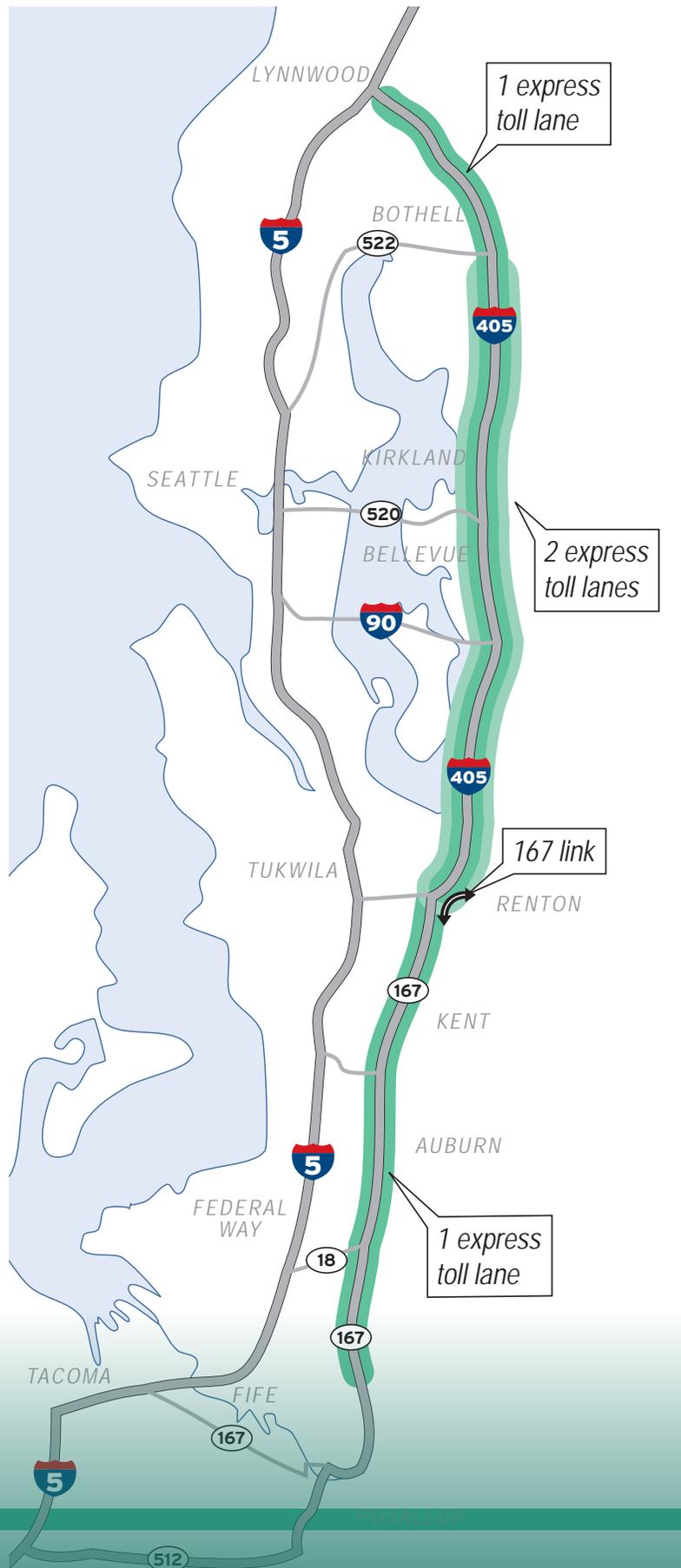


# I-405/SR 167 Corridor Funding and Phasing Report

January 2014



Washington State  
Department of Transportation



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# About this Report

The I-405/SR 167 Corridor Funding and Phasing Report summarizes WSDOT's recent analysis in preparation for implementing and operating an express toll lane system in the I-405/SR 167 corridor. This report results from requirements set by the Washington State Legislature in 2011 through RCW 47.56.886, which reads:

*(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 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 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 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.*

*(4) The transportation commission must provide the traffic and revenue analysis plan, and the department must provide the finance plan, to the governor and the legislature by January 2012. The department shall provide technical and other support as requested by the transportation commission to complete the plans identified in this subsection.*

The report was originally scheduled to be delivered to the Legislature in 2012. Because of the complexity of the necessary independent analyses, the Washington State Transportation Commission worked with the Legislature to extend the deadline. WSDOT has provided ongoing updates to the Legislature about the progress of this work. In addition, because of the significance of the carpool policy decisions under consideration, it was essential to allow the necessary time for the I-405/SR 167 Executive Advisory Group members to come to consensus on well-vetted, data-driven recommendations.

WSDOT is currently briefing the WSTC on toll rate setting policies, including carpool exemptions, based on the analysis, process and EAG recommendations documented in this report. WSTC plans to make final decisions in spring 2014.



Washington State Department  
of Transportation Secretary  
Lynn Peterson



# Funding and Phasing Report Executive Summary

January 2014

The Washington State Department of Transportation is building a 40-mile system of express toll lanes from State Route 167 in Puyallup to Interstate 405 in Lynnwood. Express toll lanes offer a needed solution to the heavy congestion that commuters experience daily, including carpool lanes that often fail to meet their performance standards during peak periods.

The Washington State Legislature authorized Phase 1, construction of express toll lanes between Bellevue and Lynnwood, through RCW 47.56.880 in 2011. This phase is currently under construction. That same legislation also required this I-405/SR 167 Funding and Phasing report, which WSDOT developed in consultation with a committee consisting of local and state elected officials from the I-405 and SR 167 corridor, known as the I-405/SR 167 Executive Advisory Group.

The work in this report is consistent with the 2002 I-405 Master Plan and more than a decade of technical analyses and collaboration with corridor stakeholders, including the I-405/SR 167 EAG. The Legislature has continued since 2005 to ask WSDOT to evaluate express toll lanes as a way of offsetting corridor improvement costs.

Throughout 2013, WSDOT re-engaged the EAG and hosted four meetings. In addition, WSDOT consulted with the I-405/SR 167 Interagency Working Group, composed of technical staff associated with each EAG member. As part of their 2013 work, WSDOT, the EAG and the IWG worked to answer the following questions, covered in this report:

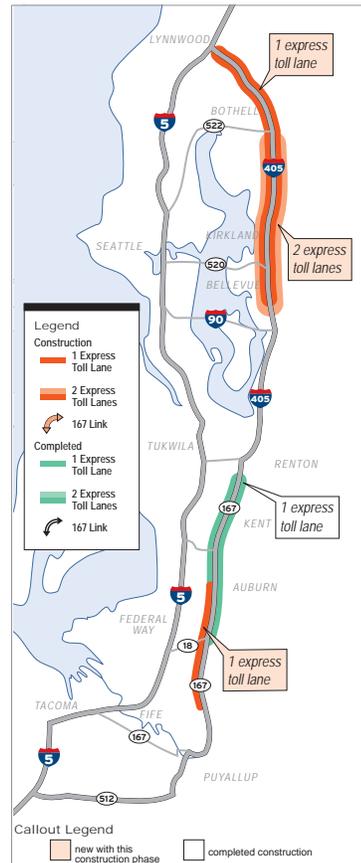
## Carpool Policy

- What is our 2+ to 3+ carpool transition plan?

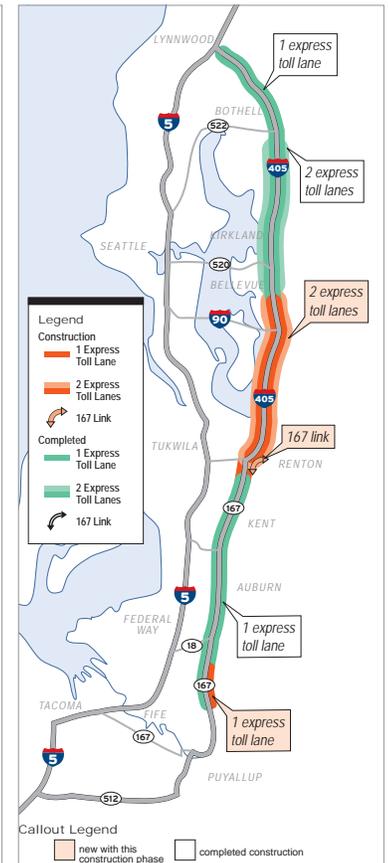
## Funding and Phasing

- What is the timing to complete the 40-mile system?
- What are the strategies for financing capital improvements for the 40-mile system?

40-mile system: Phase 1



40-mile system: Phase 2



Construction is underway on Phase 1 of the 40-mile express toll lane system to address continued heavy congestion and decreasing trip reliability in this area. This report summarizes WSDOT's evaluation of carpool policy options for Phase 1, scheduled to open to traffic in 2015. The report also covers funding and phasing options for Phase 2, which extends the express toll lanes from Bellevue into Renton and connects them to the existing SR 167 HOT lanes.

## EAG Recommendation Summary

### Carpool Policy

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

### Funding and Phasing

Medium traditional funding option (\$960 million)

# Carpool Policy: What is our 2+ to 3+ carpool transition plan?

**EAG Recommendation:** *3+ carpool free peak/2+ carpool free off-peak is a workable transition to 3+ carpool free; has least impact on commuters, transit, financial needs; and maintains speeds of 45 mph or better.*

## Carpool scenarios evaluated

WSDOT has studied I-405 express toll lanes in detail during the past five years. In previous studies, WSDOT evaluated two “bookend” scenarios:

- **2+ carpool free** – Vehicles with two or more people are exempt from tolls in the express toll lanes.
- **3+ carpool free** – Vehicles with three or more people are exempt from tolls in the express toll lanes.

When WSDOT and the EAG concluded their previous work, which national express toll lane experts confirmed in 2010, there was an understanding that a 3+ carpool free definition would be necessary to sustain free-flow speeds in the express toll lanes during peak periods. However, the EAG recognized the challenges of moving to 3+ carpool free and requested transition options.

At the EAG’s request, WSDOT in 2013 introduced two transition scenarios:

- **3+ carpool free peak/2+ carpool free off-peak** – Vehicles with three or more people would be exempt from tolls all day, two-person carpools would be exempt from tolls during off-peak periods (10 a.m. to 3 p.m. and 8 p.m. to 5 a.m.).
- **Carpool discount** – Vehicles with two or more people would receive a discount on the toll to use the express toll lanes. WSDOT evaluated a \$0.50 cent discount and a \$1.00 discount.

Although WSDOT and the EAG evaluated many factors, they gave special weight to whether the carpool scenarios would meet two performance metrics outlined by RCW 47.56.880:

- **Traffic:** Express toll lanes must maintain speeds of 45 miles per hour at least 90 percent of the time during peak periods.
- **Revenue:** Express toll lanes must pay for all related operating expenses within two years of opening.

Only three of the options studied (3+ carpool free, 3+ carpool free peak/2+ carpool free off-peak, and \$0.50 discount) meet both criteria.

WSDOT is briefing the Washington State Transportation Commission on this analysis as part of the I-405 toll rate setting process. WSTC will make the final decision on carpool exemptions for the express toll lanes.

## Executive Summary

## Legislative Direction

### RCW 47.56.880

*(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.*

# Funding and Phasing: What are the funding options for the 40-mile express toll lane system?

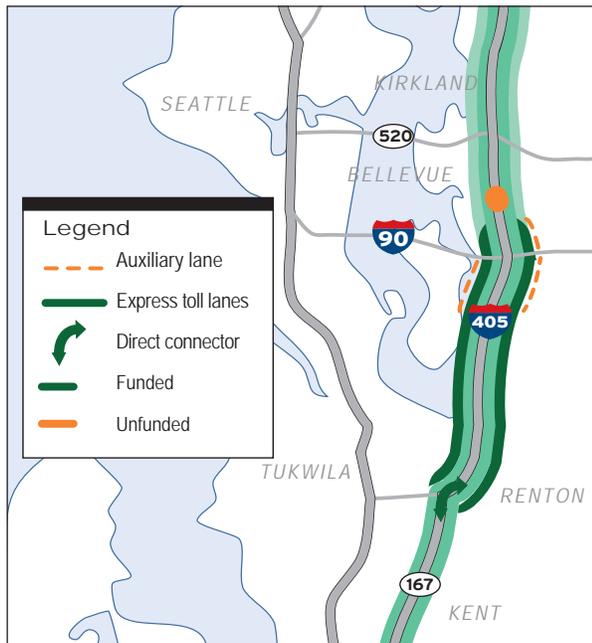
**EAG Recommendation:** *The medium traditional funding option was endorsed because it funds the Renton to Bellevue section and the I-405/SR 167 Direct Connector; Phase 2 needs to move forward as soon as possible.*

## Three funding scenarios evaluated

WSDOT considered three different options to fund the \$1,175 million needed to complete the 40-mile express toll lane system (Phase 2). As part of each of the options, WSDOT looked at two ways to close the funding gap: financing from toll revenue and pay-as-you-go.

- **High traditional funding:** Relies on gas tax or other traditional revenues for 100 percent of the project funding (\$1.175 billion).
- **Medium traditional funding:** Relies on gas tax or other traditional revenues for \$960 million of the \$1.175 billion needed. The remaining \$215 million would come from toll revenues (toll-backed general obligation bonds or pay-as-you-go).
- **Low traditional funding:** Relies on gas tax or other traditional revenues for \$675 million of the \$1.175 billion needed. The remaining \$500 million would come from toll revenues (toll-backed GO bonds or pay-as-you-go).

The EAG ultimately recommended the *medium option* and urged WSDOT to move forward as soon as possible.



