Introductions

Roger Millar, P.E., AICP
Acting Secretary of Transportation
Agenda

• Introductions
• I-405 Partner Program Updates
  – Sound Transit
  – King County Parks
  – WSDOT
• Public Comment
• Wrap-up and next steps
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
- New transit centers
- 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 Master Plan: Multimodal and making progress

<table>
<thead>
<tr>
<th>Project</th>
<th>Completion Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park and Ride expansions</td>
<td>80% complete or funded</td>
</tr>
<tr>
<td>Local arterial improvements</td>
<td>50% complete</td>
</tr>
<tr>
<td>Transit center expansions</td>
<td>70% complete</td>
</tr>
<tr>
<td>Add 2 lanes in each direction</td>
<td>45% complete or funded</td>
</tr>
<tr>
<td>Transit service increase</td>
<td>40% complete</td>
</tr>
<tr>
<td>Vanpool service increase</td>
<td>30% complete</td>
</tr>
<tr>
<td>Pedestrian/bicycle improvements</td>
<td>25% complete</td>
</tr>
<tr>
<td>Bus Rapid Transit stations</td>
<td>70% complete</td>
</tr>
<tr>
<td>Direct Access</td>
<td>12% complete</td>
</tr>
</tbody>
</table>
I-405/SR 167 Executive Advisory Group meeting

Ric Ilgenfritz, Executive Director, Planning, Environmental & Project Development
July 18, 2016
Regional Link Light Rail Expansion

By 2023, Puget Sound will have 50+ miles of light rail, with 30+ stations, directly connecting 11 cities.
ST3 Timeline

Long-Range Plan Update
2014

Revenue authority from Legislature
2015

System planning (Develop ballot measure)
2015 – mid-2016

WE ARE HERE

ST3 ballot measure
November 2016
## ST3 Adopted Plan Eastside Projects

<table>
<thead>
<tr>
<th>Light Rail</th>
<th>BRT</th>
<th>Other</th>
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<td></td>
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• HCT study: Northern Lake Washington |
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• HCT study: Northern Lake Washington  
• North Sammamish park and ride |
ST3 Adopted Plan Eastside Projects

- Overlake to Downtown Redmond LRT
- South Kirkland to Bellevue to Issaquah LRT
- I-405 BRT
- SR 522 BRT
- Bothell-Bellevue HCT Study
- North Sammamish park & ride
**Eastside Cities Served**

**Bus Rapid Transit I-405 & SR 522**
- Bellevue (1 station)
- Bothell (6 stations)
- Kenmore (2 stations)
- Kirkland (2 stations)
- Renton (2 stations)

13 stations

**Light Rail**
- Bellevue (8 stations)
- Issaquah (1 station)
- Kirkland (1 station)
- Mercer Island (1 station)
- Redmond (4 stations)

15 stations

**Express Bus/Parking**
- Sammamish
- Woodinville

*includes ST2 & ST3 projec
I-405 BRT- Candidate Projects

ST3 CANDIDATE PROJECT:
I-405 BUS RAPID TRANSIT

Corridor Options

- Bus operates in I-405 Express Toll Lanes

LOWER CAPITAL OPTION

1. Extended Terminal Station (Existing) BRT stations
2. Invest in 100 Regional bus services
3. Invest in 500 Local services
4. Invest in 1,000 Microtransit services
5. Invest in 5,000 Bicycle parking

INTENSIVE CAPITAL OPTION

1. Extended Terminal Station (Existing) BRT stations
2. Invest in 100 Regional bus services
3. Invest in 500 Local services
4. Invest in 1,000 Microtransit services
5. Invest in 5,000 Bicycle parking

REGIONAL LIGHT RAIL SPINE

- 13,000 - 18,000
- $3,175 - $4,150
- 4
- MEDIUM
- MEDIUM
- MEDIUM
- MEDIUM

LAND USE AND ECONOMIC DEVELOPMENT POTENTIAL

- 8 / 13
- 11 / 22
- MEDIUM
- MEDIUM

MISCELLANEOUS BENEFACTORS

- 39%
- 42%
- MEDIUM
- MEDIUM
### I-405 BRT - Adopted Plan

#### Highlights

- **10 minute frequency in peak hours, 15 minute off-peak**
- **New stations at:**
  - NE 85<sup>th</sup> Street in Kirkland
  - NE 44<sup>th</sup> Street in north Renton
  - Grady Way/Rainier in South Renton
- **Connections at existing transit facilities and with SR 522 BRT**
- Sound Transit will coordinate with WSDOT on implementation of the I-405 Master Plan, including additional capital projects to improve bus speed and reliability, should funding become available

