

# I-405 Funding and Phasing Draft Findings



Washington State Transportation Commission  
Kirkland, Wash.  
November 20, 2013

# Agenda

- Review key study elements
- Review express toll lane performance
- Review express toll lane funding and phasing

# 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.

AM Peak Period



PM Peak Period

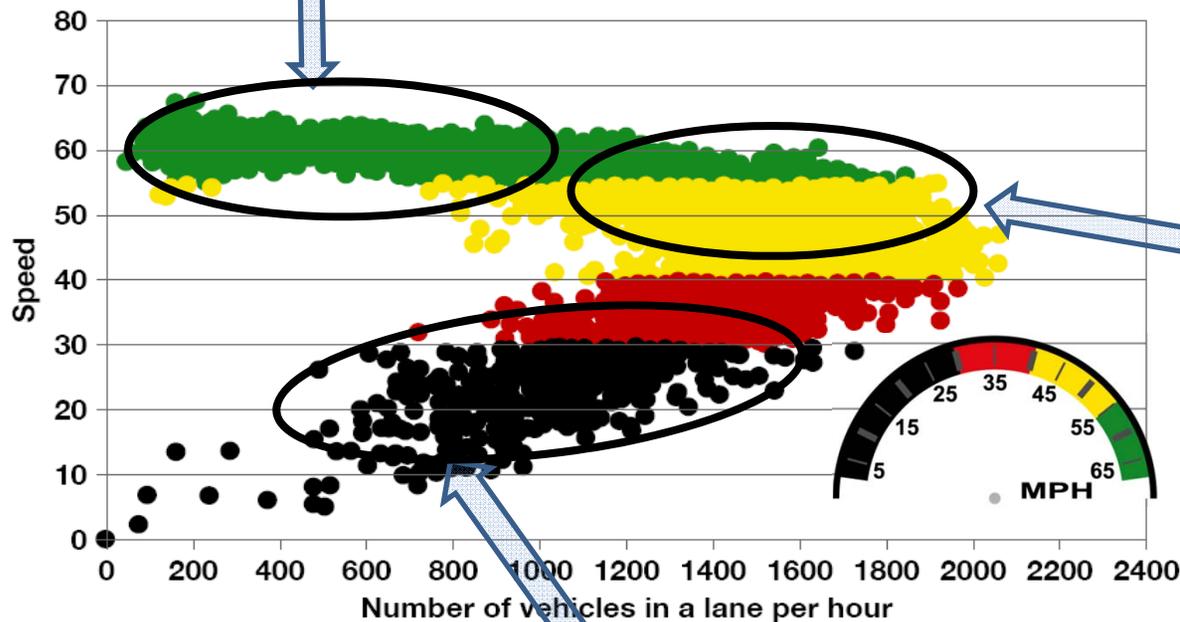


■ Congested segments not meeting performance standards.

# 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

# 2010: I-405/SR 167 Executive Advisory Group

## 2010 Plan Endorsement

*Dave Gossett*  
 Dave Gossett  
 Snohomish County Councilmember

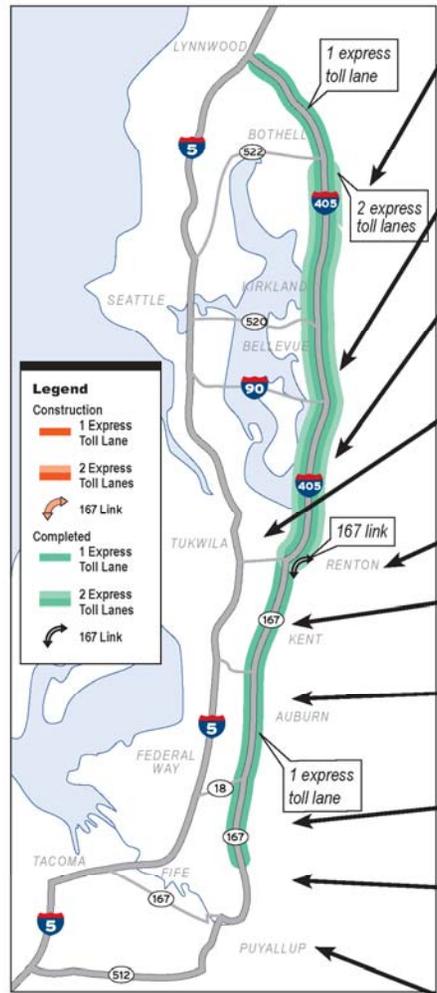
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 King County Council