### Medium Traditional Funding Option: Project Costs and Funding

<b>Costs</b>	
Renton to Bellevue	\$675 million
One lane between NE 6th Street and SR 167 (accommodates N. 8th)	
I-405/SR 167 Direct Connector	\$285 million
I-405 - 112th Ave. SE to I-90 auxiliary lanes	\$175 million
NE 6th Street Extension	\$40 million*
<b>Total Cost</b>	<b>\$1,175 million</b>

**Funding**  
**Total State Funding** **\$960 million**

**Funding gap** **\$215 million**  
 (to be supplied from tolls)

\*Assumes funding from other sources

## How has WSDOT involved the public?

Throughout 2013, WSDOT conducted public and stakeholder outreach to provide education and seek input about operating and funding express toll lanes throughout the full 40-mile I-405/SR 167 corridor.

Major outreach approaches included:

- Briefings with corridor elected officials, city councils, transit agencies, businesses and civic organizations
- Ongoing correspondence with interested citizens
- Four focus groups about carpool policy

A major express toll lanes outreach and marketing campaign associated with the Phase 1 Bellevue to Lynnwood project will launch in 2014.

## Next Steps: Completing the 40-mile express toll lane system

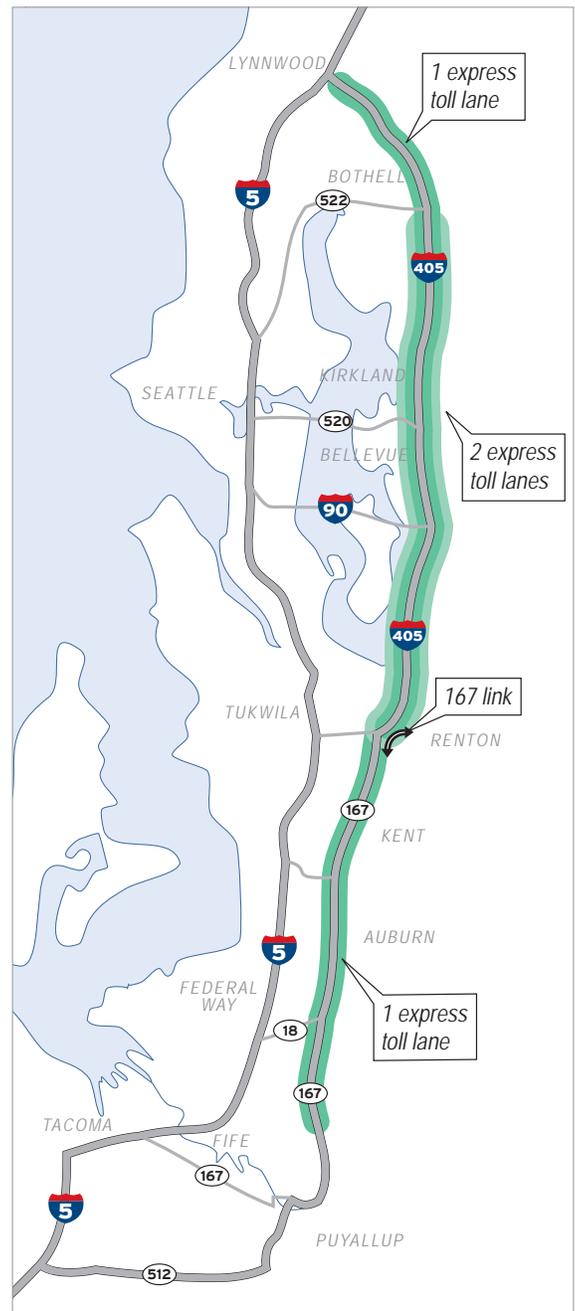
WSDOT is currently on schedule to open Phase 1 of express toll lanes between Bellevue and Lynnwood in mid to late 2015. The agency will continue to settle important policy decisions, work with the Washington State Transportation Commission on rate setting, and conduct public outreach before the new lanes open to traffic.

Meanwhile, the agency will continue to work with the Legislature and stakeholders on funding Phase 2 of express toll lanes between Renton and Bellevue, including the I-405/SR 167 Direct Connector, and for the SR 167 HOT lanes extension.

If full funding becomes available in 2014, Phase 2 could be open as early as 2020. If two years of toll collection experience from Phase 1 is necessary for bonding purposes, the project could open as early as 2022.

In the longer term, WSDOT plans to continue collaborating with corridor partners to identify and move forward with completing additional Master Plan improvements.

### Complete 40-mile system



The 40-mile system of express toll lanes, shown in this configuration endorsed by the 2010 I-405/SR 167 Executive Advisory Group, would extend from I-5 in Lynnwood to SR 167 in Puyallup.



# Chapter 1 Project Overview

## I-405/SR 167 Corridor

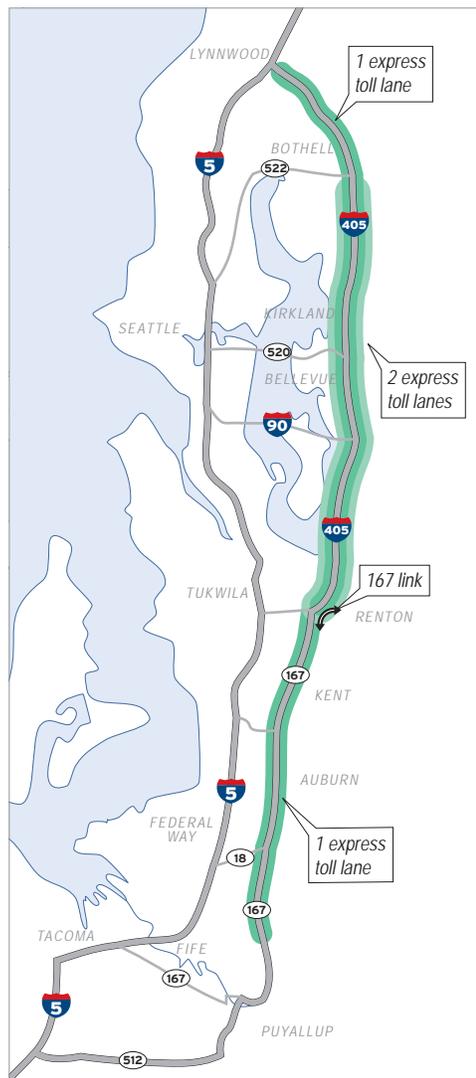


Figure 1: WSDOT has a plan for a system of express toll lanes on the 40-mile I-405/SR 167 corridor, which stretches from Lynnwood in the north to the King-Pierce County line in the south.

## What is the purpose of this report?

This report, required by RCW 47.56.886, summarizes the Washington State Department of Transportation’s recent analysis in preparation for implementing and operating an express toll lane system in the Interstate 405/State Route 167 corridor, as shown in Figure 1.

The report describes analysis for key policy decisions related to Phase 1 of express toll lanes between Bellevue and Lynnwood, including recommendations for a carpool scenario that will meet traffic performance and revenue requirements set by the Washington State Legislature for the I-405 express toll lanes. The report also includes a detailed analysis of methods for funding and phasing related to Phase 2 of express toll lanes on the I-405/SR 167 corridor, specifically for the area between Renton and Bellevue.

## Whom did WSDOT consult to develop these findings?

As part of their traffic, revenue and financing analyses, WSDOT consulted with the I-405/SR 167 Executive Advisory Group, 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, as well as representatives from the Federal Highway Administration, Federal Transit Administration and Washington State Transportation Commission. In addition to holding four 2013 meetings with the EAG, as shown in Figure 2, WSDOT organized briefing sessions with a corridor Interagency Working Group, composed of technical staff associated with EAG members.

## 2013 EAG Meeting Schedule



Figure 2: WSDOT held four meetings with the I-405/SR 167 Executive Advisory Group leading up to this report.

# Introduction to the Corridor

The I-405/SR 167 corridor, sometimes referred to as the Eastside Corridor, is one of Washington state’s most important roadway networks for people, businesses and freight. These highways, when combined with State Route 512, form the only limited access north-south alternative to Interstate 5 for travel between Lakewood in Pierce County and Lynnwood in Snohomish County.

Currently, the I-405/SR 167 corridor serves an estimated 950,000 vehicle trips per day, according to WSDOT loop data and occupancy counts. The Puget Sound Regional Council predicts that these volumes will increase to about 1.5 million vehicle trips per day in 2030. This corridor makes a substantial economic impact on the state, hosting major companies such as Microsoft, Google, Costco, Boeing, and Paccar, as well as major regional retail destinations in Auburn, Kent, Tukwila, Renton, Bellevue, and Lynnwood.

This corridor also ranks as one of the state’s most heavily traveled and congested roadway networks. Commuters currently encounter heavy traffic and delays for up to eight hours each day. With regional growth projected to increase by approximately 1 million people and 700,000 jobs during the next 20 years, according to PSRC, the corridor faces increasingly congested traffic conditions that demand effective solutions.

According to WSDOT’s 2013 Corridor Capacity Summary, the amount of delay for the average I-405 commuter increased by 14 percent from 2010 to 2012. In I-405’s most congested section between Tukwila and Bellevue, morning commute times increased by up to 11 minutes in this 13-mile area during the same period.

To respond to these challenges, the Washington State Department of Transportation has progressed steadily on building improvements identified by the 2002 I-405 Master Plan. Through the first phase of funding, WSDOT has delivered 13 projects along the length of the corridor, as shown in Figure 3. The overall program has tackled congestion by addressing key chokepoints as well as improving safety and creating regional jobs.

## More than 10 years of project delivery

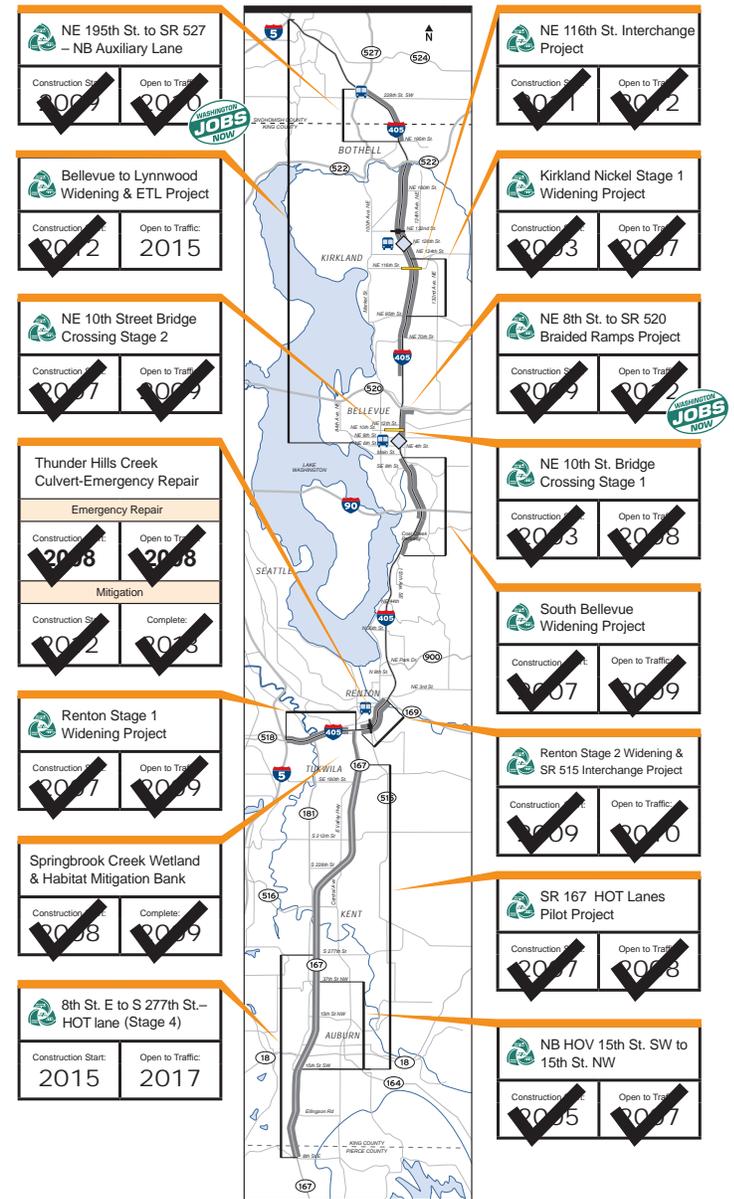


Figure 3: The I-405/SR 167 team has completed 13 projects along the corridor since adopting the 2002 Master Plan.

A key component of this Master Plan is operating a system of priced managed lanes—also known as high occupancy toll (HOT) lanes or express toll lanes—that will ultimately extend 40 miles from the I-5/I-405 interchange in Lynnwood to SR 167 at the Pierce-King County Line. This strategy responds to the challenging situation faced by I-405 carpool lanes, which have lost their effectiveness during peak travel times because of increased demand, resulting in reduced benefits for carpoolers, vanpoolers and transit users. Through dynamic pricing for the express toll lanes, WSDOT is better able to manage demand in these lanes to provide drivers a reliable trip.

## What projects does this report cover?

This report outlines strategies for a phased approach to completing a 40-mile system of express toll lanes from SR 167 at the Pierce/King County line to the I-405/I-5 interchange in Lynnwood, as shown in Figure 4. The I-405/SR 167 EAG endorsed this 40-mile plan in 2010 after careful evaluation of five different study options.

As endorsed by the EAG in 2010 and subsequently authorized by the Legislature in 2011 (RCW 47.56.880), WSDOT is currently moving forward with Phase 1, which builds express toll lanes between NE 6th Street in Bellevue and I-5 in Lynnwood and is scheduled to open in 2015. Chapter 2 of this report describes policy decisions related to Phase 1, including a new carpool policy, which is important to Phase 1 operations and Phase 2 funding.

WSDOT continues to explore strategies to implement Phase 2, which would extend the express toll lane network between Bellevue and Renton, build the I-405/SR 167 Interchange Direct Connector to connect the I-405 express toll lanes with the SR 167 HOT lanes, and extend these HOT lanes to the King-Pierce County line. Chapter 3 of this report describes potential strategies for funding his next phase of express toll lanes.