#### 93% ridership potential captured
Lynnwood to Bellevue

- In Express Toll Lanes and bus-only shoulder lanes for majority of trip
- In general purpose lanes from Lynnwood to Canyon Park
- Provides connection to SR 522 BRT at 195th/UW Bothell
- Serves Totem Lake
- Serves Central Kirkland
I-405 South/SR 518 BRT

Bellevue to Renton, Tukwila Int’l Blvd station & Burien Transit Center

- In Express Toll Lanes from Bellevue to S Renton
- In HOV lanes from S Renton to SR 518
- In GP lanes to Tukwila Int’l Blvd station (TIBS)
- In bus-only lanes from TIBS to Burien Transit Center
Discussion: Sound Transit

Facilitated by:
Roger Millar, P.E., AICP
Acting Secretary of Transportation
Eastside Rail Corridor Regional Trail and WSDOT I-405 Project Coordination

I-405/SR 167 Executive Advisory Group Briefing
July 18, 2016
Erica Jacobs, ERC Project Manager, King County Parks
The Wilburton “Gap” – Reconnecting Across I-405

2007

Former rail bridge over southbound lanes of I-405

2009

Eastside Rail Corridor
Wilburton Gap Design Workshop
June 8, 2016

Workshop Objectives:

- Achieve agreement amongst King County, WSDOT, and City of Bellevue on the purpose and functions of the Wilburton crossing over I-405
- Identify 1-2 design concepts to meet this purpose and these functions

Crossing Objectives

- Connection for cyclists and pedestrians: Commitment to closing gap in Eastside Rail Corridor regional trail across I-405
- Possible accommodation of landscaping for wildlife crossing
- Design/Aesthetics: Meet WSDOT and KC Design Standards
- Cost: Alignment that balances trail user needs with costs
- Schedule: Construct bridge during I-405 Renton to Bellevue project (2019-2024) for maximum efficiencies
Bridge Considerations

- Bridge Structure Types
- Span Length and Skew
- Functionality and Criteria
  - Bike/Ped Design Criteria
  - Wildlife Crossing Concepts
- Multi-Use Corridor
- Aesthetics
- Cost (Construction and Maintenance)
Resulting Option #1: Bike/Ped Trail Bridge on Concrete Girder Structure

SPAN LENGTH: 155'
WIDTH: 16'

CONCRETE GIRDER
Resulting Option #2: Landscaped Bike/Ped with Wildlife Crossing Function

SPAN LENGTH: 155’
WIDTH: ~30’
ERC RIGHT OF WAY AND PROPOSED HIGHWAY
CONSENSUS: BRIDGE SPAN AND SKEW
## Project Schedules

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<tr>
<td><strong>I-405 Renton to Bellevue Widening and ETL</strong></td>
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Next Steps

- Follow-Up Meeting for Decisions: WSDOT, KC, COB (July/August)
  - Final Bridge Width and Functional Design Concept Decision
    - Cost Estimates For Two Width/Function Options - King County
    - Benefits Analysis for Wildlife Crossing - City of Bellevue
    - Maintenance Implications
    - Funding
  - Aesthetic Considerations
  - Process for Future Coordination and Reviews
Questions?

