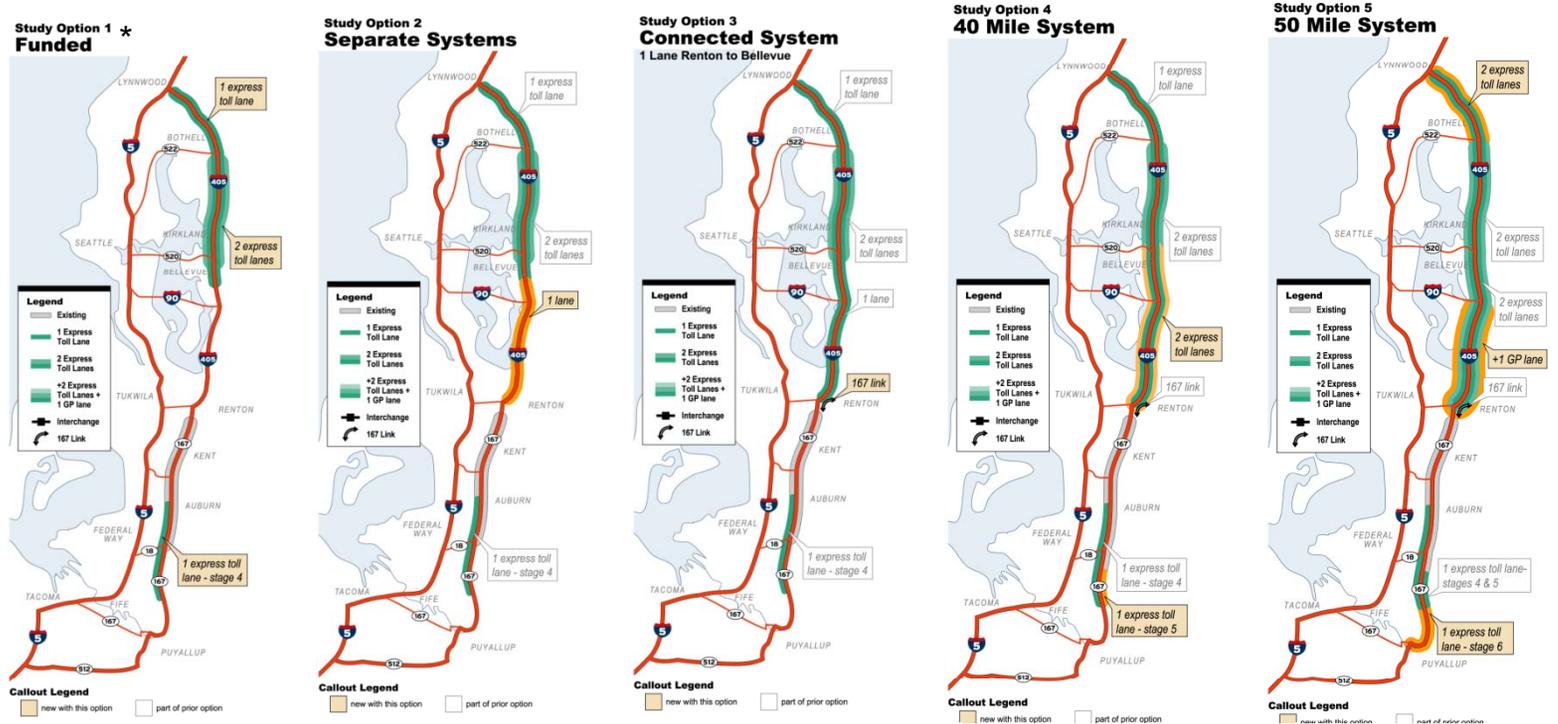
- Gross revenue comes from traffic and toll rate assumptions by Wilbur Smith Associates
- Net revenue is gross revenue less costs of operations and maintenance (O&M)
- O&M costs include:
  - Maintaining roadway and toll collection system
  - Operating customer service center and back office
  - Enforcement provided by Washington State Patrol
- Net revenue = cash flow available for repaying bonds (debt service)
- Periodic rehabilitation of facility will be paid after debt service