### Why build express toll lanes?

*The region's general purpose lanes, and most of its carpool lanes, are already congested during peak periods, and those peak periods are becoming longer all the time. Priced managed lanes, also called high occupancy toll (HOT) lanes and express toll lanes, provide a way to operate highways more efficiently and manage traffic demand with more commute choices.*

*WSDOT introduced managed lanes to the state through the SR 167 HOT Lanes Pilot Project in 2008. These lanes provide the sustainable, long-term solution to congestion relief that commuters and businesses have come to rely on, while simultaneously providing a revenue source to maintain roadways.*

*More information about express toll lanes is available at: [www.wsdot.wa.gov/tolling/EastsideCorridor](http://www.wsdot.wa.gov/tolling/EastsideCorridor)*

Now in their fifth year of operations, the SR 167 HOT lanes have delivered improved travel speeds and are covering their costs.



## What projects are funded?

### Phase 1: Bellevue to Lynnwood Widening and Express Toll Lanes

The I-405 NE 6th Street to I-5 Widening and Express Toll Lanes project, currently under construction, will add one continuous northbound and southbound lane between NE 6th Street in Bellevue and SR 522 in Bothell. This new lane, when combined with the existing carpool lane, will operate as a dual express toll lane system from downtown Bellevue to Bothell/Woodinville. In addition, the existing carpool lane from SR 522 to I-5 will be converted to a single express toll lane.

The project is fully funded by the 2003 and 2005 gas taxes, and the State Legislature authorized tolling in 2011 through RCW 47.56.880. WSDOT awarded this design-build project for construction in February 2012. The new lanes are scheduled to open in mid to late 2015.

### SR 167 HOT Lane Extension, Stage 4

Phase 1 also includes \$82 million in funding for Stage 4 of the SR 167 HOT lanes project, which would extend the existing southbound SR 167 express toll lanes to the King/Pierce County line.

This project will begin construction in 2014 and is scheduled to open in late 2016 (FY 2017).

Figure 4 illustrates the project limits for both Phase 1 projects.

## 40-mile system: Phase 1

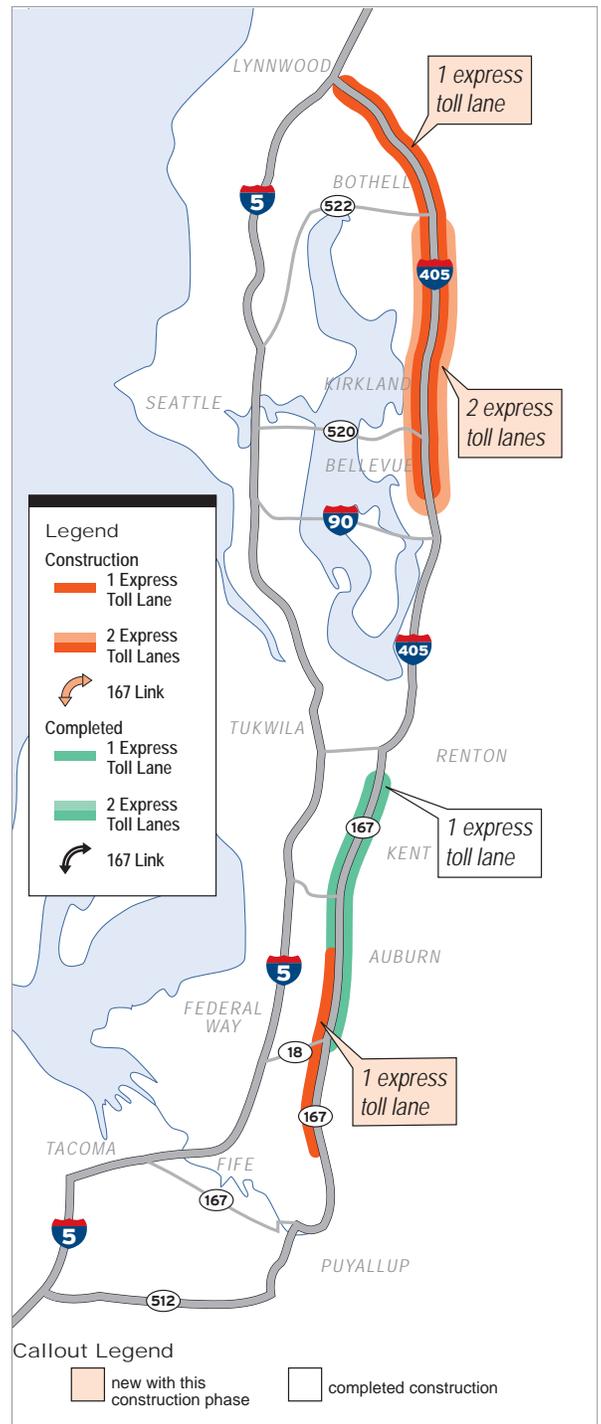


Figure 4: Construction is underway for Phase 1 of express toll lanes between Bellevue and Lynnwood (top), and preliminary engineering has begun for Stage 4 of the SR 167 HOT lane extension (bottom).

## 40-mile system: Phase 2

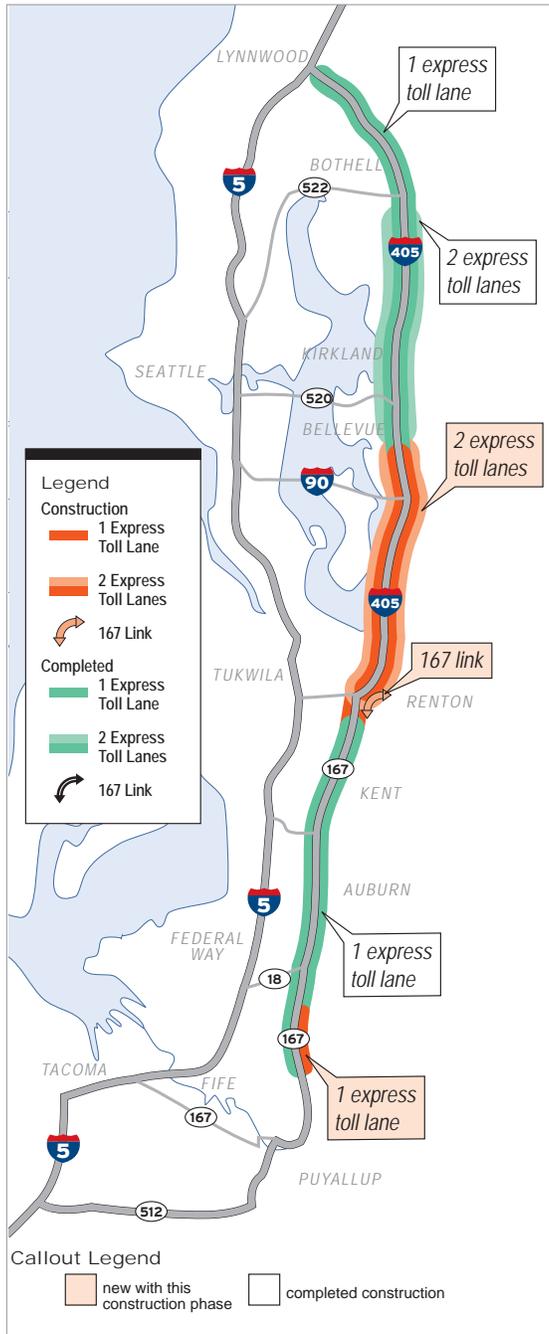


Figure 5: WSDOT is seeking funding to complete the 40-mile express toll lanes system on I-405 between Renton and Bellevue (middle) and on the far south end of northbound SR 167 at the King-Pierce County line.

## What is the next phase of express toll lanes on I-405 and SR 167?

### Phase 2: Renton to Bellevue Widening and Express Toll Lanes and the I-405/SR 167 Direct Connector

The proposed, unfunded Phase 2 includes the critical direct connector at the I-405/SR 167 interchange and the Renton to Bellevue express toll lanes project, as shown in Figure 5. This project currently has a total funding need of \$1,175 million. If full funding was made available in 2014, Phase 2 could be open as early as 2020. If two years of toll collection experience from Phase 1 is desired, the project could open as early as 2022.

The Renton to Bellevue Widening and Express Toll Lanes Project would add a new lane in each direction and pair the new lane with the existing carpool lane to create a two-lane express toll lane system in each direction between Northeast 6th Street in Bellevue and SR 169 in Renton. This project would also add auxiliary lanes near the I-90/I-405 interchange and fund a portion of the Northeast 6th Street extension in downtown Bellevue (eastward across I-405) to further enhance traffic operations. The total cost for this project is \$890 million.

The I-405/SR 167 Direct Connector project would add new flyover ramps to connect the SR 167 HOT lanes with the future I-405 express toll lanes. This project is critical to extend the benefits of the SR 167 HOT lanes, as well as connect and upgrade the system to operate as a robust 40-mile-long express toll lanes system.



The Direct Connector's new flyover ramps (visualization above) will connect the future I-405 express toll lanes with the SR 167 HOT lanes, improving traffic flow and safety at this interchange.

The Direct Connector already has \$40 million for preliminary engineering and right-of-way acquisition and could be ready for construction as early as January 2015. However, the project still requires \$285 million in construction funding for a total cost of \$325 million. In 2010 WSDOT estimated the project's costs at \$490 million but has since reduced this estimate by re-engineering. The Master Plan build-out of the Direct Connector involves four levels of ramps. Using practical design principles, WSDOT moved the Direct Connector from the third level of ramps to the second level, requiring fewer walls and a shorter bridge. This approach did not change the interchange functionality but reduced costs for the next phase.

Chapter 3 of this report provides more detail on funding and phasing the second phase of express toll lanes.

### ***SR 167 HOT Lane Extension, Stage 5***

Phase 2 also includes SR 167 Stage 5, which would extend the existing northbound High Occupancy Toll (HOT) lane so that it starts at the King/Pierce County line, similar to the southbound direction. This project is currently unfunded and requires \$35 million for preliminary engineering, right-of-way acquisition and construction.

## **Express Toll Lanes Study History**

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WSDOT's I-405 project team has evaluated the merits of a priced managed lane system along the I-405 corridor since 2001. All of the studies have concluded that priced managed lanes benefit traffic operations and generate revenue.

Over the years, WSDOT has examined a range of transportation options to address the projected increase in population and employment along this corridor. Beginning in 1998, WSDOT collaborated with a variety of project partners, including local and federal agencies, 13 cities, and two counties, to develop an inclusive and balanced corridor master plan. The product of this process, the I-405 Master Plan, outlines a long-term multimodal vision.

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### **I-405 Master Plan Vision**

- Adding two lanes in each direction on I-405.
  - Making improvements to local arterials.
  - Improving transit facilities and carpool lanes.
  - Adding a bus rapid transit (BRT) system and nine new transit centers.
  - Increasing transit service by 50 percent.
  - Building carpool direct access ramps and flyer stops.
  - Adding 5,000 new Park & Ride spaces and 1,700 new vanpools.
  - Enhancing the environment.
  - Investigating the implementation of a priced managed lanes system.
-

## Early Studies

The early I-405 corridor studies analyzed the preferred alternative, generally a five-lane section with one or two carpool lanes or priced managed lanes. This study envisioned a 3+ carpool occupancy requirement for toll-free travel.

The findings, which were presented to the I-405 technical and executive committees in 2002, showed that managed lanes provide improved overall corridor travel speeds. As a result, managed lanes were recommended for inclusion as an operational option. From this early analysis in 2001 and 2002, the I-405 Corridor Environmental Impact Statement recommended that priced managed lanes be further evaluated on I-405.

Subsequent studies between 2003 and 2009 evaluated the merits of both single and dual (two) managed-lane systems, as well as both 2+ and 3+ carpool requirements for a toll-free trip on the north end of the corridor. These analyses concluded that a dual system of priced managed lanes is superior to a single lane, and that a 3+ carpool definition is the optimal long-term solution.

## Recent Studies

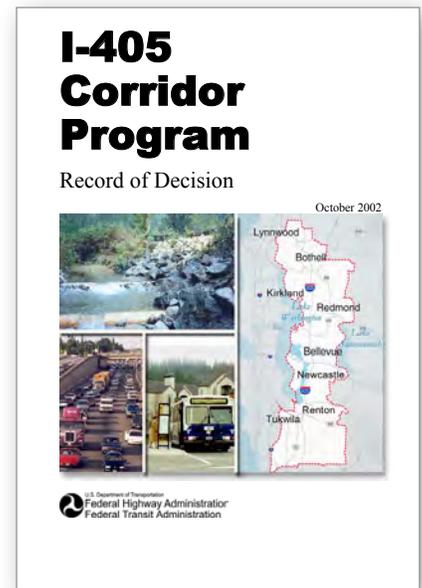
### *Eastside Corridor Tolling Study*

Published January 2010

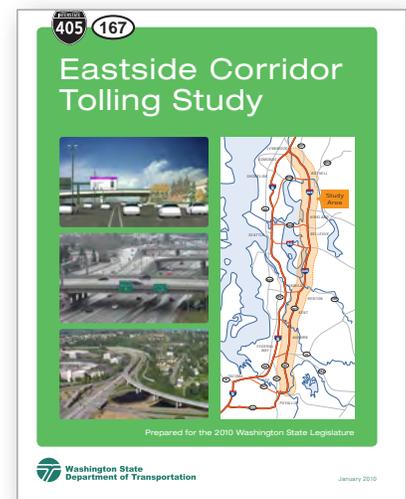
In 2009, the state Legislature requested a traffic and revenue study, including potential funding for future improvements and express toll lanes on I-405. WSDOT's Eastside Corridor Tolling Study final report in January 2010 reviewed five study options that included incremental improvements to complete a dual I-405 express toll lane system, connected to a single SR 167 express toll lane system. This study analyzed a 3+ carpool designation for toll-free use of express toll lanes with a 2+ carpool sensitivity analysis.