*Richard Ford*  
 Richard Ford  
 WA State Transportation Commission

*Sue Singer*  
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 Puget Sound Regional Council

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*Joan McBride*  
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 Mayor of Pacific

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 Kathy Turner  
 Mayor of Puyallup

# Carpool scenarios

## Bookends

- 3+ carpool free
- 2+ carpool free

## Transition options

- 3+ carpool free peak / 2+ carpool free off-peak
- Carpool discount

3+ carpool free peak/2+ carpool free off-peak

EXPRESS TOLL LANES	
 \$2.00	 \$0.75
NE 124 <sup>th</sup> ST \$2.15	NE 124 <sup>th</sup> ST \$0.75
NE 6 <sup>th</sup> ST \$2.35	NE 6 <sup>th</sup> ST \$0.75
<b>3+ free 5 a.m. - 10 a.m.</b>	
<b>2+ free 10 a.m. - 3 p.m.</b>	

Carpool discount

EXPRESS TOLL LANES	
 \$2.00	 \$2.00
NE 124 <sup>th</sup> ST \$2.15	NE 124 <sup>th</sup> ST \$2.15
NE 6 <sup>th</sup> ST \$2.35	NE 6 <sup>th</sup> ST \$2.35
<b>Carpool \$1.00 discount</b>	

# Our direction from RCW 47.56.880

*(as amended by EHB 1382 in 2011)*

(4) The department shall monitor the express toll lanes project and shall annually report to the transportation commission and the legislature on the impacts from the project on the following performance measures:

(a) Whether the express toll lanes maintain speeds of forty-five miles per hour at least ninety percent of the time during peak periods;

(b) Whether the average traffic speed changed in the general purpose lanes;

(c) Whether transit ridership changed;

(d) Whether the actual use of the express toll lanes is consistent with the projected use;

(e) Whether the express toll lanes generated sufficient revenue to pay for all Interstate 405 express toll lane-related operating costs;

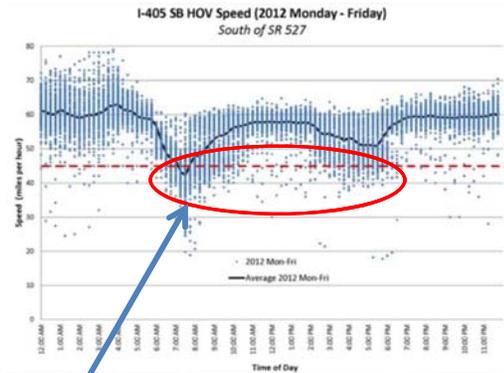
(f) Whether travel times and volumes have increased or decreased on adjacent local streets and state highways; and

(g) Whether the actual gross revenues are consistent with projected gross revenues as identified in the fiscal note for Engrossed House Bill No. 1382 distributed by the office of financial management on March 15, 2011.

(5) If after two years of operation of the express toll lanes on Interstate 405 performance measures listed in subsection (4)(a) and (e) of this section are not being met, the express toll lanes project must be terminated as soon as practicable.

# Phasing the 40-mile system

Reference performance measure 4(a) in RCW 47.56.880



2+ carpool definition does not meet performance standard today

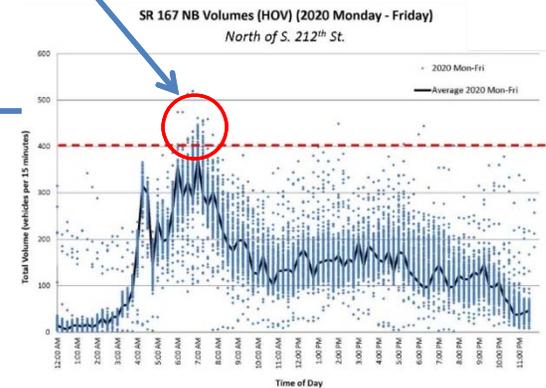
Phase 1:  
Opens 2015



Phase 2: Opens 2022  
(earliest with funding)



