Eastside Corridor
Tolling Study

Executive Advisory Group
October 29, 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?
Draft Principles

- 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
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

$470 M  $540 M  $1,030 M  $1,950 M  $4,100 M
Transit Coordination

Making Transit & HOV Travel Work:

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

Meeting Accomplishments:

- Agreed with the I-405 Master Plan vision to include enhanced transit facilities and service.
- Identified issues & challenges
- Drafted key principles
- Continue program of improvements to make transit work in the corridor

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
Highlighting: SANDAG I-15 Express Lanes

“… the single most effective way to reduce congestion.” - 2003 I-15 Phone Survey
SR 167 HOT Lanes Users are Big Supporters

Public support for tolled lanes increases after implementation

“Allowing single drivers to use the carpool (HOV) lanes by paying a toll is a good idea.”
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 2016.

Tuesday, November 3
Kent
Kent Meridian High School Cafeteria
1020 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.

For more information email ectollingstudy@wsdot.wa.gov or visit 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

*Source: OFM Nov. 2007 forecast

Seven in ten people in Washington State live within 15 miles of Interstate 5.
Optimizing System Performance

- 60 MPH: 500 Vehicles Moved
- 45-55 MPH: 1800 Vehicles Moved
- <35 MPH: 700 Vehicles Moved

Number of vehicles in a lane per hour vs. Speed

- Green: 60 MPH
- Red: 45-55 MPH
- Yellow: <35 MPH

700 Vehicles Moved

1800 Vehicles Moved
Our congestion is outgrowing current strategies

- Full HOV lane
- Empty HOV lane
- Ramp meter back-up
- Empty express lanes
Dynamic Pricing Solution

The most effective price to move the most traffic

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

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

Allow the users to determine the price to keep consistent speeds.
Break
Traffic Methodology & Preliminary Results

Ed Regan
Wilbur Smith Associates

Karl Westby
Eastside Corridor Project Team
Traffic and Gross Revenue Analysis

Planning Level Study

Three Major Factors Driving Analysis Results

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

Diagram:
- Population/Employment Forecast
- Existing Traffic Volumes
- Willingness to Pay
- Econometric Modeling
- Traffic and Revenue
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

<table>
<thead>
<tr>
<th>Year</th>
<th>HOV Speed</th>
<th>GP Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>18 mph</td>
<td>19 mph</td>
</tr>
<tr>
<td>2009</td>
<td>57 mph</td>
<td>40 mph</td>
</tr>
</tbody>
</table>
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 less and toll rates would be higher.
Comparison of Study Options – Year 2020 Traffic Performance (preliminary results)
Comparison of Study Options – Average Toll Rates (preliminary results)

2020 Weekday Peak Period Toll Rates (2008 Dollars)

- Study Option 1: Average toll: $4.10
- Study Option 2: Average toll: $4.10
- Study Option 3: Average toll: $4.80
- Study Option 4: Average toll: $8.00

Legend:
- 1 Express Toll Lane – Highway
- 2 Express Toll Lanes – Highway
- 3 Express Toll Lanes – Highway
- 4+ Express Toll Lanes – Highway
- Local
- Frontage Road
- 10 Freeway

*Funding possible from savings within the corridor
How much might the average person pay in 2020?

<table>
<thead>
<tr>
<th>Study Option</th>
<th>Avg. Tolled Trip Length</th>
<th>2008 Study</th>
<th>2009 Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Option 1</td>
<td>7.5 miles</td>
<td>$2.80</td>
<td>$4.10</td>
</tr>
<tr>
<td>Study Option 2</td>
<td>8 miles</td>
<td>$2.80 *</td>
<td>$4.10</td>
</tr>
<tr>
<td>Study Option 3</td>
<td>10 miles</td>
<td>$3.30 *</td>
<td>$4.80</td>
</tr>
<tr>
<td>Study Option 4</td>
<td>12 miles</td>
<td>$5.40 *</td>
<td>$8.00</td>
</tr>
</tbody>
</table>

* Extrapolated based on prior studies

All rates shown in 2008 dollars
Funding Methodology & Preliminary Results

Brent Baker
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
Comparison of Study Options - Available and Needed Funding (preliminary results)

<table>
<thead>
<tr>
<th>Study Option</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Option 1</td>
<td>$470 M</td>
</tr>
<tr>
<td>Study Option 2</td>
<td>$540 M</td>
</tr>
<tr>
<td>Study Option 3</td>
<td>$1,030 M</td>
</tr>
<tr>
<td>Study Option 4</td>
<td>$1,950 M</td>
</tr>
<tr>
<td>Study Option 5</td>
<td>$4,100 M</td>
</tr>
</tbody>
</table>

- Capital cost
- Available funding
- Funds needed

*Funding possible from savings within the corridor

<table>
<thead>
<tr>
<th>Bonding</th>
<th>Study Option 1</th>
<th>Study Option 2</th>
<th>Study Option 3</th>
<th>Study Option 4</th>
<th>Study Option 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of net bond proceeds</td>
<td>$135-245 M</td>
<td>$160-290 M</td>
<td>$190-345 M</td>
<td>$450-775 M</td>
<td>Available in December</td>
</tr>
<tr>
<td>% of funding gap filled</td>
<td>100%+</td>
<td>100%+</td>
<td>30-55%</td>
<td>30-50%</td>
<td></td>
</tr>
<tr>
<td>Remaining funding gap</td>
<td>$0</td>
<td>$0</td>
<td>($285-440 M)</td>
<td>($770-1,095 M)</td>
<td>Available in December</td>
</tr>
</tbody>
</table>
Draft Funding & Phasing Principles

Denise Cieri
Eastside Corridor Deputy Project Director
Key Findings to Date

- The current HOV system is not working.

- Toll lanes relieve congestion better than non tolled lanes. When an express toll lane choice is implemented, speeds improve in all lanes.

- Increased throughput on Eastside Corridor reduces diversion onto local city streets.

- Toll rates are driven by supply and demand.

- Traditional revenue sources need to be supplemented to implement I-405 Master Plan.

- Projections show great revenue generating potential across all options.

- National and local experience shows that public support increases after implementation. Toll lane users support a free-flowing traffic option.
Draft Principles

- Need policy to address 2+, 3+ HOV
- Fix the worst first
- Traffic operations / congestion relief is first priority
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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