Erica Jacobs
ERC Project Manager, King County Parks  
[ericajacobs@kingcounty.gov](mailto:ericajacobs@kingcounty.gov)  
(206) 477-5539

Kim Henry
I-405/SR 167 Program Director, WSDOT  
[henryk@wsdot.wa.gov](mailto:henryk@wsdot.wa.gov)  
(425) 456-8539
Discussion: King County

Facilitated by:
Roger Millar, P.E., AICP
Acting Secretary of Transportation
Goals of Express Toll Lanes

• Improve speed and reliability in the HOV lanes
• Offer more choices to drivers
• Fund future corridor improvements
Since opening the express toll lanes:

- Express toll lanes use continues to increase.
- In most sections, during peak period commutes I-405 is moving more vehicles at faster speeds across all lanes.
- Express toll lanes are moving more vehicles than previous HOV lanes.
- Currently express toll lanes are meeting the performance requirement of maintaining speeds of 45 mph 90 percent of the time during peak periods. However, more drivers are using the lanes, causing toll rates to reach the $10 maximum more often and for longer durations.

- No impacts to traffic volumes on alternative routes have been found.

- Northbound through Bothell, general purpose lanes continue to be more congested than prior to express toll lanes.
More drivers are using the express toll lanes, following an initial drop with the change in hours of operation mid-March. By June, the total trip numbers were back to similar levels prior to the change – even with operating hours reduced by 58 percent.

**I-405 express toll lanes total trips since opening**

- **Sept 2015**: 0 trips
- **Oct 2015**: 1,400,000 trips
- **Nov 2015**: 1,400,000 trips
- **Dec 2015**: 1,200,000 trips
- **Jan 2016**: 1,200,000 trips
- **Feb 2016**: 1,200,000 trips
- **Mar 2016**: 1,200,000 trips
- **Apr 2016**: 1,000,000 trips
- **May 2016**: 1,000,000 trips
- **June 2016**: 1,000,000 trips

* Opening date: Sept. 27, 2015
** Hours of operation changed March 18, 2016
Source: WSDOT Toll Operations
Improved speed and reliability for HOV lanes

I-405 HOV Performance
Percentage of peak period when speeds are greater than 45 MPH

This metric will be measured in six month intervals over two years.

Express toll lane are still meeting performance requirements
Increased use of express toll lanes means higher average toll rates

Percent of Peak Period 405 Toll Trips by Rate Category
Sept. 27, 2015 - June 30, 2016
Monday - Friday
5 - 9 a.m. AM Peak
3 - 7 p.m. PM Peak

Average Peak Period Toll Rates

- Sept. 27 to Dec. 2015 - $1.75
- Jan. to March 2016 - $2.40
- April to June 2016 - $2.72
- Nine month average $2.33
Financial Forecasts

• The initial gross toll revenue estimate was $3.14 million through May 2016. Actual gross toll revenue was $10.56 million.
• WSDOT updated revenue forecasts in June to reflect the faster than anticipated ramp-up for express toll lanes. New forecasts project an increase of about $20 million in gross toll revenue and fees in each biennium compared to the initial forecast.
• During the last legislative session, the Legislature assumed increased toll revenue will cover capital investments in the I-405 corridor of $29 million in the 2017-19 biennium and $16 million in the 2019-21 biennium.

Meeting goals:
✔ Covering operating costs
✔ Funding future investments

Gross revenue covers operating costs first:
• Customer service
• Toll equipment
• Enforcement
• Good To Go! passes
• Pay By Mail printing and postage
• WSDOT and consultant salaries
Peak Period Congestion in the General Purpose Lanes
April-June 2015 vs. April-June 2016

Where are you traveling on I-405?

SOUTHBOUND
Before ETL  After ETL

NORTHBOUND
Before ETL  After ETL

Free Flow
Moderate
Heavy
Stop and Go
Sample Commute: Regular Lanes, Bothell to Lynnwood, 6 p.m.

BEFORE Express Toll Lanes
Northbound, April - June 2015

Mostly free-flow and moderate traffic throughout the trip.

Trip start

Trip end

AFTER Express Toll Lanes
Northbound, April - June 2016

Heavier traffic throughout the trip with improvement north of SR 527.

Trip start

Trip end

Travel Time Difference After ETLs
3 minutes slower

Travel experiences vary

Where are you traveling on I-405?