2+ Carpool free does not meet performance standard in 2020



New carpool operations for north end of I-405

40-mile system connected: New carpool operations for I-405 and SR 167

# Early Year Net Revenue Projections

Reference performance measure 4(e) in RCW 47.56.880

Millions of Dollars — Assumes Renton to Bellevue Opens 1/1/2022

Fiscal Year	Scenario A — 2+ Carpool Free   Photo Tolling*				Scenario B — \$1.00 Carpool Discount*				Scenario B-2 — \$0.50 Carpool Discount   Photo Tolling*			
	Potential Gross Toll Revenue <sup>1</sup>	Adjusted Gross Toll Revenue <sup>2</sup>	Less: Operations & Maintenance Costs <sup>3</sup>	Net Toll Revenue (before R&R)	Potential Gross Toll Revenue <sup>1</sup>	Adjusted Gross Toll Revenue <sup>2</sup>	Less: Operations & Maintenance Costs <sup>3</sup>	Net Toll Revenue (before R&R)	Potential Gross Toll Revenue <sup>1</sup>	Adjusted Gross Toll Revenue <sup>2</sup>	Less: Operations & Maintenance Costs <sup>3</sup>	Net Toll Revenue (before R&R)
2016	2.8	2.6	(5.0)	(2.4)	3.9	3.3	(6.2)	(2.8)	6.9	6.4	(5.9)	0.4
2017	4.7	4.3	(6.4)	(2.1)	5.3	4.5	(6.9)	(2.4)	9.3	8.5	(6.7)	1.8
2018	5.6	5.2	(7.1)	(2.0)	6.3	5.3	(7.4)	(2.1)	11.2	10.3	(7.6)	2.7
2019	6.1	5.6	(7.3)	(1.7)	7.0	6.0	(7.8)	(1.8)	13.5	12.5	(8.5)	4.0
2020	6.6	6.1	(7.6)	(1.5)	7.9	6.7	(8.3)	(1.6)	16.3	15.0	(9.6)	5.4
2021	7.2	6.6	(8.0)	(1.4)	8.9	7.5	(9.0)	(1.5)	19.6	18.0	(11.1)	7.0
2022	22.0	20.2	(19.4)	0.9	35.7	30.4	(19.1)	11.3	46.5	42.7	(22.5)	20.2
2023	44.1	40.5	(27.5)	13.0	77.7	66.0	(25.9)	40.1	88.4	81.3	(30.5)	50.8

Fiscal Year	Scenario C — 2+ Carpool Free Off-Peak   3+ Carpool Free Peak   Photo Tolling*				Scenario D — 3+ Carpool Free   Photo Tolling*				Scenario F — 3+ Carpool Free (WSTC Independent Forecast)†			
	Potential Gross Toll Revenue <sup>1</sup>	Adjusted Gross Toll Revenue <sup>2</sup>	Less: Operations & Maintenance Costs <sup>3</sup>	Net Toll Revenue (before R&R)	Potential Gross Toll Revenue <sup>1</sup>	Adjusted Gross Toll Revenue <sup>2</sup>	Less: Operations & Maintenance Costs <sup>3</sup>	Net Toll Revenue (before R&R)	Potential Gross Toll Revenue <sup>1</sup>	Adjusted Gross Toll Revenue <sup>2</sup>	Less: Operations & Maintenance Costs <sup>3</sup>	Net Toll Revenue (before R&R)
2016	4.9	4.5	(5.0)	(0.5)	5.3	4.9	(4.6)	0.3	6.3	5.4	(3.9)	1.4
2017	8.2	7.6	(6.4)	1.2	9.0	8.3	(5.8)	2.5	8.7	7.4	(4.0)	3.3
2018	9.9	9.1	(7.1)	2.1	10.8	9.9	(6.4)	3.5	11.9	10.1	(4.4)	5.7
2019	10.8	10.0	(7.2)	2.8	11.7	10.8	(6.5)	4.3	13.8	11.7	(4.7)	7.0
2020	11.8	10.8	(7.4)	3.4	12.6	11.6	(6.7)	4.9	15.7	13.3	(5.1)	8.3
2021	12.8	11.7	(7.8)	3.9	13.6	12.5	(7.1)	5.5	17.7	15.1	(5.6)	9.5
2022	40.8	37.5	(19.8)	17.7	44.2	40.5	(19.3)	21.2	54.9	46.7	(20.9)	25.8
2023	83.7	76.9	(28.7)	48.2	91.1	83.7	(28.3)	55.4	101.8	86.5	(23.0)	63.5

**NOTES:**

\* CDM Smith traffic and revenue projections.

† Cambridge Systematics "50th Percentile" traffic and revenue projections.

<sup>1</sup> Year of collection dollars.

<sup>2</sup> Adjusted for potential uncollectible revenue.

<sup>3</sup> Includes facility O&M costs starting in FY 2022, plus toll collection costs and credit card fees in all years.

