I-405/SR 167 Corridor Program Update

January 24, 2013
Bellevue City Hall
Agenda

• Introductions/Welcome
• Charge
• Project Background
• Express Toll Lanes Overview
• Review of Phasing Strategies
• Review of Funding Strategies
• Toll Policy Issues for Discussion
• Wrap up and Next Steps
Welcome Back

Paula Hammond
Secretary of Transportation
Our Charge

• 2011 – EHB 1382

“The department, in consultation with the transportation commission, shall develop a corridor-wide project management plan to develop a strategy for phasing the completion of improvements in the Interstate 405 and SR 167 corridor.

“The department, in consultation with the transportation commission, shall use the information from the traffic and revenue analysis and the corridor-wide project management plan to develop a finance plan to fund improvements in the I-405 and SR 167 corridor. The department must include the following elements in the finance plan:

a) Current state and federal funding contributions for projects in the I-405 and SR 167 corridor;

b) A potential future state and federal funding contribution to leverage toll revenues;

c) Financing mechanisms to optimize the revenue available for capacity improvements including, but not limited to, using the full faith and credit of the state;

d) An express toll lane system operating in the I-405 and SR 167 corridor.

“The department and the transportation commission must consult with a committee consisting of local and state elected officials from the I-405 and SR 167 corridor and representatives from the transit agencies that operate in the I-405 and SR 167 corridor while developing the performance standards, traffic and revenue analysis, and finance plan.”
Key Study Elements

- **Phasing:** What is the timing/schedule to complete the 40-mile system?
  - Do we open Renton to Bellevue and I-405/SR 167 Direct Connector as one system/at the same time?

- **Phasing:** Are there other projects, as identified in the I-405 Master Plan that need to be advanced?

- **Funding:** What are the strategies for financing capital improvements for the 40-mile system?

  **Legislative study requirements:**
  - Current state and federal funding contributions for I-405 and SR 167 corridor projects;
  - A potential future state or federal funding contribution to supplement toll funding; and
  - A toll funding contribution by borrowing against future toll revenues, optimizing the toll funding “available for capacity improvements including, but not limited to, using the full faith and credit of the state.”

- **Funding:** Do we have a 2+ to 3+ carpool transition plan?

  **Carpool policy:** How does changing the carpool definition affect the following:
  - Financing
  - Performance
  - Public acceptance
  - Federal requirements (MAP 21)
  - Timing
Project Background

Kim Henry, P.E.
I-405/SR 167 Program Director
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 managed lanes system
- 5000 new Park & Ride spaces
- 1700 new vanpools

Environmental Enhancements
I-405 Managed Lanes Study History

**1999**
- I-405 EIS Notice of Intent

**2001**
- I-405 Managed Lanes Analysis

**2002**
- EIS ROD Master Plan

**2003**
- Managed Lanes Technical Analysis

**2006**
- Express Toll Lane Investment Analysis

**2009**
- ESSB 5352 Eastside Corridor Tolling Study

**2010**
- Expert Review Panel Study

**2011**
- EHB 1382 Authorizes Tolling on I-405 and WSTC Study

**2012**
- WSTC Study Complete Sept. 24

**2013**
- WSDOT Funding and Phasing Plan due June 2013
WSDOT 2009 Performance – express toll vs. general purpose lanes

How Do I Read This?
The graphs below note the percentage traffic performance is improved when completed projects are tolled rather than not tolled. We found that based on traffic demand conditions in 2020:

- Traffic performance improves with each study option as the express toll lane system grows in length and functionality.
- Building tolled improvements is more successful in improving traffic performance for each study option compared to building non-tolled improvements.