LYNNWOOD

NE 195th St

527

BOTHELL

NE 128th St

NE 116th St

522

KIRKLAND

NE 85th St

NE 70th St

520

BELLEVUE

NE 6th St

Free Flow

Moderate

Heavy

Stop and Go
Summary

• The Legislature directed WSDOT to report out on travel times for smaller northbound and southbound I-405 segments. We’ve currently pulled data for these segments:
  – Bellevue to NE 116th St
  – SR 520 to SR 522
  – Bellevue to SR 522
  – Bellevue to SR 527
  – NE 85th to NE 195th

Segment Highlights

• Speeds are faster in each of the selected segments
• Travel times have improved for all selected segment trips
• 95th percentile demonstrates improved reliability in the selected segments
Change in travel times by segment

Southbound I-405
from NE 195th St to NE 85th St
(AM Peak Period)

<table>
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<th>General Purpose Lanes</th>
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<tr>
<td>October 2014 vs. 2015</td>
<td>6.0 (9.5) Minutes Faster</td>
<td>5.6 (6.3) Minutes Faster</td>
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<tr>
<td>January 2015 vs. 2016</td>
<td>2.3 (4.2) Minutes Faster</td>
<td>4.7 (5.5) Minutes Faster</td>
</tr>
<tr>
<td>May 2015 vs. 2016</td>
<td>2.6 (4.4) Minutes Faster</td>
<td>5.3 (6.8) Minutes Faster</td>
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The 95th percentile is a measure of reliability that allows commuters to plan how much time will be required to make a trip and be on time 19 days per month on average and late on one of 20. Ninety-five percent of travel times are shorter than this duration. Faster speeds mean that commuters have more predictability and can plan less time for their commute.

Nine month performance update
Change in travel times by segment

## Northbound I-405 from NE 85th St to NE 195th St (PM Peak Period)

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<td><strong>October 2014 vs. 2015</strong></td>
<td>3.4 (5.3) Minutes Faster</td>
<td>2.9 (1.6) Minutes Faster</td>
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<tr>
<td><strong>January 2015 vs. 2016</strong></td>
<td>2.9 (4.2) Minutes Faster</td>
<td>2.7 (1.9) Minutes Faster</td>
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<tr>
<td><strong>May 2015 vs. 2016</strong></td>
<td>2.6 (3.5) Minutes Faster</td>
<td>1.3 (0.2) Minutes Faster</td>
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## Change in travel times by segment

### Southbound I-405 from NE 116th St to Bellevue (AM Peak Period)

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<td>2.3 Minutes Faster</td>
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<tr>
<td>January 2015 vs. 2016</td>
<td>1.2 Minutes Faster</td>
<td>1.8 Minutes Faster</td>
</tr>
<tr>
<td>April* 2015 vs. 2016</td>
<td>0.8 Minutes Faster</td>
<td>1.6 Minutes Faster</td>
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*The Data from May 2015-16 is not available in this segment
King County Metro – Spring service period

Key Takeaways
- Ridership increased 8.2 percent
- Average travel savings of 2.1 minutes in the AM and 5.8 minutes in the PM.

<table>
<thead>
<tr>
<th>Route</th>
<th>Avg. Weekday Boardings</th>
<th>Change</th>
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<tbody>
<tr>
<td>237</td>
<td>106 125</td>
<td>17%</td>
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<tr>
<td>252</td>
<td>674 687</td>
<td>2%</td>
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<tr>
<td>257</td>
<td>574 592</td>
<td>3%</td>
</tr>
<tr>
<td>277</td>
<td>239 271</td>
<td>13%</td>
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<tr>
<td>311</td>
<td>1,032 1,151</td>
<td>12%</td>
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<tr>
<td>342</td>
<td>299 310</td>
<td>4%</td>
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<tr>
<td>952</td>
<td>294 347</td>
<td>18%</td>
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<tr>
<td>Total</td>
<td>3,219 3,483</td>
<td>8.2%</td>
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<tr>
<th>Route</th>
<th>Average Travel Time in Minutes (by route by period)</th>
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<td>Spring 2015</td>
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<tr>
<td></td>
<td>AM</td>
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<tr>
<td>237</td>
<td>22.9</td>
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<tr>
<td>311</td>
<td>22.7</td>
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<tr>
<td>342</td>
<td>21.5</td>
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<tr>
<td>952</td>
<td>37.2</td>
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<tr>
<td>Total</td>
<td>23.2</td>
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</table>

Data comparison:
2015: February 16– June 5, 2015, weekdays
2016: March 28 – May 31, 2016, weekdays
Key Takeaways
• Peak period transit ridership increased 3 percent

Summary
• Daily average time savings showed improvements for the majority of routes, with the exception of Route 424 which travels between SR 520 and SR 522.