Major findings included:

- Traffic performance (the number of vehicles and people moving at free-flowing speeds of 45 mph to 60 mph in all lanes) improves as the express toll lane system becomes more complete.
- Express toll lanes allow for more efficient use of all lanes (better long-term, reliable traffic performance), when compared with only adding general purpose lanes.
- A 2+ carpool free designation significantly increases toll rates due to less space available for those who wish to pay a toll to use the express toll lanes.
- Setting a maximum toll cap, and/or using a 2+ carpool free designation, will reduce toll revenue collections into the future.
- The 2+ carpool free designation did not provide traffic performance benefits, particularly in the single lane portion of the express toll lanes system.



The I-405 Corridor Program Record of Decision serves as the corridor's master plan.



The Eastside Corridor Tolling Study, prepared for the state Legislature, supports moving forward with express toll lanes on I-405.

## Guiding Principles: I-405/SR 167 Executive Advisory Group

During its 2009 meetings, the I-405/SR 167 Executive Advisory group adopted the following principles in support of the Eastside Corridor express toll lane vision.

### 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.
6. Spotlight capacity and 2+ HOV versus 3+ HOV.

### 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.

The 2009 I-405/SR 167 Executive Advisory Group, convened as part of this study process, supported moving forward with Study Option 4, which constructs a 40+ mile express toll lane system from the King/Pierce County line on SR 167 to Lynnwood at the I-405/I-5 interchange. This option includes a two-lane express toll lane system on I-405 between the I-405/SR 167 and SR 522 interchanges. Figure 6 shows the plan, as well as the EAG members throughout the corridor and region who approved it.

The EAG also recommended beginning right away with the funded projects in the north end of the I-405/SR 167 Corridor to allow WSDOT to gain traffic and revenue experience with express toll lanes, thereby lowering perceived risks and the cost of financing future express toll lane projects that use toll revenues.

## Regional Support for 40-mile express toll lane system

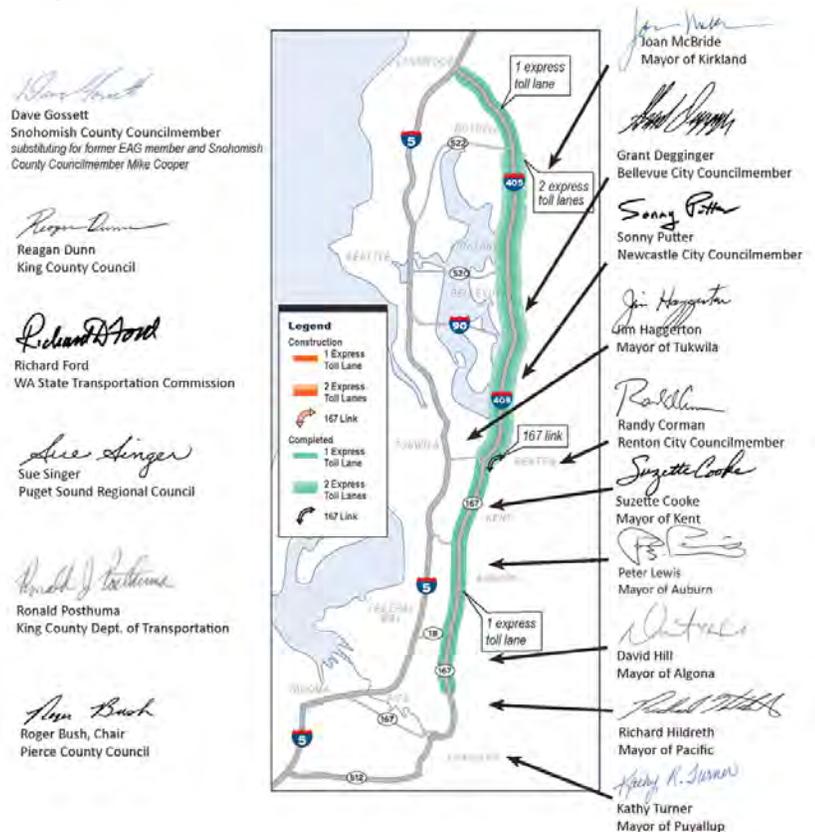


Figure 6: WSDOT's plan for I-405 express toll lanes drew broad regional support.

## Expert Review Panel Study

Published December 2010

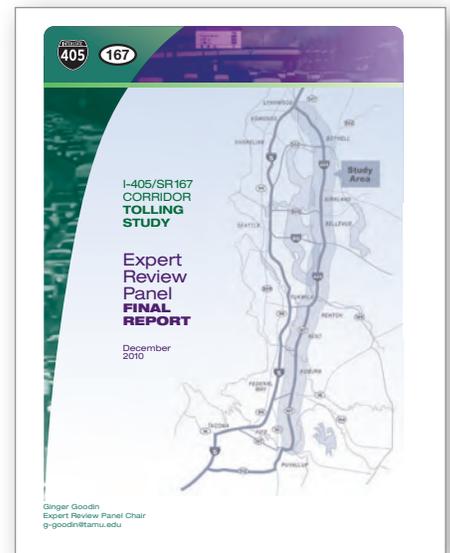
As questions arose after the January 2010 traffic and revenue study, the Secretary of Transportation directed WSDOT to consult an independent Expert Review Panel to provide a neutral perspective on the findings. The panel included national experts from academia, transportation policy and planning, and finance. The panel issued its final report in December 2010.

The ERP found that a corridor-wide express toll lanes system will keep the I-405/SR 167 vision moving forward and is a viable implementation strategy for the corridor Master Plan. They found the express toll lanes to be aligned with federal, regional and state policies on tolling, carpooling and livability. The panel confirmed the validity of the previous traffic and revenue analysis, agreed with moving forward on Option 4 (40+ mile express toll lane system), and made a series of recommendations to help assure successful completion of the project and generate the expected benefits in a timely manner.

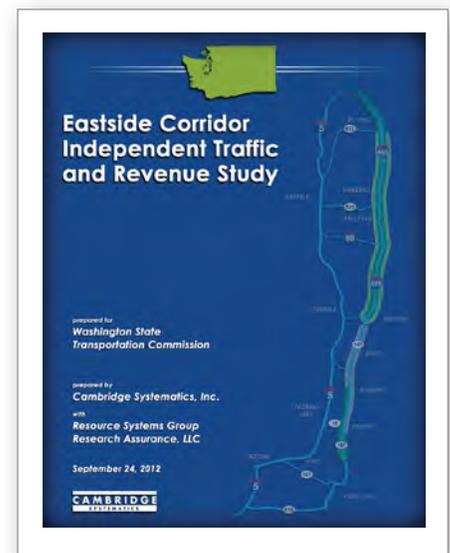
## Washington State Transportation Commission Independent Study

Published September 2012

In RCW 47.56.886, the Legislature directed the Washington State Transportation Commission to conduct an independent traffic and revenue analysis for the development of a 40-mile system of express toll lanes on I-405 and SR 167. WSTC hired Cambridge Systematics to complete this analysis. Although the WSTC report's traffic and revenue methodology differed from WSDOT's previous Eastside Corridor Tolling Study, the WSTC report confirmed that express toll lanes provide drivers a choice for a more reliable trip when needed. The WSTC report also forecast toll revenues that fell within the range of WSDOT's 2009 findings, as illustrated in Figure 8.



The Expert Review Panel study confirmed that express toll lanes are a viable strategy for the I-405/SR 167 corridor.



The Legislature directed the Washington State Transportation Commission to complete an independent traffic and revenue study of I-405 express toll lanes.

## Most recent study updates

In 2012 and 2013, WSDOT revised its 2009 study results to provide an updated data set for future work and to reflect similar inputs as the WSTC study, which allows a closer comparison of the findings. Figure 7 shows the updates in inputs for each of the three studies.

The latest results took into account updated Puget Sound regional forecasts, willingness to pay information, minimum toll rates, forecast years, and project opening years. The WSDOT analysis reflects WSDOT’s policy to use photo tolling (explained in more depth in Chapter 2) to offer driver consistency with the SR 520 bridge.

WSDOT’s newest updated results for the 3+ carpool definition fell within the range of the WSTC independent study results, as shown in Figure 8.

### Comparison of WSTC and WSDOT Study Methodology and Inputs

Model Input	2009 WSDOT	2012 WSTC	2012 WSDOT
Willingness to pay	2006 data	2011 data	2011 data
Minimum toll	\$1.00	\$0.75	\$0.75
Forecast years	2020, 2035, 2040	2015, 2018, 2030	2015, 2018, 2030
Project opening date	2015 (entire corridor)	2014 (north end); 2018 (south end)	2014 (north end); 2018 (south end)
Ramp-up period	2-year ramp up	3-4 year ramp up	3-year ramp up
Photo tolling	No photo tolling	No photo tolling	Photo tolling

Figure 7: The 2009 WSDOT and 2012 WSTC studies used different methodology and inputs for their traffic and revenue modeling, but both assumed that WSDOT would not be using photo tolling for the I-405 express toll lanes. WSDOT’s updated 2012 analysis used similar inputs to WSTC except it included the photo tolling policy assumption.

### Comparison of WSTC and WSDOT Revenue Forecasts for 3+ Carpool Free Scenario

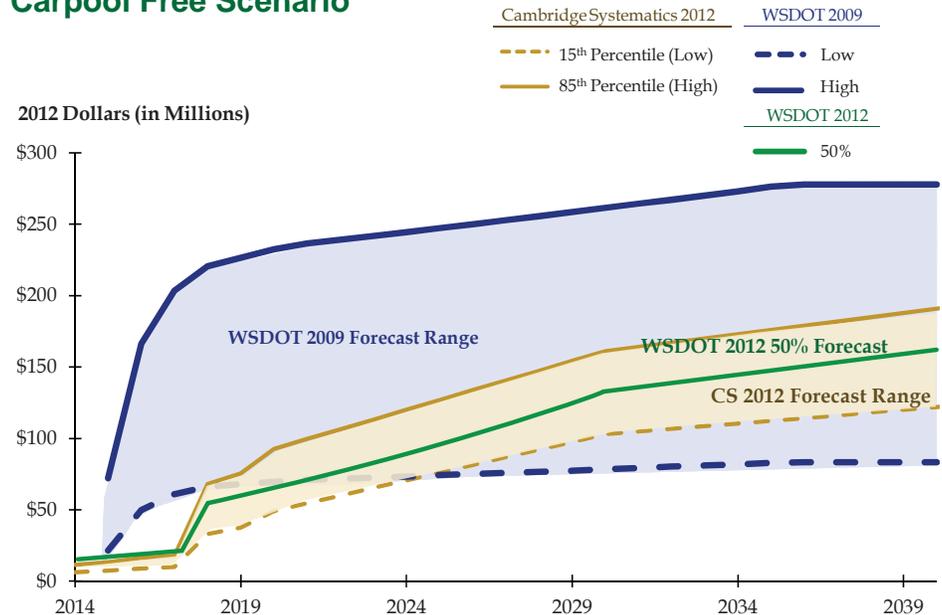


Figure 8: The chart above demonstrates that WSDOT’s 2009 (purple lines and shading) and updated 2012 (green line) revenue forecasts for a 3+ carpool definition in the express toll lanes are consistent with the range (tan lines and shading) found by WSTC’s independent consultant, Cambridge Systematics.



# Chapter 2

## Carpool Policy

### Legislative Direction

RCW 47.56.880

*(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 changes 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 expenses;*
- (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.*

### What are the legislative requirements of Phase 1?

In 2011, the state Legislature in RCW 47.56.880 confirmed the selection of study option 4 (building a 40+ mile express toll lane system) as the direction for future improvements in the I-405 corridor. The legislation authorized WSDOT to construct a dual express toll lane system between NE 6th Street in Bellevue and SR 522 in Bothell, and to convert the carpool lane between SR 522 and I-5 in Lynnwood to a single express toll lane.

RCW 47.56.880 establishes several key performance metrics for the Bellevue to Lynnwood section of the express toll lanes, including:

- **Traffic:** Express toll lanes must maintain speeds of 45 miles per hour at least 90 percent of the time during peak periods.
- **Revenue:** Express toll lanes must pay for all related operating expenses within two years of opening.

If the lanes do not meet these performance requirements within two years, the legislation calls for terminating the project.

In order to meet these legislative requirements, WSDOT must carefully consider the volume of free trips. A final decision on the carpool definition is the key to determining the volume of free trips, which in turn allows WSDOT to manage traffic performance and generate revenue for future corridor improvements.