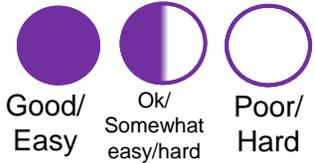
Revised 9/18/13



  Meets revenue requirement in EHB 1382

  Does not meet EHB 1382 revenue requirement

# Comparison of Scenarios- Updated Meeting #3, 9/19/13

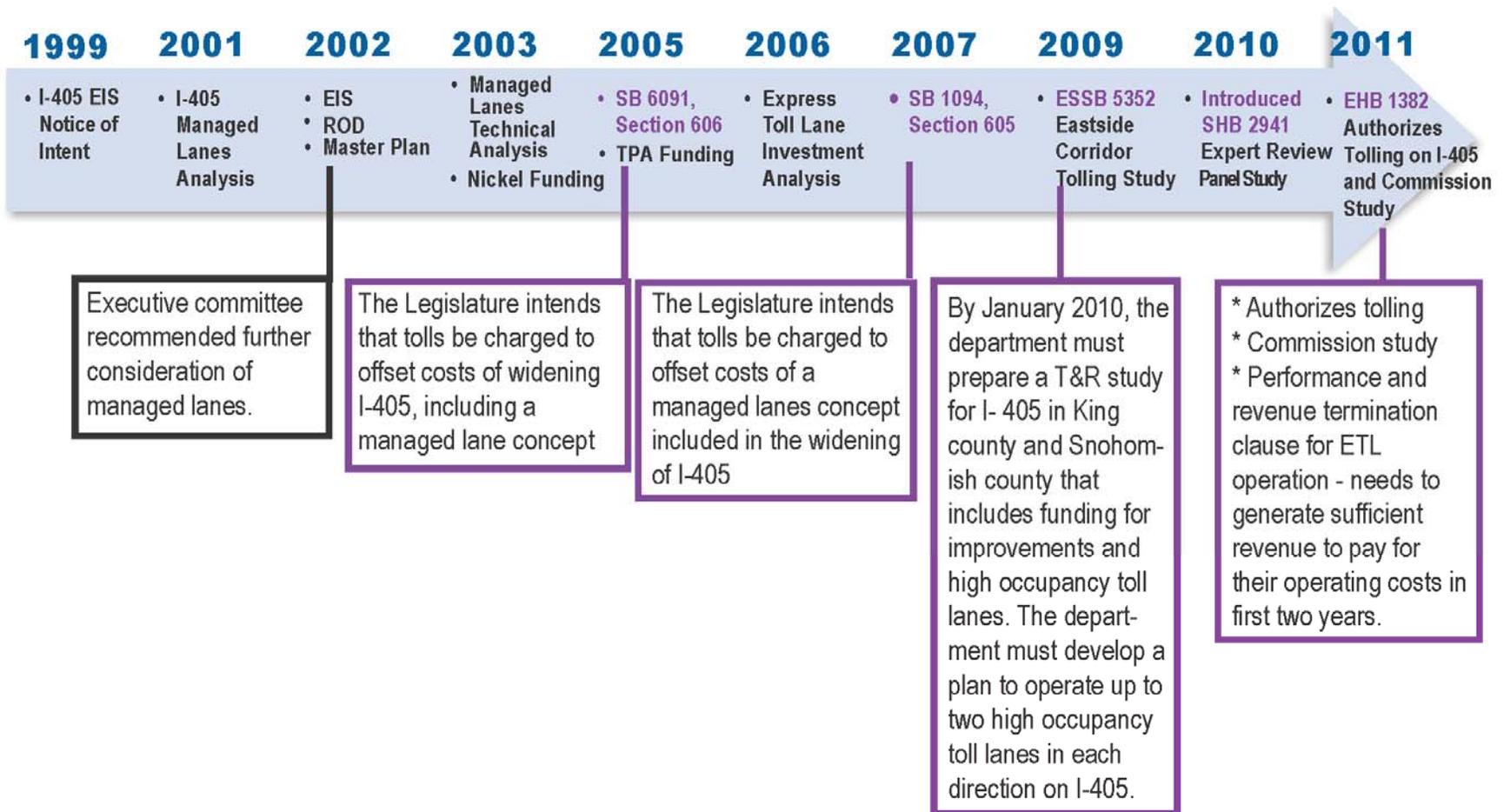
		<b>A.</b> <b>Carpool Free</b>	<b>B.</b> <b>Carpool Discount</b> \$1.00      \$0.50	<b>C.</b> <b>Peak Free</b> <b>Off-Peak Free</b>	<b>D.</b> <b>Carpool Free</b>
<b>System reliability/Operations</b>			\$1.00       \$0.50		
<b>Toll Rates/Pricing</b>					
<b>Initial Net Revenue</b>					
<b>Public acceptance</b>					
<b>Usability</b>					
<b>Enforcement</b>					
<b>Regional operations/Future decision</b>					