Data comparison:

<table>
<thead>
<tr>
<th>Year</th>
<th>Period</th>
<th>Routes</th>
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<tbody>
<tr>
<td>2015</td>
<td>April – June, weekdays</td>
<td>424, 435, 532, 535</td>
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<tr>
<td>2016</td>
<td>April – June, weekdays</td>
<td>535</td>
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</tbody>
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# Express Toll Lanes

## Successes and Challenges

### Successes

- Express toll lanes are heavily used.
- Commuters have a faster and more reliable trip in the express toll lanes.
- Pay By Mail use is higher than anticipated.

### Challenges

- Limited capacity in the single express toll lane between SR 522 and I-5, combined with heavy demand from drivers, causes:
  - Toll rates to reach the $10 maximum often to manage demand.
  - Speeds to drop below 45 mph frequently when at maximum toll rate.
## General Purpose Lanes

### Successes

+ Southbound general purpose peak period travel times and speeds have improved with express toll lane operations.

+ Weekday peak period general purpose travel times are faster in both directions through the section of the corridor with dual express toll lanes.

### Challenges

- Limited capacity in the general purpose lanes on northbound I-405 between SR 522 and I-5, due to transition from five to three lanes, has resulted in travel times being three minutes slower for that section.
Peer to Peer Workshop

• On June 20-22 three agency peers and FHWA provided insights on the implementation of the I-405 express toll lanes, challenges and lessons learned from the experience.

• Feedback
  – WSDOT has identified and adequately addressed operational challenges.
  – Express toll lanes have proven to be desirable and successful.
  – Changing occupancy rates and mandatory pass requirements for carpools were major changes and difficult to implement at the same time.
  – WSDOT should consider a regional concept of operations for how all “managed” capacity will integrate with each other.

PEER AGENCY PANEL
Nick Farber, Colorado Department of Transportation High Performance Transportation Enterprise
Kathy McCune, Los Angeles County Metropolitan Transportation Authority
Lev Pinelis, Transurban
Greg Jones, Federal Highway Administration
James McCarthy, Federal Highway Administration
David Ungemah, Transportation Research Board Congestion Pricing Committee
I-405 operations: Adjustments

- **Completed Adjustments**
  - Operational hours
    - Mon-Fri 5 a.m. to 7 p.m.
  - Toll rate algorithm adjustments
  - Striping and access adjustments at 9 locations
  - Additional pavement markings and signage at 3 locations
I-405 operations: Future Projects Under Evaluation

14 Northbound auxiliary lane between SR 520 and NE 70th Place

15 General purpose hard shoulder running on northbound I-405 from SR 527 to I-5

16 Address limited capacity in single express toll lane section (SR 522 to I-5)

Plans to address capacity issues
**What is Hard Shoulder Running (HSR)?**

- Traffic Management Strategy that uses a shoulder as a general purpose lane to provide additional capacity when needed (peak periods)
- Shoulder is preserved when traffic volumes are lower
- Dynamically controlled using electronic signs

**Timeline**

- Initial funding in 2016 Supplemental Transportation Budget
- Construction targeted for 2017
- Estimated project cost: $11.5 million

**Expected Scope**

- New northbound general purpose hard shoulder running lane from SR 527 to I-5
- New noise wall for area residents
- Other spot improvements
What are the next priorities?