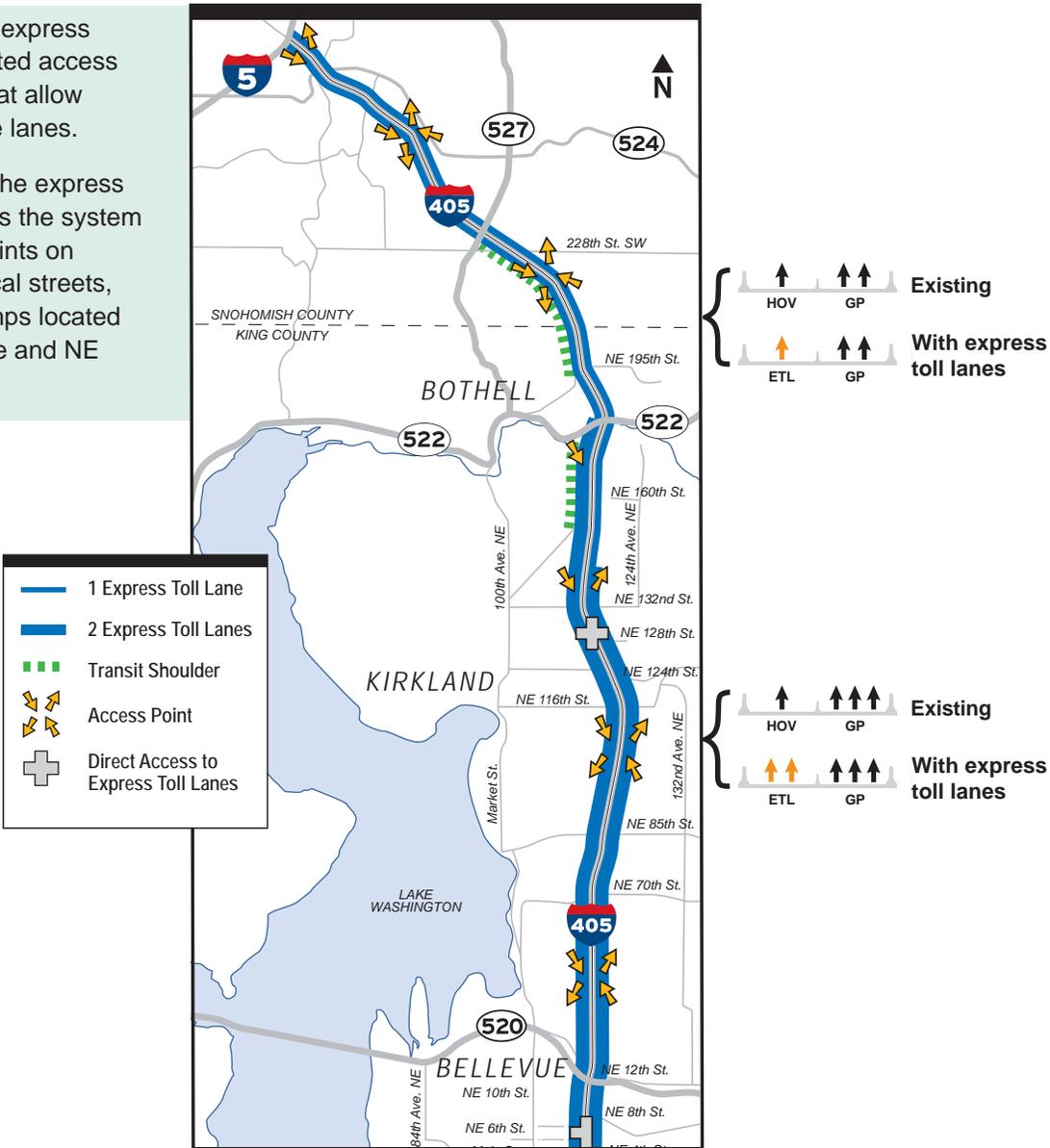
## How will the express toll lanes operate?

WSDOT has already made a number of operational decisions for the I-405 express toll lanes between Bellevue and Lynnwood, as described on the next page. Prior to opening the I-405 Bellevue to Lynnwood project in 2015, WSDOT will need to finalize a number of other policy decisions, as described in Chapter 5.

### Bellevue to Lynnwood Project Area

The Bellevue to Lynnwood express toll lanes will have designated access points along the corridor that allow drivers to enter and exit the lanes.

Travelers choosing to use the express toll lane system may access the system from designated access points on mainline I-405 and from local streets, using the direct access ramps located at NE 6th Street in Bellevue and NE 128th Street in Kirkland.



## What is the basic concept of operations?

### Number of express toll lanes

*Dual lane section:* WSDOT will add one new express toll lane in both directions between Northeast 6th Street in downtown Bellevue and SR 522 in Bothell, and convert the existing carpool lane in this area to an express toll lane. Together, these lanes will operate as a dual express toll lane system.

*Single-lane section:* Between SR 522 in Bothell and I-5 in Lynnwood, WSDOT will convert the existing carpool lane to a single express toll lane in both directions.

### Dynamic toll rates

Toll rates will rise and fall based on current traffic speeds and volumes in the express toll lanes to ensure traffic in these lanes flows freely. Embedded traffic sensors will collect data used by the pricing algorithm that calculates the toll rate, similar to the SR 167 HOT lanes.

### Access points

Drivers will access the express toll lanes from limited locations. Drivers will enter and exit the express toll lanes using both direct-access connections to local roads and access points from mainline I-405 that allow merging between express toll lanes and general purpose lanes.

### Buffer zone

Clear, visible separation between express toll lanes and general purpose lanes is necessary to prevent erratic lane changes in and out of the system and to facilitate higher speeds. A buffer zone, marked by solid white stripes, will divide the express toll lane from the general purpose lanes. The standard width of the buffer will be four feet, with a minimum width of two feet. This approach will create a facility that operates independently from the general purpose lane congestion by discouraging lane changes between the two facilities.

### Destination-based pricing

Tolls will be priced by the distance of travel based on three toll zones. Drivers will be charged a price for travel based on where they enter and exit the express toll lanes.



Toll collection for the express toll lanes will be all electronic. Drivers choosing to use the express toll lanes should open a *Good To Go!* account. Those without an account will be billed at a higher Pay By Mail rate.

Road signs will display up to three toll rates based on destinations. Today, the SR 167 HOT lanes are priced the same whether drivers travel one mile or the entire length of the system. I-405's three toll zones will allow for better congestion management.

### Photo tolling/Pay by mail

In order to promote a consistent customer experience with the SR 520 bridge, which offers Pay By Mail and Pay By Plate, WSDOT has chosen to offer both of these payment options for the I-405 express toll lanes. Pay By Mail will allow customers without a *Good to Go!* pass to be identified by their license plate and mailed a toll bill with a premium rate to cover the additional processing costs. Drivers that qualify for a free trip as a carpool will be required to register or have a new transponder that declares their eligibility for a free trip.

### All-electronic tolling without toll booths

All tolls will be collected electronically, either directly from customers with prepaid *Good to Go!* accounts, or via photo tolling in which customers receive a bill in the mail.

### Enforcement

Washington State Patrol will perform on-site enforcement of express toll lanes by visually identifying violators of the carpool requirements and directing them to a safe pullover location for further investigation and, if appropriate, a traffic citation. A light at each toll point will indicate to troopers if a carpool is registered, so that they can verify vehicle occupancy.

# Carpool Policy Study Scenarios

The 2009 Eastside Corridor Tolling Study evaluated two scenarios: 2+ carpools travel toll-free and 3+ carpools travel toll-free. During that study process, the I-405/SR 167 Executive Advisory Group recognized that a move to a 3+ carpool policy would eventually need to occur in order to improve traffic performance on the corridor. However, this group of local leaders also asked WSDOT to consider transition options that could ease the public's shift from the current 2+ carpool policy to a new 3+ carpool policy.

Since Phase 1 construction began in 2012, WSDOT has continued to work closely with the I-405/SR 167 EAG to gather input on carpool policy decisions for the 40-mile express toll lanes system. WSDOT held four EAG meetings and three Interagency Working Group meetings, as well as a multitude of other staff and council briefings, in 2013.

Chapter 4 provides more details on the EAG meetings and the public outreach process.

As a result of feedback from the EAG on the need for transitional carpool options, WSDOT and WSTC's independent consultant conducted additional study on four basic options in 2012 and 2013. The methodology of these studies varied, as described in the previous chapter. Notably, the WSTC study did not assume a photo tolling policy in their analysis.

The most recent analyses considered the two "book-end" scenarios (2+ carpool free and 3+ carpool free) as well as two transition options: carpool discount (\$1.00 and \$0.50) and 3+ carpools ride free at peak periods, 2+ carpools ride free at off-peak periods. Additional sensitivity analyses occurred from those transition options.

## Carpool Scenarios

### Scenario A

#### 2+ carpool free

The 2+ carpool free policy would maintain the existing policy in effect for the I-405 carpool lanes, allowing vehicles with two or more occupants to use the express toll lane system without paying a toll. The SR 167 HOT lanes currently have this policy.

*How was this option studied?*

- WSDOT/CDM Smith analyzed this option with both photo tolling and transponders and transponders only.
- WSTC/Cambridge Systematics analyzed this option with transponders only.

### Scenario B and B-2

#### Carpool discount (\$1.00 and \$0.50)

This analysis considered two versions of the carpool discount, which aims to incentivize carpooling. The original carpool discount scenario analysis did not consider the effects of photo tolling because that policy decision had not yet occurred. Under that original scenario, all carpools with two or more occupants would receive a \$1.00 discount from the current toll rate. Because the minimum toll was assumed to be \$0.75, at some times of the day carpools would travel for free. During the peak periods, when the toll rate rises above the discount amount, eligible carpools would pay the lower rate.

#### Sample toll rate signs

*Scenario B - \$1.00 carpool discount*

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

*Scenario B-2 - \$0.50 carpool discount*

EXPRESS TOLL LANES	
	\$2.00
NE 124 <sup>th</sup> ST	\$2.15
NE 6 <sup>th</sup> ST	\$2.35
Carpool \$0.50 discount	

However, as will be discussed later in this section, the \$1.00 discount did not meet the net revenue performance requirement set by the Legislature and would likely still not meet this requirement even if photo tolling were included in the analysis. Because there was still interest in this option, WSDOT developed new analysis using a \$0.50 discount and assuming photo tolling. By contrast, the \$0.50 discount with photo tolling does meet the net revenue requirements. However, under this option, carpools would not be given a free trip, because the discount would be less than the minimum toll, assumed at \$0.75.

*How was this option studied?*

- WSDOT/CDM Smith analyzed this option with transponders only (no photo tolling) for the \$1.00 discount (Scenario B), and with photo tolling and transponders for the \$0.50 discount (Scenario B-2).
- WSTC/Cambridge Systematics analyzed this option with transponders only (no photo tolling) for the \$1.00 discount only.

### Scenario C

**3+ carpool free at peak periods**  
**2+ carpool free at off-peak periods**

Under this scenario, the occupancy level required for a toll exemption varies by time of day in order to retain some benefits for two-person carpools while still maintaining free-flow conditions in the express toll lanes. This analysis assumed the peak periods to be 5 a.m. to 10 a.m. and 3 p.m. to 8 p.m. for toll-free travel with vehicles carrying three or more occupants. Between 10 a.m. and 3 p.m., vehicles with two or more people would travel for free.

*How was this option studied?*

- WSDOT/CDM Smith analyzed this options with photo tolling and transponders (Scenario C), and transponders only (no photo tolling).
- WSTC/Cambridge Systematics analyzed this option with transponders only (no photo tolling).

### Scenario D (E, F - no photo)

**3+ carpool free**

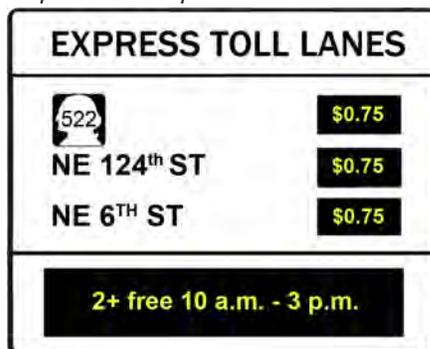
The 3+ carpool free scenario exempts vehicles with three or more people from paying a toll to use the express toll lanes at all times.

*How was this option studied?*

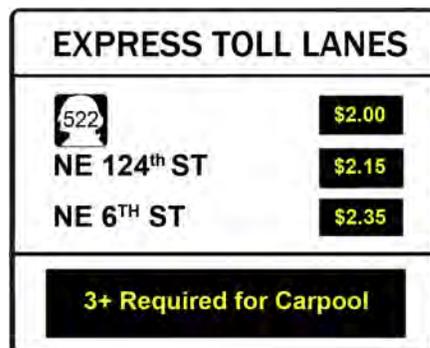
- WSDOT/CDM Smith analyzed this option with photo tolling and transponders (Scenario D), and transponders only (no photo tolling) (Scenario E).
- WSTC/Cambridge Systematics analyzed this option, known in this report as Scenario F, with transponders only (no photo tolling).

### Sample toll rate signs

*Scenario C - 3+ carpool free peak/2+ carpool free off-peak*



*Scenario D (E, F - no photo) - 3+ carpool free*



## What factors did WSDOT consider when reviewing the carpool scenarios?

In their evaluation of the carpool scenarios, WSDOT considered several different factors, both quantitative and qualitative.

### *Quantitative factors*

#### **Traffic performance**

This metric is especially important because of the legislative requirements (both at the state and federal levels) that the express toll lanes operate at 45 miles per hour, 90 percent of the time during peak periods. The next sections describe this analysis in greater detail.

#### **Initial net revenue**

Net revenue refers to the amount of revenue generated from tolling after subtracting operating and maintenance costs. This metric is also important because of the legislative requirement that Phase 1 of I-405 express toll lanes between Bellevue and Lynnwood cover their operating costs within two years of opening. The next sections describe this analysis in greater detail.

#### **Toll rates/pricing**

WSDOT considered how each of the carpool scenarios would affect the amount of toll rates required for paying express toll lane customers.

### *Qualitative factors*

#### **Public acceptance**

WSDOT used focus groups in 2013 and previous surveys to assess the level of acceptance for each of the carpool scenarios. Most focus group participants understood that the carpool lanes are not functioning properly today but resisted the idea of changing to a 3+ system because they wanted to retain some benefits for 2+ carpools. Chapter 4 provides more detail on the focus group findings.

#### **Usability**

WSDOT considered how user-friendly and understandable each of the carpool scenarios would be for the general public.

#### **Enforcement**

WSDOT considered the level of difficulty for the Washington State Patrol to enforce each of the carpool scenarios.

#### **Regional operations/future decision**

WSDOT also considered whether the carpool policy selected for the first phase of I-405 express toll lanes would be effective on a regional basis or would need to be revisited soon.