# Determination of Toll Funding Contribution

- Net toll revenues and project cash flow needs are modeled to estimate the toll contribution to project costs
- Assumes 30-year non-recourse bonds (only toll revenues are pledged to repayment)
- Financing assumptions reflect the market for toll-backed debt and direction from the Office of the State Treasurer
  - Dynamically priced HOT lanes considered riskier investment than toll roads or bridges
  - 2.0x Debt Service Coverage Ratio
  - ~ 9% interest rate

# Range of Study Options



	Option 1	Option 2	Option 3	Option 4	Option 5
Capital Cost	\$470M	\$540M	\$1030M	\$1950M	\$4100M
Funds Needed	\$67M	\$140M	\$630M	\$1545M	\$3685
Range of Net Bond Proceeds:	\$135–240 M	\$160–290 M	\$190–345 M	\$450–775 M	Available in November
Available Funds/ Funds Needed	\$173M	\$150M	(\$285M)	(\$770M)	Available in November

\* Financing possible with existing corridor funds

# Key Findings to Date

- National and local experience shows that public support increases after implementation. Toll lane users support a free-flowing (45 mph or faster) traffic option.
- Toll lanes relieve congestion better than non tolled lanes. When an express toll lane choice is implemented, speeds improve in all lanes.
- Toll rates are driven by supply and demand.
- Projections show great revenue generating potential across all options.
- Study options 1 and 2 could be self-financed, generating more revenue than needed.

# **Draft Funding & Phasing Principles**

**Denise Cieri**

Eastside Corridor Deputy Project Director



## Draft Principles

- Create a phasing plan which arrives at a seamless corridor
- Proposed system needs to fit within regional toll lane context
- Need policy to address 2+, 3+
- Revenue generated from tolling should stay in the corridor
- Continue working on interim solution towards master plan BRT vision

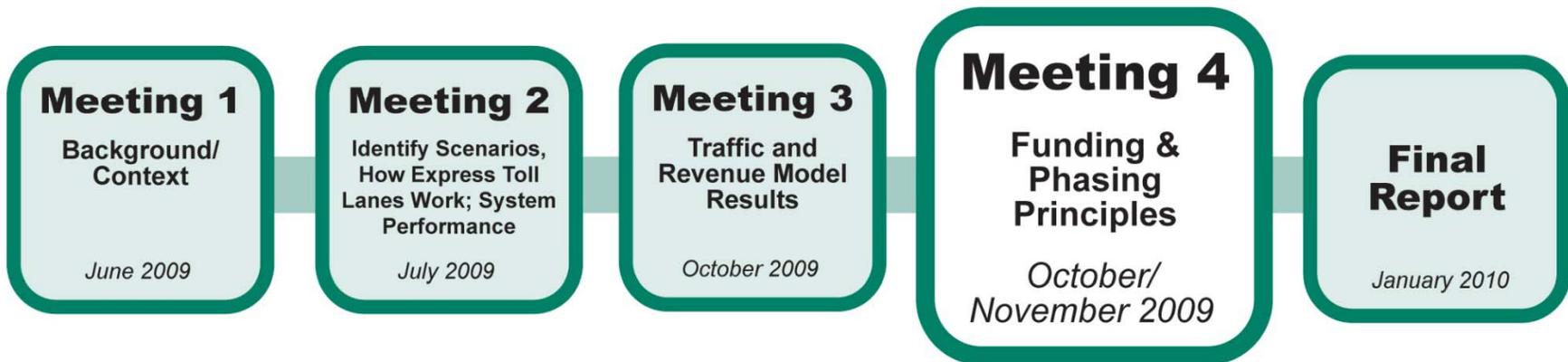
# Wrap-up/Next Steps

**Craig Stone**

Director of WSDOT Toll Division



# Next Steps: Meeting 4



1. Review results for Study Option 5
2. Discuss 2+ and 3+ model
3. Review and finalize study principles
4. Detailed report on public outreach

# 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](http://www.wsdot.wa.gov/tolling/eastsidecorridor)