# How could we fund and phase the project?

**Denise Cieri**

I-405/SR 167 Program Deputy Director, WSDOT

# Legislative Direction Funding Challenges



# Funding and Phasing from RCW 47.56.886

*(as amended by EHB 1382 in 2011)*

(2) 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 Interstate 405 and state route number 167 corridor. The department must include the following elements in the finance plan:

(a) Current state and federal funding contributions for projects in the Interstate 405 and state route number 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 Interstate 405 and state route number 167 corridor by 2014; and

(e) Completion of the capacity improvements in the Interstate 405 and state route number 167 corridor.

(3) The department and the transportation commission must **consult with a committee consisting of local and state elected officials from the Interstate 405 and state route number 167 corridor and representatives from the transit agencies** that operate in the Interstate 405 and state route number 167 corridor while developing the performance standards, traffic and revenue analysis, and finance plan.

# Hypothetical Toll Funding Ranges

## Potential Toll Funding by Toll Scenario and Debt Structure Option

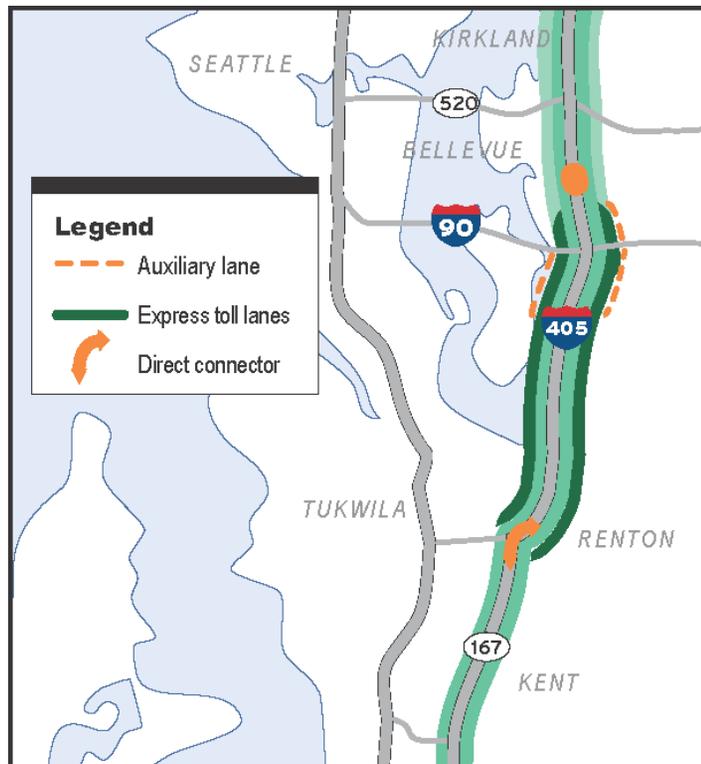


## Preliminary Financial Findings

- Experience from a functioning Bellevue to Lynnwood express toll lane system will provide valuable information about the predictability, volatility, and reliability of express toll lane revenues
- Level debt service structuring for the outer forecast years reduces financing risks
- A TIFIA loan may be an option for partial financing:
  - The program was designed for projects in need of credit enhancement
  - Recent tightening of credit quality requirements for TIFIA applicants may reduce the potential benefits of a TIFIA loan
- The State should identify other funding sources to rely less on express toll lane revenues financed for up-front construction and more for:
  - Pay-as-you-go capital expenditures to complete the 40-mile system
  - Ongoing system operating expenses

## Low traditional funding - \$675 m

*\$500 m needed from toll revenue*



- Traditional revenue resources fund reduced scope Renton to Bellevue (\$675 m)

- Use toll revenue financing to complete 40-mile system (\$500 m), system open by 2022