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

Freeflow = 45 - 60 mph
40-mile system

Phase 1
• Bellevue to Lynnwood Widening and Express Toll Lanes – under construction, open mid to late 2015

• SR 167 Stage 4 – PE/RW/Construction funded, open 2017

Phase 2
• Renton to Bellevue Widening and Express Toll Lanes – $890 m
  • $65 m PE/ROW unfunded, $825 CN unfunded

• I-405/SR 167 Direct Connector – $325 m
  • $40 m PE/ROW funded, $285 CN unfunded

• SR 167 Stage 5
  • $32 m PE/ROW/CN unfunded
NE 6th Street to I-5 Widening and Express Toll Lanes Project

Project Description
• Adds capacity between NE 6th Street in Bellevue and SR 522 in Bothell
• Builds noise walls
• Constructs northbound braided ramps at NE 160th Street
• Two lane express toll lane system from NE 6th Street in Bellevue to SR 522
• One lane express toll lane system from SR 522 to I-5 in Lynnwood

Awarded to Flatiron Constructors, Inc. for $155 million

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2009 EAG Guiding 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 to free flow conditions, a minimum of 45 mph.
   a. 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
7. Retain tolling revenue in the Eastside Corridor.
8. Secure financing with fair terms, similar to other corridors. Leverage traditional resources.
9. Exempt transit and carpools from tolls.
10. Continue to monitor national and regional trends to better understand how to fund toll projects.
11. Leverage toll revenue with other funds.

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

Public Outreach
15. Grow awareness, experience and support by engaging the public, local agencies and elected officials.
16. Make tolling operations mainstream and improve access.
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2010 Expert Review Panel Recommendations

1. Move forward with funded Phase 1 project.
2. **Address regional policy for HOV degradation and migration to ETL.**
3. Seek FHWA tolling approval for corridor.
5. Continue developing the components comprising a mega project. Maintain momentum with the legacy Project Team.
6. Leverage completed environmental documents by augmenting existing EAs to reflect managed lane/toll scenarios.
7. **Address operating policies and design elements that support financing requirements.**
8. Make the I-405/SR 167 interchange a higher priority by mobilizing critical path items like ROW and value engineering.
9. **Address the funding gap through financing, user fees and delivery options as part of the financing and phasing plan.**
10. Complete an investment grade traffic and revenue study.
Regional support for express toll lanes
Legislative Direction

- **2011 – EHB 1382 – authorized tolling on I-405**
  - 1. Construction of capacity improvements, including items that enable implementation of ETLs, such as conduit and other underground features, must begin as soon as practicable.
  - 2. WSTC to hire independent expert to conduct traffic and revenue analysis for 40-milie ETL system.
  - 3. With WSTC, WSDOT will **develop corridor-wide project management plan** for phasing and use information from traffic and revenue study to **develop a finance plan to fund further I-405 and SR 167 improvements**.
  - 4. Consult with a committee of local and state I-405/SR 167 corridor elected officials and transit agencies during development of studies/plans.
  - 5. Any tolling equipment contract terms may not take effect until 2012 appropriation authority.
  - 6. Conduct ongoing education and outreach.
  - 7. Submit both the traffic and revenue, and phasing and financing plans to the Governor and Legislature by January 2012.

- **2012 – EHB 2190**
  - The department shall place amounts for tolling equipment into unallocated status until the traffic and revenue analysis required in [1382] is submitted to the Governor and Legislature. Once the report [T&R analysis] has been submitted, the office of financial management may approve the allotment of funds for tolling equipment only after consultation with the joint transportation committee.
Express Toll Lanes Overview

Patty Rubstello, P.E.
Director of Policy and Systems Development
Toll Division
Express Toll Lanes proving to be nationwide strategy to manage congestion and generate revenue
HOV lanes designed to manage demand – currently experiencing breakdowns

- **HOV asset:** Over $2B has been invested since the 1970’s to build out a 300-mile HOV system in Central Puget Sound.

- **HOV congestion:** Lanes should operate at 45 mph 90% of the time. Many HOV lanes currently don’t meet this performance standard as the 2+ HOV lanes are over utilized.

- **HOV management:** Some HOV lanes are congested, some are underused.

- **Congested lanes mean inability to guarantee transit trips:** Bus service costs increase and require more coaches when trips are slow or unreliable.
Express Toll Lanes are a solution

Improve traffic performance
- HOV system currently congested.
- Provides trip reliability into the future.
- Moves more people and vehicles throughout the entire freeway.
- Improves transit speed and reliability.