# Traffic and Gross Revenue Analysis

WSDOT retained CDM Smith in 2012 to assist with developing traffic and gross revenue forecasting and analysis for several carpool scenarios:

- 3+ carpool free (transponder and photo billing, and transponder only)
- 2+ carpool free (transponder and photo billing, and transponder only)
- 3+ carpool free peak/ 2+ carpool free off-peak (transponder and photo billing)
- Carpool discount: \$1.00 (transponder only) and \$0.50 (transponder and photo billing)

## Methodology

For each option, CDM Smith developed traffic and revenue forecasts of toll rates, vehicle use of the express toll lanes, and gross revenue estimates. In developing these forecasts, CDM Smith considered three major inputs: how much demand exists for the lanes today and how that demand will grow over time, how much of the traffic can be expected to use the express toll lanes, and how much drivers will be willing to pay to use the lanes, as shown in Figure 9.

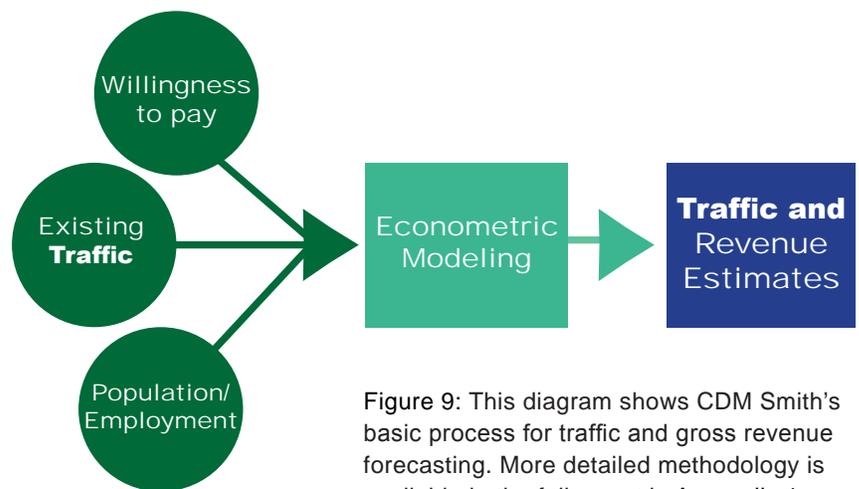


Figure 9: This diagram shows CDM Smith's basic process for traffic and gross revenue forecasting. More detailed methodology is available in the full report in Appendix 1.

To answer these questions, CDM Smith used the following types of models:

- The Puget Sound Regional Council regional forecasting model to estimate future travel demand for the area,
- Traffic microsimulation tools to model traffic operations and performance of the roadway network under various tolling configurations, and
- A market-share demand model to estimate the amount of traffic that would use the express toll lanes and their toll rates.

## Key Modeling Assumptions

### Toll rates

- The minimum toll to use the facility is \$0.75 when the facility opens (in year of expenditure dollars).
- Minimum tolls increase with inflation over the life of the facility.
- There are no maximum tolls. The toll is not capped, and the lanes are not closed to non-carpool vehicles at an arbitrary point.
- Models are based on PSRC forecast for the years 2014, 2018 and 2030. To avoid overstating traffic projections, the models assume no traffic growth after 2030.

### Vehicle eligibility and hours of operation

- Heavy trucks and trailers are not eligible for the express toll lanes (similar to carpool lane policy today).
- The facility was modeled based on operating hours of 5 a.m. to 8 p.m. daily. This duration is one hour longer than the current I-405 carpool lane hours, which operate from 5 a.m. to 7 p.m. daily.

### Facility goals

In order not to overstate revenues, the model assumed that the objective of tolling is for traffic optimization, meaning that toll rates aim to maximize use of the express toll lanes while maintaining free-flow conditions in the express toll lanes.

## Traffic modeling results

All of the carpool scenarios studied operate similarly during the peak periods with the exception of the 2+ carpool free option. They operate similarly because the goal of the traffic and revenue analysis was to maximize demand for the express toll lanes. The models used pricing to achieve the highest levels of demand while maintaining free-flowing speeds in each carpool scenario. The models found that the number of tolled and toll-free trips will vary depending on the carpool scenario selected and the time of day. Appendix 1 contains the full report, including the tolled and toll-free trip information by scenario.

## 2+ carpool free scenario does not meet traffic performance standards today or in the future

Permitting two-person carpools to ride for free in the express toll lanes does not meet the traffic performance criteria of maintaining 45 miles per hour speeds or greater 90 percent of the time during peak periods, as shown in Figure 10. In fact, the single carpool lane does not meet the criteria today.

The existing carpool lane north of SR 522, the one lane section, is at capacity during peak periods today. A 2+ carpool free scenario would continue to experience these operational problems and would not meet the performance objectives. Under this scenario, the express toll lanes would continue to have performance problems, and the lanes would need to be closed almost daily to non-carpoolers, leaving all travelers without reliable trip options.

### Scenarios that meet traffic performance requirements

Scenario name	Scenarios moving forward
A 2+ carpool free	
B \$1.00 carpool discount	✓
B-2 \$0.50 carpool discount	✓
C 3+ carpool free peak/ 2+ carpool free off-peak	✓
D 3+ carpool free	✓

The 2+ carpool free scenario does not meet the legislative traffic performance requirement.

## Carpool lane speeds on southbound I-405 south of SR 527 (2012, average of Monday through Friday)

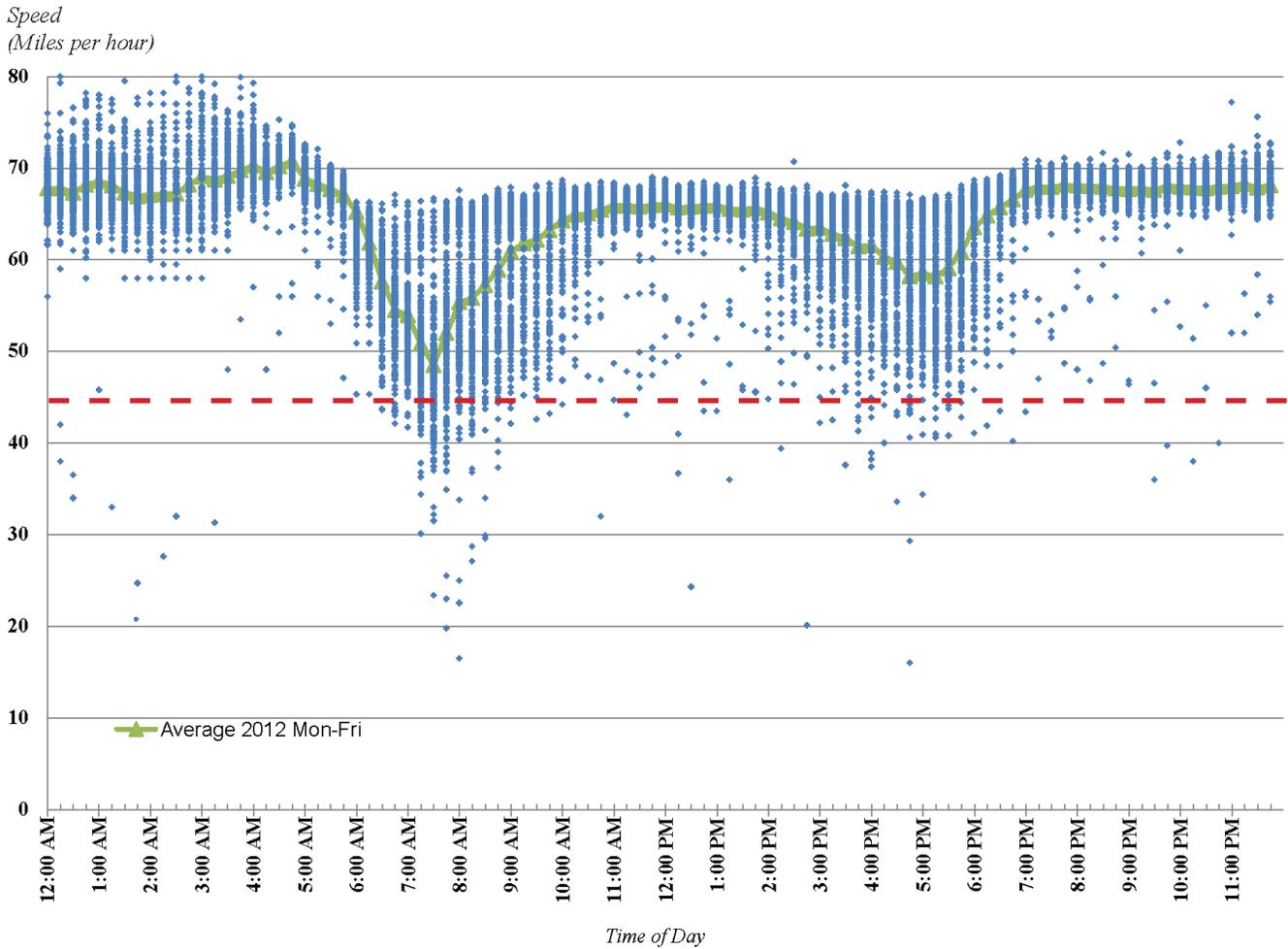


Figure 10: This chart shows the 2012 hourly speeds for all weekdays on southbound I-405, south of SR 527. The green solid line represents speeds throughout a typical day in this area, and each of the dots represents an average speed for a 15-minute period throughout the day for one day of the year. On average the speeds at this location drop below 50 miles per hour and frequently drop below 40 miles per hour during peak periods in both the morning and afternoon. Speeds below the dashed red line do not meet the legislative requirement today.

## Gross revenue modeling results

CDM Smith developed gross toll revenue estimates for each of the carpool scenarios. These estimates show the gross annual revenues prior to revenue adjustments and deductions for toll collection operations and maintenance. (The next section discusses net revenue potential for each of the scenarios studied.)

As illustrated in Figure 11, all of the carpool scenarios have similar annual gross revenue streams, with the exception of the 2+ carpool free scenario. The gross revenue for the 2+ carpool free scenario is significantly lower than the others because of the limited amount of buy-in space available for single-occupant vehicles and a larger volume of carpool vehicles traveling for free.

Additionally, as discussed previously, this scenario will require periods of closure to non-carpoolers to keep traffic moving, further reducing gross revenues.

### Estimated Gross Toll Revenues for Carpool Scenarios

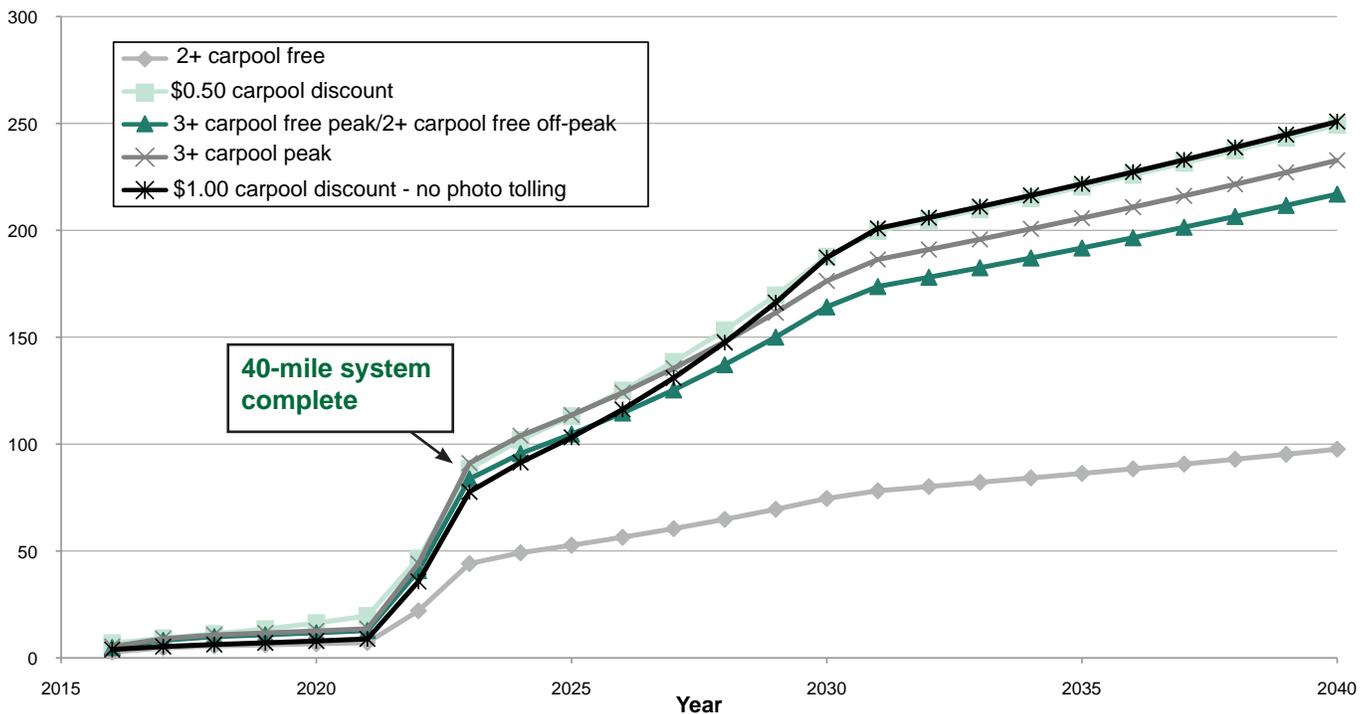


Figure 11: This chart shows the estimated gross toll revenues for each of the major carpool scenarios studied by CDM Smith. All of the scenarios would generate similar gross toll revenues except for the 2+ carpool free scenario, which would generate significantly lower revenues because of the limited amount of buy-in space available for solo drivers.

# Net Revenue Analysis

The Bellevue to Lynnwood express toll lanes (Phase 1) is scheduled to open for toll operations in 2015 (FY 2016). RCW 46.57.880 established that net revenues, after revenue adjustments and deductions for toll collection operations and maintenance (O&M), must be positive at the end of FY 2017.