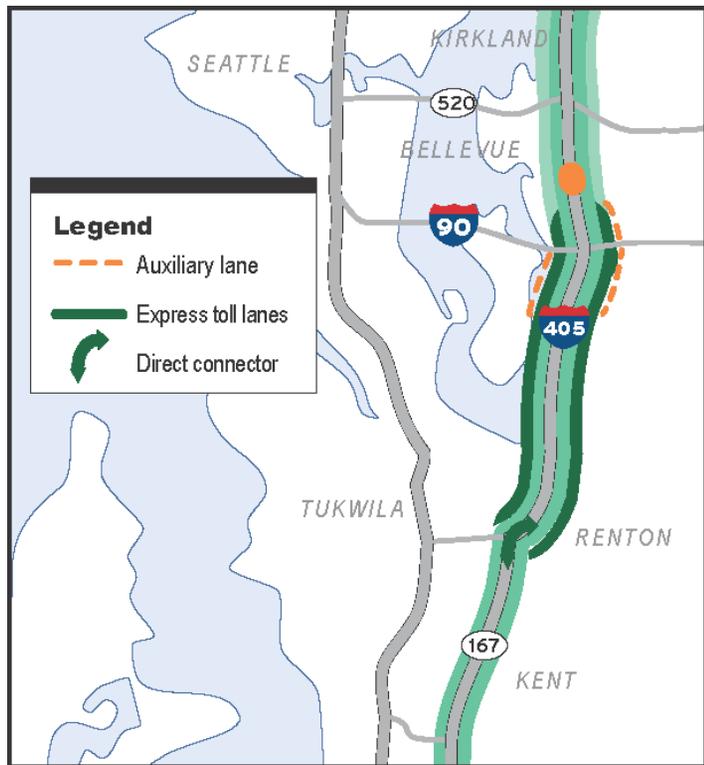
**or**

- Use pay-as-you-go to complete 40-mile system (\$500 m)

- FY 2027 ~ \$285 m available for direct connector
- FY 2031 ~ \$500 m available complete 40-mile system

# Medium traditional funding - \$960 m

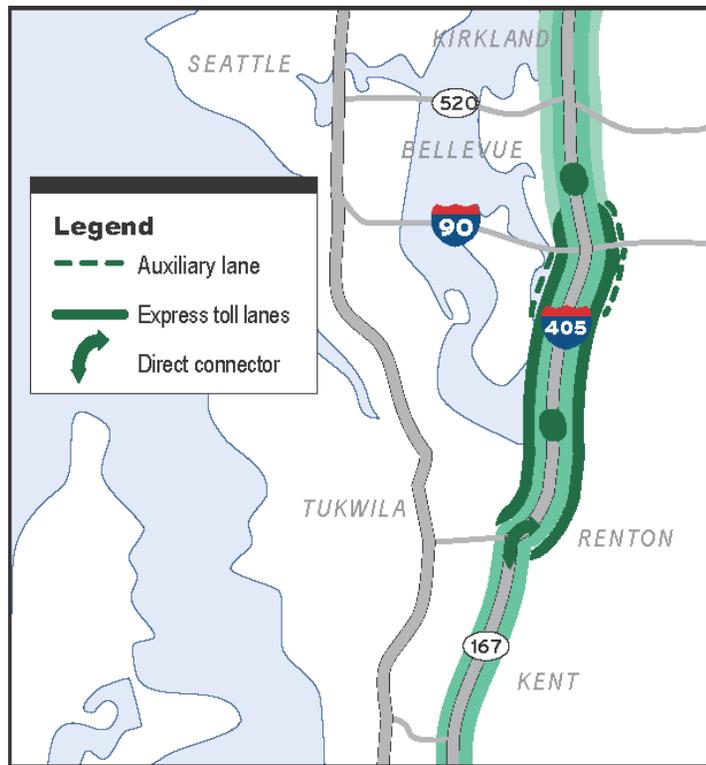
*\$215 m needed from toll revenue*



- Traditional revenue resources fund reduced scope Renton to Bellevue widening and I-405/SR 167 Direct Connector (\$960 m)
  - Use toll revenue financing to complete 40-mile system (\$215 m needed), system open by 2022
- or
  - Use pay-as-you-go to complete 40-mile system (\$215 m needed)
    - FY 2026 ~ \$215 m available