Fund future improvements
- Supply and demand based variable toll rates increase revenue with continued regional growth.
- Provides funding towards future improvements.
- Supplements traditional gas tax revenue.
- Market-based direct user fee.
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.
Northbound I-405 at 112th
Sept.–Nov. Average Weekday Speeds and Volumes AM Peak

Lane performance before the new capacity was built.
Northbound I-405 at 112th
Sept.–Nov. Average Weekday Speeds and Volumes AM Peak

Lane performance after the new capacity was built.
Northbound I-405 at 112th
Sept.–Nov. Average Weekday Speeds and Volumes AM Peak

Benefits are reduced without management.

Washington State Department of Transportation
Northbound I-405 at 112th
Sept.–Nov. Average Weekday Speeds and Volumes AM Peak

Lane performance continues to go down each year.
What has changed since WSDOT’s 2009 study?

- WSTC completed an independent (Cambridge Systematics) traffic and revenue analysis of WSDOT’s 2009 study
- WSTC looks at the following scenarios
  - Primary scenarios
    - Free passage and dynamic tolling for
      - HOV 2+
      - HOV 3+
      - HOV 3+/2+ peak/off-peak
  - Sensitivity scenarios
    - Dynamic tolling and $1 HOV discount
    - Flat toll and HOV 3+ travel free
How did the 2012 WSTC study compare to the 2009 WSDOT study?

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<th>2012 WSTC</th>
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<td>Willingness to pay</td>
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<td>Minimum toll</td>
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WSTC Study confirms 2009 WSDOT Gross Revenue is in the Range

From the 2012 CS Report

Cambridge Systematics 2012 WSDOT 2009
15th Percentile (Low) Low
85th Percentile (High) High
Important Takeaways: Revenue

- Revenue:
  - Independent revenue forecast narrowed the gross revenue range used by WSDOT for prior financial planning
  - Within, and on the low side of the WSDOT range except from 2014 to 2018 where the revenue is much lower than WSDOT, due to different “ramp up” assumptions

- Toll revenue is highly sensitive to transponder ownership

- Revenue growth is driven by
  - Toll rate growth
  - Which is driven by increasing congestion
Important Takeaways: Operations

- Corridor demand will exceed available capacity
  » Implications are uncertain

- Little difference in system performance between HOV 2+ free and HOV 3+ free scenarios
  » But – HOV 3+ allows greater flexibility in managing demand

- Frequent access points (1.5 miles between access) adversely impacts system performance due to weaving
  » Further evaluation of design in the middle section warranted (and planned by WSDOT)

- Express-lane performance affects general-purpose lane performance – and vice versa
WSDOT updated the 2009 study results to reflect similar inputs as WSTC

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Why photo tolling?

• Consistent customer experience
• Everyone can be a customer
• Does require Carpool declaration
  – Customers who wish to take advantage of a high-occupancy discount or exemption will need to have a transponder or be registered.
  – Not declaring will result in a toll being deducted from the customer’s account or a bill being sent in the mail.
WSTC Study confirms 2009 WSDOT Gross Revenue is in the Range

3+ HOV

2012 Dollars (in Millions)

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WSDOT 2012 numbers are also within WSTC’s range
Express Toll Lane carpool options

Bookends

3+ Free
- **Pro**: More reliable traffic performance. More buy-in opportunity leads to lower toll rates, higher revenue.
- **Con**: Impact to existing 2-person HOV lane users. Potential for low usage in non-peak periods.

2+ Free
- **Pro**: No change to current carpool definition.
- **Con**: Lane is full today; poor performance would continue. No space to sell; leads to higher toll rates and lower revenue for transportation improvements.
Potential Strategies to transition to 3+

Options under consideration:
– 3+ free during the peaks and 2+ free at other times
  – or –
  – All carpools (2 and more) pay a discounted toll rate
    • Flat discount
    • Discount is equal to or greater than the minimum toll, so carpools are free during uncongested times
Financial scenarios moving forward

Non photo toll scenario for comparison purposes
- 3+ HOVs toll free (WSDOT)
- 3+ HOVs toll free (WSTC Independent)

Photo toll scenarios (WSDOT)
- 3+ HOVs toll free
- 2+ HOVs toll free
- 2+ HOVs toll free off-peak / 3+ HOVs toll free peak
- Carpool discount
Preview of Phasing Strategies

Kim Henry, P.E.
I-405/SR 167 Program Director
Intro to Phasing

• Completing a 40 + mile system
  – Should SR 167 Direct Connector and Renton to Bellevue be opened as one system?