Completing the 40-mile system

Future I-405 Corridor priorities

Projects on other corridors with direct benefits to I-405 (system to system connections)
I-405 North End: Existing Conditions

- Two express toll lanes from NE 6th Street to south of SR 522
- Constraints at SR 522 interchange
- No direct access ramps north of Kirkland
I-405 North End: Improvements Under Study

15 Add hard shoulder running on northbound I-405 between SR 527 and I-5
- Improved northbound general purpose lane speeds

16
- Widen SR 522 interchange
- Extend dual express toll lane system north to SR 527 interchange
- Build partial direct access ramp near SR 527
- Improved general purpose lane speeds
- 50-70% increase in express toll lane throughput north of SR 522
I-405 Congestion: Southbound morning peak
General purpose lanes – Conceptual Model

Existing*  After HSR*  After HSR and ETL extension*

5 am  7 am  9 am  5 am  7 am  9 am  5 am  7 am  9 am

LYNNWOOD
527
NE 195th St
522
NE 128th St
NE 85th St
NE 70th St
520
NE 6th St

*Based on 2016 traffic volumes
I-405 Congestion: Northbound afternoon peak
General purpose lanes – Conceptual Model

Existing* | After HSR* | After HSR and ETL extension*
---|---|---
LYNNWOOD | | |
527 | | |
NE 195th St | | |
522 | | |
NE 128th St | | |
NE 85th St | | |
NE 70th St | | |
520 | | |
NE 6th St | | |

3 pm | 5 pm | 7 pm
---|---|---

Free Flow | Moderate | Heavy | Stop and Go

*Based on 2016 traffic volumes
Immediate Next Steps: I-405 and SR 167

Phase 2: Next steps
Renton to Bellevue Widening and Express Toll Lanes
• Benefit/Cost ratio – 4.7
• Open in 2024

I-405/SR 167 Direct Connector
• Contract award in 2016
• Open in 2019

SR 167: SR 410 to SR 18 Northbound HOV Lane Project
• Funded by PSRC grant
• Construction starts in 2018
Project Description:
Builds a new flyover ramp connecting the SR 167 HOT lanes to the I-405 HOV lanes. Also relocates a noise wall and constructs portions of local streets in the Talbot Hill neighborhood.

Construction Start:
Late summer/early fall 2016

- Guy F. Atkinson Construction of Renton awarded design-build contract for $115.9 million
- Sanitary sewer relocation at South 14th Street (Talbot Hill) under way
- Olympic Pipeline relocation expected to start in August
I-405 Delivery Schedule: Current Funding

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Description</th>
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| 2015 | Award design/ build contract | I-405/SE 167 Direct Connect  
CN $285 million |
| 2016 | Open Direct Connector to traffic | Start contract procurement |
| 2017 | Stage 1: Renton to Bellevue ETL  
PF/RW $30 million | Construction $775 million |
| 2018 | Stage 2: Renton to Bellevue ETL  
PF/RW $30 million | Construction $775 million |
| 2019 | PE and RW $25 million | Construction $50 million |
| 2020 | PE $17.4 million | RW $23.5 million |
| 2021 | PE $17.4 million | RW $23.5 million |
| 2022 | PE $17.4 million | RW $23.5 million |
| 2023 | PE $17.4 million | RW $23.5 million |
| 2024 | PE $17.4 million | RW $23.5 million |
| 2025 | PE $17.4 million | RW $23.5 million |
| 2026 | PE $17.4 million | RW $23.5 million |
| 2027 | PE $17.4 million | RW $23.5 million |
| 2028 | PE $17.4 million | RW $23.5 million |
| 2029 | PE $17.4 million | RW $23.5 million |

- **I-405 Renton to Bellevue Widening & Express Toll Lanes**  
  $1.22 billion

- **I-405/NE 132nd Interchange**  
  $75 million

- **SR 520/NE 124th Interchange**  
  $40.9 million

- **New SR 527 to I-5 NB Hard Shoulder Running**  
  $11.5 million

- **New SR 520 to NE 70th St NB Aux Lane**  
  $15 million

- **Program Savings (Nickel/TPA)**
- **CWA Funding**
- **Funded by Toll Revenue**

Moved aux lanes from Stage 3 to Stage 2 based on Bellevue to Lynnwood experience.
Discussion: WSDOT Update

Facilitated by:
Roger Millar, P.E., AICP
Acting Secretary of Transportation
Public Comment

Facilitated by:
Anne Broache
I-405/SR 167 Program Communications
Wrap Up

Roger Millar, P.E., AICP
Acting Secretary of Transportation