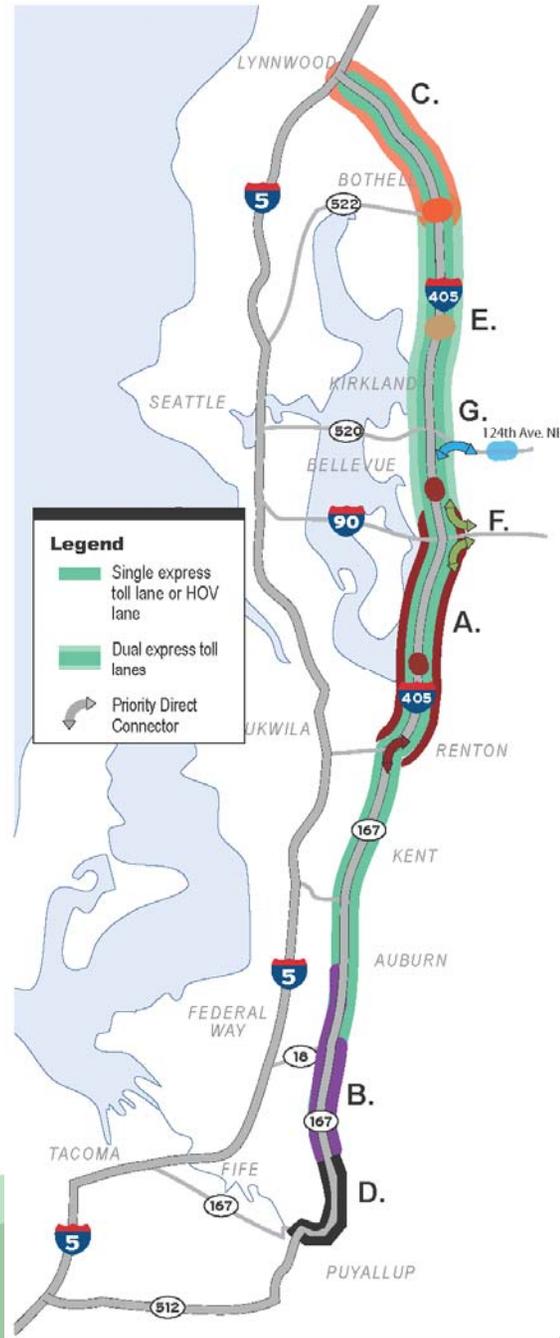
# High traditional funding - \$1,175 m

*\$0 needed from toll revenue*



- Traditional revenue resources (gas tax) fund entire 40-mile system (\$1,175 m)
  - \$0 needed from toll revenue, system open by 2022
  - All future toll revenue used for other corridor priority projects, operations, and preservation.
    - FY 2025 ~ \$250 m available
    - FY 2028 ~ \$500 m available
    - FY 2033 ~ \$1,000 m available

# Next Priorities



## Completing the 40-mile system

A. Tukwila to Bellevue - \$1,353* million (WSDOT: \$1,215 m; others: \$138 m)			
<b>Benefits</b> <ul style="list-style-type: none"> <li>Benefit/Cost: 4.7</li> <li>Approximately 50,000 vehicle hours of delay reduced every day which equates to \$276 M in annual travel time savings by drivers.</li> </ul>	Renton to Bellevue (Option 4)	\$890	<ul style="list-style-type: none"> <li>Adds one lane in each direction</li> </ul>
	SR 167 Direct Connector	\$325 (\$40M in PE/RW funded)	<ul style="list-style-type: none"> <li>Builds a flyover ramp connecting the I-405 express toll lanes to the SR 167 HOT lanes</li> </ul>
	Sound Transit: N 8th St Direct Access	\$78*	<ul style="list-style-type: none"> <li>Builds a direct access ramp at N. 8th St.</li> </ul>
	City of Bellevue: NE 6th St Extension Bellevue Share	\$60*	<ul style="list-style-type: none"> <li>Extends NE 6th St. east across I-405 to 120th Ave. NE</li> </ul>
B. SR 167 Express Toll Lanes Extension - \$117 million			
<b>Benefits</b> <ul style="list-style-type: none"> <li>Benefit/Cost: 2.3</li> <li>Increases capacity over 50% and extends the reliability and traffic benefits of the SR 167 HOT lanes.</li> </ul>	Stage 4 (SB)	<b>\$82 (Funded)</b>	<ul style="list-style-type: none"> <li>Extends the existing southbound HOT lane to the King / Pierce County line.</li> </ul>
	Stage 5 (NB)	\$35	<ul style="list-style-type: none"> <li>Starts the northbound HOT lane at the King/Pierce County.</li> </ul>