• What are the next priorities in building toward the Master Plan?
10 Year Implementation Strategy
10 Year Implementation Strategy

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# Project schedule book ends

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- Toll Vendor 167 DC/RTB
- Open SR 167/RTB to Toll 10/19
- Open SR 167/RTB to Toll 10/21
Next Priority Projects

Completing the 40-mile system

Future I-405 Corridor priorities

Projects on other corridors with direct benefits to I-405 (system to system connections)
Completing the 40-mile system

A. Tukwila to Bellevue - $1,353* million  
(WSDOT: $1,215 m; others: $138 m)

Benefits
- Benefit/Cost: 4.7
- Approximately 50,000 vehicle hours of delay reduced every day which equates to $276 M in annual travel time savings by drivers.

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</tr>
<tr>
<td>Sound Transit: N 8th St Direct Access</td>
<td>$78m*</td>
<td>Builds a direct access ramp at N. 8th St.</td>
</tr>
<tr>
<td>City of Bellevue: NE 6th St Extension Bellevue Share</td>
<td>$60m*</td>
<td>Extends NE 6th St. east across I-405 to 120th Ave. NE</td>
</tr>
</tbody>
</table>

B. SR 167 Express Toll Lanes Extension - $117 million

Benefits
- Benefit/Cost: 2.3
- Increases capacity over 50% and extends the reliability and traffic benefits of the SR 167 HOT lanes.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 4 (SB)</td>
<td>$82m (Funded)</td>
<td>Extends the existing southbound HOT lane to the King / Pierce County line.</td>
</tr>
<tr>
<td>Stage 5 (NB)</td>
<td>$35m</td>
<td>Starts the northbound HOT lane at the King/Pierce County.</td>
</tr>
</tbody>
</table>
### Future I-405 Corridor Priorities

#### C. Bothell to Lynnwood Dual Express Toll Lanes - $570 million

**Benefits**
- Benefit/Cost: 1.7
- Reduces 36,000 vehicle hours of delay reduced every day ($211 M annual travel time savings). Provides a new direct access connection between SR 522 and I-405 express toll lanes eliminating weaving and improving operations for the general purpose lanes.

<table>
<thead>
<tr>
<th>Project</th>
<th>Cost</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 522 Interchange</td>
<td>$315m</td>
<td>Builds a new direct access connection to SR 522 and redesigns a new interchange. Replaces the northbound I-405 bridge over the Sammamish River and SR 522.</td>
</tr>
<tr>
<td>SR 522 to I-5 Dual Express Toll Lanes</td>
<td>$255m</td>
<td>Adds a new lane in each direction between SR 522 and I-5 in Lynnwood to be paired with the existing express toll lane to form a dual express toll lane system.</td>
</tr>
</tbody>
</table>

#### D. I-405/NE 132\textsuperscript{nd} St. Interchange - $75 million

**Benefits**
- Benefit/Cost: 1.1
- Provides new access to and from north Kirkland area and complements 116th interchange which has recently been rebuilt.

<table>
<thead>
<tr>
<th>Project</th>
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<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE 132\textsuperscript{nd} St. Interchange</td>
<td>$75m</td>
<td>Builds a new half-diamond interchange at NE 132\textsuperscript{nd} St. in Kirkland.</td>
</tr>
</tbody>
</table>

#### E. SR 167 Stage 6 - $300 million

**Benefits**
- Benefit/Cost: 2:5
- Reduces vehicle delay by 32,000 vehicles daily.
- Project connects regional facilities of SR 410, SR 512, and future SR 167 extension.