## Overview of net revenue components

The traffic and revenue projections presented in the previous section represent the potential gross revenue that would result if WSDOT collected the correct toll from every customer in the express toll lanes. In order to determine if net revenues are positive after two years, and ultimately the net toll revenue available long term to support capital investments through financing or pay-as-you-go expenditures, it is necessary to account for a series of revenue adjustments and O&M expenditures, as illustrated in Figure 12.

### Net Revenue Flow Chart

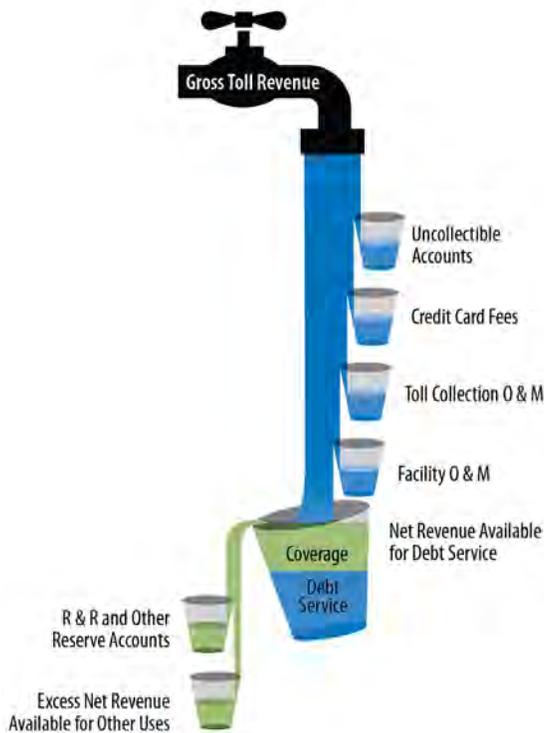


Figure 12: This graphic illustrates the process of calculating net toll revenues from gross toll revenues. Phase 1 of I-405 express toll lanes must generate positive net revenue after the first two years.

### Revenue Adjustments

The primary component of revenue adjustments is uncollectible revenue. When operations include photo tolling, anyone without a *Good To Go!* account can still pay to use the lanes as a Pay By Mail customer. This leads to two types of uncollectible revenue: revenue not recognized and unpaid toll revenue.

*Revenue not recognized* occurs when a customer's license plate is obstructed or otherwise unreadable, as well as when the owner of a vehicle with a readable license plate cannot be identified.

*Unpaid toll revenue* occurs when customers who are sent a toll bill in the mail do not respond to first and second toll bills with 80 days of the date of travel. While some portion of unpaid toll revenue will likely be recovered through the civil penalty adjudication process that begins after 80 days of non-payment, to be conservative, no allowance for recovered toll revenue has been included in the net revenue projections documented herein.

For scenarios without photo tolling, uncollectible revenue occurs anytime a non-carpool vehicle without a transponder uses the lane. This could be intentional scofflaws or accidental users. With fewer payment options, demand is assumed to be lower for such scenarios, and uncollectible revenue would be a larger share of the potential revenue.

Other categories of revenue adjustments include various fees. The Pay By Plate fee of \$0.25 for *Good To Go!* account customers without a transponder that are instead identified by their license plate has already been included in the gross traffic and revenue projections prepared by CDM Smith. However, because drivers will need a switchable transponder to declare their carpool status and potentially receive a free trip, this analysis assumed that most paying customers will choose the transponder option, as opposed to other payment options, because they will likely be eligible for a free trip at some point.

Toll statement rebilling fees have not been included in the forecasted revenue adjustments at this time. If a Pay By Mail customer's first toll bill goes unpaid, the second bill will have a \$5.00 rebilling fee added to the one or more trips being invoiced. If the rebilling fees had been factored in to the revenue adjustments, gross revenues would have been about 1.5 percent higher over the forecast period, with the revenue share slightly higher in the early years because of lower average toll rates.

Adjusted Gross Toll Revenue refers to the amount of toll revenue that would actually be collected after accounting for the aforementioned revenue adjustments but before considering the O&M costs discussed below.

## Operations and Maintenance costs

Routine annual operations and maintenance (O&M) costs include those for toll collections and for the highway facility. Toll collection costs collectively include annual expenditures for the following items.

- **Credit card and banking fees** — costs associated with customer payment of tolls and account deposits and refunds.
- **Customer Service Center (CSC) costs** — I-405/SR 167 Corridor's share of these state-wide vendor costs for systems software and operations, which includes processing of toll trips for payment, mailing toll bills, and other customer communications.
- **Roadway Toll Systems (RTS)** — operations and maintenance of the roadway toll systems (RTS) hardware that identifies the beginning and end of all toll trips as well as the applicable toll, and transmits that data to the customer service center

for processing.

- **WSDOT Toll Division** — I-405/SR 167 Corridor's share of the Toll Division's costs for management, vendor oversight, marketing, and auditing, as well as direct costs for toll bill printing and postage and out-of-state driver license look-up fees.
- **Washington State Patrol (WSP) enforcement** — costs for enforcement efforts, which includes expenditures for vehicle patrols and roadside shoulder observation to monitor vehicle occupancy, buffer violations and other traffic violations.

Enforcement costs are specific to the Eastside Corridor and are not allocated over the entire WSDOT toll system. Three levels of enforcement costs were considered and applied to the toll scenarios as follows.

1. *The lowest level* was applied to the photo tolling scenarios with a constant carpool definition, e.g., Scenario D with 3+ carpools toll-free.
2. *The mid-level cost* was applied to the more complex scenarios, including the \$0.50 carpool discount in Scenario B-2 and the variable carpool definition by time of day under Scenario C.
3. *The highest level* of enforcement cost was applied to the remaining scenarios that excluded photo tolling, since without a Pay By Mail option, non-carpools without transponders would be violators, and patrol officers would have fewer technological aids to ascertain for which vehicles to check occupancy.

Facility operations and maintenance activities include the routine annual activities for pavement repair, signage and lighting, lane striping, litter pick-up, landscaping, and other related roadway maintenance. These costs are not unique to express toll lanes, but rather apply to the entire highway corridor.

Until the majority of Phase 1 and Phase 2 corridor construction is completed, facility O&M expenditures for I-405 and SR 167 are assumed to be paid from existing WSDOT maintenance funding sources in the same manner as they are today.

Starting with FY 2022, when the majority of construction is assumed to be completed for purposes of the traffic and revenue projections, it was assumed that tolls would begin to contribute a pro-rated share of the corridor facility

O&M costs. The Legislature would finalize this policy. In the case of a five-lane cross-section of highway with two express toll lanes, it was assumed that tolls would contribute 40 percent of facility O&M costs.

Net toll revenues are calculated as adjusted gross toll revenues less the O&M costs described above. Net revenue represents the cash flow available to support capital investments, which could include one or more of the following: debt service on funds borrowed for up-front construction (toll financing), pay-as-you-go construction funding where net toll revenues from completed toll sections contribute to the construction of new sections, and/or periodic capital repair and replacement (R&R) costs.

### **Repair and Replacement costs**

Non-routine, periodic repair and replacement (R&R) costs are divided into two categories: facility R&R and toll collection R&R.

- **Facility R&R costs** include periodic, major highway repairs such as repaving. Projected facility R&R costs are reported as the express toll lane pro-rated shares of the full corridor costs to isolate the amounts assumed to be funded with tolls.
- **Toll collections R&R costs** include cost items related to periodic replacement or upgrades of the RTS toll equipment and hardware and state costs associated with periodically re-procuring CSC and RTS vendors.

Because these R&R costs represent capital replacement rather than routine, annual operating expenses, they are shown as expenditures after the calculation of net toll revenues. In the case of a toll financing, certain R&R costs may be required to be paid from toll revenues. In such cases, including for the SR 520 bridge financing, R&R costs are paid from a reserve account that is funded by annual contributions from excess (coverage) revenues left after paying debt service.

However, the initial financial modeling conducted by the Office of the State Treasurer and documented in Chapter 3 of this report has taken a more conservative stance that assumed R&R costs would be paid from toll revenues prior to paying debt service, resulting in a smaller amount of net revenues to leverage for financing.

## **Early year net revenue performance findings**

This study prepared net revenue projections for the first eight years of operations for the carpool scenarios described in the previous sections. Figure 13 presents the estimated net revenues for the early years of each scenario and uses green circles to indicate which scenarios meet the legislative requirements. Appendix 2 contains more detailed tables related to these findings.

Projections for annual toll trips, gross revenues, revenue adjustments and O&M costs, and net revenues before and after R&R costs through the year FY 2055 are shown in traffic and revenue (T&R) tables for each scenario in the Appendices.

## Net revenue projections for I-405/SR 167 express toll lanes

In millions of dollars, assumes Renton to Bellevue section opens 1/1/2022

Fiscal Year	Scenario A — 2+ Carpool Free   Photo Tolling						Scenario B — \$1.00 Carpool Discount					
	Toll Trips	Toll-Free Trips	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)	Full Toll Trips	Discount Toll Trips	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	2.4 M	7.8 M	\$2.8 M	\$2.6 M	(\$5.0 M)	(\$2.4 M)	3.1 M	10.2 M	\$3.9 M	\$3.3 M	(\$6.2 M)	(\$2.8 M)
2017	3.9	12.2	4.7	4.3	(6.4)	(2.1)	3.9	12.7	5.3	4.5	(6.9)	(2.4)
2018	4.5	13.7	5.6	5.2	(7.1)	(2.0)	4.3	14.1	6.3	5.3	(7.4)	(2.1)
2019	4.7	14.0	6.1	5.6	(7.3)	(1.7)	4.5	15.4	7.0	6.0	(7.8)	(1.8)
2020	4.9	14.1	6.6	6.1	(7.6)	(1.5)	4.6	16.8	7.9	6.7	(8.3)	(1.6)
2021	5.2	14.3	7.2	6.6	(8.0)	(1.4)	4.8	18.4	8.9	7.5	(9.0)	(1.5)
2022	10.4	28.3	22.0	20.2	(19.4)	0.9	10.5	28.5	35.7	30.4	(19.1)	11.3
2023	18.3	50.9	44.1	40.5	(27.5)	13.0	19.1	45.7	77.7	66.0	(25.9)	40.1

Fiscal Year	Scenario B-2 — \$0.50 Carpool Discount   Photo Tolling						Scenario C — 2+ Carpool Free Off-Peak   3+ Carpool Free Peak   Photo Tolling					
	Full Toll Trips	Discount Toll Trips	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)	Toll Trips	Toll-Free Trips	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	4.1 M	4.7 M	\$6.9 M	\$6.4 M	(\$5.9 M)	\$0.4 M	4.4 M	3.5 M	\$4.9 M	\$4.5 M	(\$5.0 M)	(\$0.5 M)
2017	5.2	6.0	9.3	8.5	(6.7)	1.8	7.1	5.5	8.2	7.6	(6.4)	1.2
2018	6.0	6.9	11.2	10.3	(7.6)	2.7	8.0	6.1	9.9	9.1	(7.1)	2.1
2019	7.0	8.4	13.5	12.5	(8.5)	4.0	8.3	6.2	10.8	10.0	(7.2)	2.8
2020	8.0	10.1	16.3	15.0	(9.6)	5.4	8.5	6.3	11.8	10.8	(7.4)	3.4
2021	9.3	12.2	19.6	18.0	(11.1)	7.0	8.7	6.3	12.8	11.7	(7.8)	3.9
2022	16.0	18.4	46.5	42.7	(22.5)	20.2	18.2	14.5	40.8	37.5	(19.8)	17.7
2023	26.4	29.1	88.4	81.3	(30.5)	50.8	32.8	27.7	83.7	76.9	(28.7)	48.2

Fiscal Year	Scenario D — 3+ Carpool Free   Photo Tolling					
	Toll Trips	Toll-Free Trips	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	5.0 M	1.3 M	\$5.3 M	\$4.9 M	(\$4.6 M)	\$0.3 M
2017	7.9	2.1	9.0	8.3	(5.8)	2.5
2018	9.0	2.3	10.8	9.9	(6.4)	3.5
2019	9.2	2.3	11.7	10.8	(6.5)	4.3
2020	9.5	2.4	12.6	11.6	(6.7)	4.9
2021	9.7	2.4	13.6	12.5	(7.1)	5.5
2022	21.2	7.3	44.2	40.5	(19.3)	21.2
2023	39.1	15.3	91.1	83.7	(28.3)	55.4

**NOTES:**

<sup>1</sup> Year of collection dollars; toll traffic and gross potential revenue projections prepared by CDM Smith.

<sup>2</sup> Adjusted for potential uncollectible revenue. Excludes rebilling fees.

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

11/13/2013

Figure 13: These tables summarize express toll lane trips, adjusted gross revenues, O&M costs, and net revenues for the five main toll scenarios (Scenarios A, B, B-2, C and D) during the first eight years of toll operations. This analysis assumes that Phase 2, which includes I-405 express toll lanes between Renton and Bellevue, as well as the SR 167 HOT lane operations, will open to tolling in mid FY 2022, or approximately six years after the opening of Phase 1 between Bellevue and Lynnwood. Analysis for scenarios E and F (3+ Carpool Free without photo tolling) is available in Appendix 2.

## Scenarios that meet net revenue requirements

Scenario name	Scenarios moving forward
A 2+ carpool free	
B \$1.00 carpool discount	
B-2 \$0.50 carpool discount	✓
C 3+ carpool free peak/ 2+ carpool free off-peak	✓
D 3+ carpool free	✓

Only three of the remaining scenarios evaluated meet the legislative requirement of positive net revenue within two years of opening.

## 2+ carpool free and \$1.00 discount scenarios do not meet net revenue requirements

Of the toll scenarios studied, two scenarios—Scenario A (2+ carpool free) and Scenario B (\$1.00 carpool discount)—do not meet legislative requirement of positive net revenue by the end of the second year of Phase 1 operations.