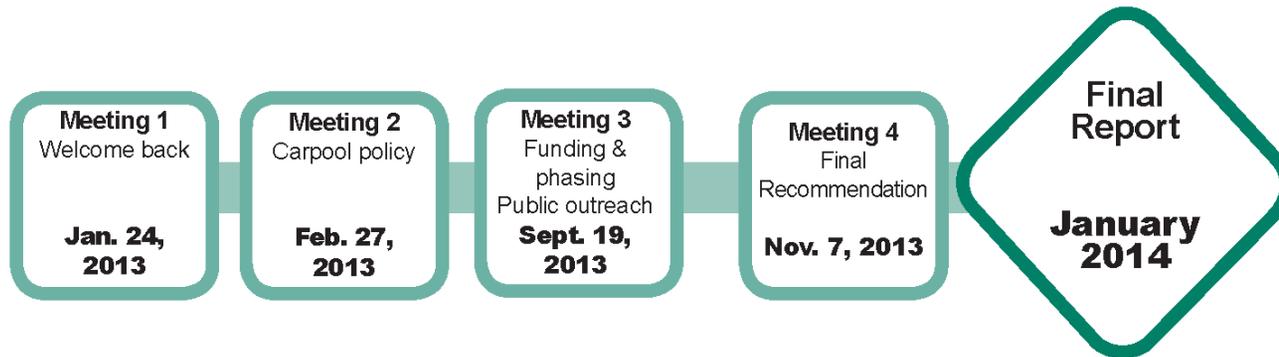
## Future I-405 Corridor priorities

C. Bothell to Lynnwood Dual Express toll Lanes - \$570 million			
<b>Benefits</b> <ul style="list-style-type: none"> <li>Benefit/Cost: 1.7</li> <li>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.</li> </ul>	SR 522 Interchange	\$315	<ul style="list-style-type: none"> <li>Builds a new direct access connection to SR 522 and redesigns a new interchange.</li> <li>Replaces the northbound I-405 bridge over the Sammamish River and SR 522.</li> </ul>
	SR 522 to I-5 Dual Express Toll Lanes	\$255	<ul style="list-style-type: none"> <li>Adds a new lane in each direction between SR 522 and I-5 in Lynnwood to be paired with the existing HOT lane to form a dual express toll lane system.</li> </ul>
D. SR 167 Stage 6 - \$300 m			
<ul style="list-style-type: none"> <li>Benefit/Cost: 2.5</li> <li>Reduces vehicle delay by 32,000 vehicles daily.</li> <li>Project connects regional facilities of SR 410, SR 512, and future SR 167 extension.</li> </ul>	SR 167 Stage 6	\$300m	<ul style="list-style-type: none"> <li>Extends the SR 167 HOT lanes northbound and southbound to SR 410 / SR 512 interchange.</li> </ul>
E. I-405/NE 132nd St. Interchange – Prior TPA project commitment			
<b>Benefits</b> <ul style="list-style-type: none"> <li>Benefit/Cost: 1.1</li> <li>Provides new access to and from north Kirkland area and complements 116th interchange which has recently been rebuilt.</li> </ul>	NE 132nd St. Interchange	\$75	<ul style="list-style-type: none"> <li>Builds a new half-diamond interchange at NE 132nd St. in Kirkland.</li> </ul>

## Projects on other corridors with direct benefits to I-405 (system to system connections)

F. I-90/I-405 Interchange Direct Connectors - \$535 million			
<b>Benefits</b> <ul style="list-style-type: none"> <li>Benefit/Cost: 1.6</li> <li>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.</li> </ul>	I-405 / I-90 Renton to Issaquah Direct Connector	\$270	<ul style="list-style-type: none"> <li>Builds a new flyover ramp between the express toll lanes on I-405 and the HOV lanes on I-90.</li> <li>The ramp would connect Renton to Issaquah.</li> </ul>
	I-405 / I-90 Bellevue to Issaquah Direct Connector	\$265	<ul style="list-style-type: none"> <li>Builds a new flyover ramp between the express toll lanes on I-405 and the HOV lanes on I-90.</li> <li>The ramp would connect Bellevue to Issaquah.</li> </ul>
G. SR 520/I-405 Interchange and SR 520/124th Ave NE Interchange - \$550 million			
<b>Benefits</b> <ul style="list-style-type: none"> <li>Benefit/Cost: 1.6</li> <li>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.</li> </ul>	SR 520 / 124th Ave NE New Interchange	\$235	<ul style="list-style-type: none"> <li>Rebuilds the SR 520/124th Ave NE interchange to Master Plan configuration</li> </ul>
	I-405 / SR 520 Direct Connectors	\$315	<ul style="list-style-type: none"> <li>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.</li> </ul>

## Next steps



- WSTC begins rate-setting process, including toll rates and exemptions
- WSDOT delivers funding and phasing report to Legislature and Governor by January 2014
- Open Bellevue to Lynnwood express toll lanes project by mid to late 2015

## More information:

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