<table>
<thead>
<tr>
<th>Project</th>
<th>Cost</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 167 Stage 6</td>
<td>$300m</td>
<td>Extends the SR 167 HOT lanes northbound and southbound to SR 410 / SR 512 interchange.</td>
</tr>
</tbody>
</table>
### System interchange improvements

#### F. I-90/I-405 Interchange Direct Connectors - $535 million

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Incremental Cost</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Benefit/Cost: 1.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| • Reduces daily delay by 22,000 vehicle hours of $112M in annual travel time savings. Reduces weaving and provides high speed reliable trips between the two interstate systems. | $270m | • Builds a new flyover ramp between the express toll lanes on I-405 and the HOV lanes on I-90.  
• The ramp would connect Renton to Issaquah. |
| I-405 / I-90 Renton to Issaquah Direct Connector | $265m | • Builds a new flyover ramp between the express toll lanes on I-405 and the HOV lanes on I-90.  
• The ramp would connect Bellevue to Issaquah. |
| I-405 / I-90 Bellevue to Issaquah Direct Connector | $270m | |

#### G. SR 520/I-405 and SR 520/124th Ave NE Interchange - $550 million

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Incremental Cost</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Benefit/Cost: 1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Reduces delay by 24,000 vehicle hours daily or $136 M in annual travel time savings. Provides direct connection between I-405 and SR 520 and eliminates weaving in the general purpose lanes.</td>
<td>$235m</td>
<td>• Rebuilds the SR 520/124th Ave NE interchange to Master Plan configuration</td>
</tr>
<tr>
<td>SR 520 / 124th Ave NE New Interchange</td>
<td>$315m</td>
<td>• Builds flyover ramps connecting the express toll lanes on I-405 to the HOV lane on SR 520. Ramps will connect Bellevue to Redmond traffic.</td>
</tr>
<tr>
<td>I-405 / SR 520 Bellevue to Redmond Direct Connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Diagram of the system interchange improvements]
Preview of Funding Strategies

Brent Baker
Parsons Brinkerhoff
What has changed since 2009?

• Project Costs
  – Current competitive bidding climate has helped minimize construction cost inflation
  – Construction market conditions may not remain as favorable in the future

• Toll Revenues
  – Revised forecasts are lower than in 2009
  – High levels of traffic demand and congestion continue in the corridor

• Schedule
  – Revenue growth and cost inflation trade-offs
  – User mobility benefits and financial feasibility trade-off

• Financing Terms
  – Current interest rates are at historic lows
What do we need to finance?

Early Delivery (Late 2019)
- Renton to Bellevue - $890 M
- SR167 Direct Connector - $325 M
- SR167 Stage 5 SR 167 – $35 M

Total construction need ~ $1.1 B
Total PE/RW funding need $68 M**

Late Delivery (Late 2021)
- Renton to Bellevue - $930 M
- SR167 Direct Connector - $340 M
- SR167 Stage 5 SR 167 – $38 M

Total construction need ~ $1.2 B
Total PE/RW funding need $69 M**

**Toll bond proceeds can only be used for construction expenditures.
Example: Timing of toll funding needs
Late opening (FY 2022)

Preliminary Sources and Uses of Funds

- Current proposed, but not approved, budget for 2013
- Total capital costs inclusive of preliminary engineering, right of way, and construction
- Total current funding inclusive of WSDOT Nickel and TPA contributions, federal earmarks, local funds, and corridor funds (SR167 flyover)
- Assumed PE/RW funding from local source
What are the strategies for financing capital improvements for the 40-mile system?

• Public funding
  – New state, federal and/or local contributions

• Toll-backed bonds
  – Studying different options
  – Could include a TIFIA loan

• We are currently working with the Office of the State Treasurer
  – Strategies and results in Meeting 3 (March)
EAG Comments
Public Comment
Wrap Up and Next Steps
Next steps

Meeting 1
Welcome back
January 24, 2013

Meeting 2
Carpool policy
February 27, 2013

Meeting 3
Financial results
March 2013

Meeting 4
Funding and phasing
April 2013

Final Report
June 2013
More information:

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