**Scenario A**, in which 2+ carpools would ride for free, does not result in a sufficient number of revenue-generating vehicles to offset the fixed and variable costs of toll collection. For example, these costs include carpool detection in order to exempt vehicles with two or more occupants. Scenario A is not predicted to have positive net revenues until Phase 2 opens in mid FY 2022.

**Scenario B** assumes that all two-person or greater carpools would be offered a \$1.00 discount. Because in the early years, there are many times of day in one or both travel directions in which the minimum toll of \$0.75 is in effect, carpools subject to a \$1.00 discount would pay nothing. Similar to Scenario A, Scenario B's high volumes of effectively toll-free use does not result in a sufficient number of revenue-generating vehicles to offset the fixed and variable costs of toll collection in the early years. Scenario B also would not meet the positive net revenue requirement until mid FY 2022 when Phase 2 opens. Once Phase 2 opens, Scenario B is projected to generate significantly more net revenue than Scenario A because of its higher number of toll-paying trips.

## Remaining carpool scenarios meet net revenue requirements

The three remaining carpool scenarios—Scenario B-2 (\$0.50 discount), Scenario C (3+ carpool free peak/2+ carpool free off-peak) and Scenario D (3+ carpool free)— would meet the legislative requirements.

Because everyone would pay some amount under **Scenario B-2**, the predicted toll revenues are sufficient to offset the operating costs and yield positive net revenues of \$1.8 million for FY 2017.

**Scenario C** strikes a balance between carpool exemptions and revenue generation by allowing two-person carpools to travel toll-free in off-peak times while allowing only 3+ carpools to travel for free when both carpool and non-carpool demand is high during the morning and afternoon peak periods. This scenario would generate about \$1.2 million in FY 2017.

**Scenario D**, in which only 3+ carpools are exempt from tolls, generates the most net revenue early on, with \$2.5 million expected for FY 2017.

## Summary of Carpool Scenarios

As discussed earlier in this chapter, WSDOT conducted both quantitative and qualitative assessments, which include a number of different factors, when comparing the carpool scenarios. WSDOT presented the EAG with its analysis of several factors related to carpool policy, as shown in Figure 14.

In this analysis, the 2+ carpool free scenario poses the greatest challenges in each of the categories evaluated, notably the two performance criteria set by the state Legislature: system reliability and initial net revenue. The \$1.00 discount scenario met the traffic performance criteria but did not meet the revenue requirement. The 3+ carpool free scenario would pose the fewest challenges across the board, aside from in the public acceptance category. However, many stakeholders, including the EAG, also consider public acceptance to be important to the success of the system.

After accounting for the traffic and net revenue findings described in this chapter, three scenarios remained viable for consideration: B-2 (\$0.50 carpool discount), C (3+ carpool free peak/2+ carpool free off-peak) and D (3+ carpool free).

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

Figure 14: This table summarizes the ratings for the five primary carpool scenarios in each of the categories that WSDOT considered. Good performance in the “system reliability/operations” and “initial net revenue” categories is key to meeting legislative requirements.

# EAG Carpool Recommendation: 3+ carpool free peak/2+ carpool free off-peak

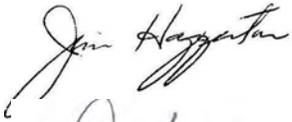
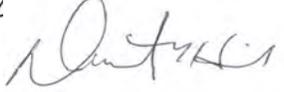
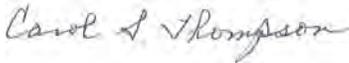
After extensive analysis of traffic performance modeling, net revenue estimates and public opinion expressed in focus groups, the EAG reached a consensus recommendation to **support Scenario C (3+ carpool free peak/2+ carpool free off-peak)**.

Several members of the group recognized that ultimately a 3+ carpool definition is necessary. However, the group decided that Scenario C's hybrid approach would best accomplish the Legislature's direction while providing some benefit to two-person carpools. This option meets both the traffic and revenue benchmarks while easing the public's transition to a 3+ carpool system. The group formalized its recommendations in a November 2013 letter to WSDOT Secretary Lynn Peterson and members of the Washington State Transportation Commission (see Appendix 3 for full letter). Figure 15 shows the signatories of this letter.

## Excerpt from EAG interest letter

*As representatives to the I-405/SR 167 Executive Advisory Group, we are writing to convey our shared support and consensus of Scenario C (3+ Carpool Free Peak/2+ Carpool Free Off-peak). Consistent with performance measures outlined in RCW 47.56.880, WSDOT staff developed six scenarios related to carpool requirements for the I-405 express toll lanes in the northern segment (Bellevue to Lynnwood), now under construction and scheduled to open in 2015. This decision will also potentially inform policy for the unfunded southern segment (Bellevue to Renton). Scenario C would allow 3+ carpools to travel for free in the express toll lanes during peak hours and 2+ carpools to ride for free at off-peak times. Transit, registered vanpools and 3+ carpools would ride for free at all times. This innovative hybrid approach appears to best meet the Legislature's direction, as it meets both traffic and revenue benchmarks while easing the public's transition to a 3+ carpool system.*

Figure 15: Members of the 2013 I-405/SR 167 Executive Advisory Group signed an interest letter in November 2013 to WSDOT and WSTC endorsing carpool policy and funding and phasing recommendations.

	Joan McBride Mayor of Kirkland
	Kevin Wallace Bellevue City Councilmember
	Jim Haggerton Mayor of Tukwila
	David Hill Mayor of Algona
	Dave Enslow Mayor of Sumner
	Peter Lewis Mayor of Auburn
	Rich Crispo Mayor of Newcastle
	Fred Butler Sound Transit Board Member
	Harold Taniguchi King County
	Carol Thompson Community Transit
	Dave Gossett Snohomish County Councilmember Puget Sound Regional Council



# Chapter 3 Financing, Funding & Phasing

## Phase 2 of the 40-mile system

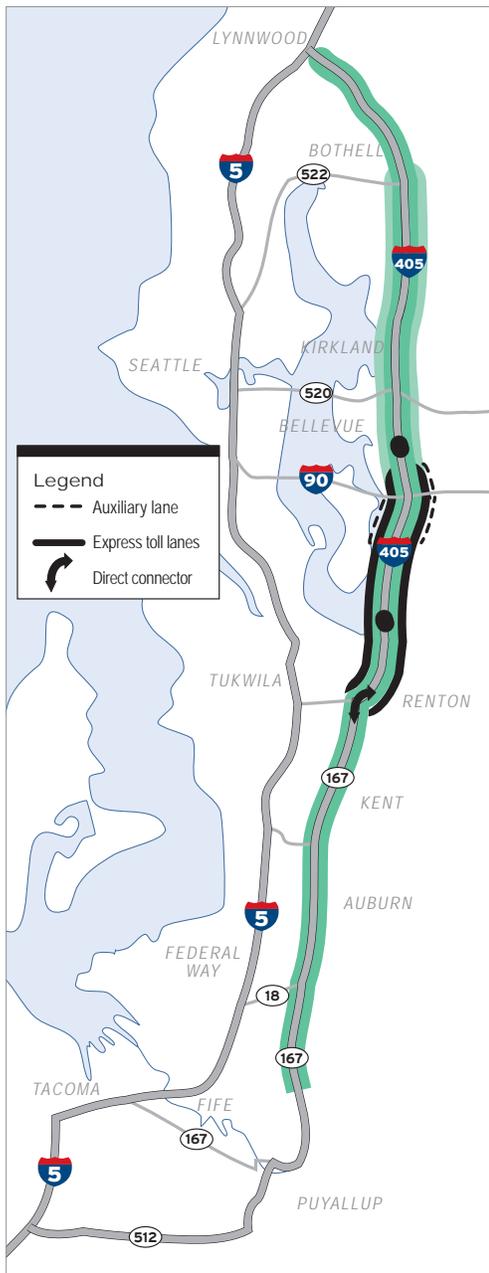


Figure 16: Phase 2, which covers roadway improvements between Renton and Bellevue, is largely unfunded.

Although Phase 1 is fully funded and under construction, the details of the funding and phasing plan for implementing Phase 2, illustrated in Figure 16, have not yet been settled.

However, it is clear that tolls alone cannot provide the necessary funding for the timely implementation of the Phase 2 projects. In fact, the funding plan for completing Phase 2 hinges on the provision of new state transportation funding legislation in concert with toll funding as some combination of toll bond financing for up front construction and/or incremental pay-as-you-go funding.

## Express Toll Lane Financing Challenges

As described in earlier chapters, the price to use the express toll lanes will vary dynamically to reflect the time savings and reliability that they provide relative to the general purpose lane traffic conditions. This approach seeks to balance the demand for express toll lanes with the available lane space in order to maintain speeds of 45 miles per hour or greater at least 90 percent of the time.

Because the decision to use the lanes can be very sensitive to small changes in the performance of the adjacent general purpose lanes, express toll lane projects have higher day-to-day demand and revenue volatility than traditional toll roads. This potential for wide swings in managed lane usage makes it difficult to accurately predict express lane traffic and revenues.

For many drivers, the choice to use the lanes is highly situational and price sensitive, even if the travel time savings are relatively consistent day to day. Although some users will be regular customers, many will choose to use the lanes only on occasions when they highly value arriving on time or having a predictable travel time, such as for an appointment or an important meeting. As such, a good portion of the customers will be a different people day to day, where those with a high situational value of time will opt to pay. These uncertainty factors create a relatively high degree of skepticism among investors and credit rating agencies when they evaluate the traffic and revenue projections of express toll lane facilities.

## Recent reports on managed lanes financing

Fitch Ratings and Moody's Investors Service both published reports in 2013 on priced managed lanes that struck a cautionary tone regarding the unique risks and benefits compared with traditional tolling. The May 9 Moody's report notes that there is very limited history and national experience with the financing of price managed lane projects, with "little operating data to help guide us on the ramp up and demand scenarios for what is a highly discretionary, but desirable service." Moody's notes that for many such projects: "Pricing is designed to meet a speed and congestion threshold, not revenue maximization. This model is not compatible with the use of standard rate covenants that protect investors when traffic and revenue is below expectations." This statement suggests that there is limited ability to increase tolls if revenues are insufficient to meet obligations.

The November 7 Fitch report notes that every project is unique, with traffic performance that is inherently volatile, making it difficult to develop comparison benchmarks. Fitch expects managed lanes to generate the vast majority of revenue during peak and peak shoulder periods because of their role as an alternative to congestion. In evaluating price managed lane projects, Fitch applies more conservative (pessimistic) assumptions to several inputs to evaluate risk within the traffic and revenue forecasts. These downside sensitivity tests tend to be more stringent than those used for regular toll facilities.

Both Fitch and Moody's acknowledge that there is limited national market experience with financing express toll lane projects. Less than a dozen express toll lane projects nationally have used toll bonds that achieve an investment-grade credit rating in combination with other funding sources to pay for their implementation. With the exception of SR 91 in Orange County, Calif., these examples are still in the early stages of their debt amortization, and several have not yet started revenue operations. More than half of the relevant examples also involve public-private partnerships with private equity and/or a U.S. Department of Transportation-subsidized TIFIA loan as part of the funding, such as the I-495 Express project in Virginia.

### *TIFIA loan analysis*

If a USDOT TIFIA loan application is successful, the loan can be used in place of a portion of standalone toll revenue bonds. Shifting some of the traffic and revenue risk to the TIFIA loan may serve to bolster the creditworthiness of the toll bonds by effectively providing them with higher debt service coverage. In addition, TIFIA loans can be structured to defer some of the early-year interest and/or principal payments when the project is in ramp-up status and produces lower initial revenues.

Until there is substantially more industry experience in financing and operating express toll lane facilities, only the strongest projects may be able to obtain investment-grade credit ratings on toll revenue bonds. Compared with conventional toll roads, the investment community will likely continue to apply conservative financial assumptions and analysis methods, including:

- Higher debt service coverage ratios;
- Additional liquidity; and
- The ability to withstand more stringent discounting of input assumptions and revenue projections.

# Financial Analysis by Office of the State Treasurer

## Assumptions

In 2013, WSDOT worked with the Office of the State Treasurer to evaluate potential toll financing options and assess their financial capacity to contribute to up-front construction funding. OST and their financial advisor analyzed two different debt structures: standalone toll revenue bonds and toll-backed general obligation (GO) bonds. Figure 17 shows the key features of each type of bonds.

Standalone Toll Revenue Bonds	Toll-backed General Obligation (GO) Bonds
Tolls are the only source of funds pledged to debt repayment.	With the full faith and credit of the state behind the bonds, the state pledges to repay the debt with other sources (e.g., motor vehicle fuel tax revenues if toll revenues are insufficient).
Traffic and revenue risk is transferred to and borne by the investors.	The state retains traffic and revenue risk.
Higher investor risk = higher cost credit, higher debt service coverage and/or reserves, and thus, less toll funding.	Lower investor risk = lower cost credit, lower debt service coverage, and thus, more toll funding

Figure 17: Comparison of debt structures analyzed by OST.

Although OST evaluated both types of debt structures in their financial capacity analysis, they expressed strong concerns about the viability of using standalone toll revenue bonds for express toll lanes in today’s market, given the aforementioned risks and uncertainty issues.

Because toll-backed general obligation bonds only transfer revenue forecast risks to the state rather than mitigate them altogether, OST opted to use conservative financing assumptions in their financial capacity analysis.

Figure 18 summarizes the financing assumptions by debt structure type. Debt service coverage is the factor or multiple by which the annual net revenues available for principal and interest payments (debt service) exceed annual debt service costs. The debt service coverage assumptions in this table are the minimum values.

Of particular note are the OST timing assumptions that revenue operations would be delayed one year and that toll funding would be needed as early as FY 2017. If other funding could be obtained for the early years of Phase 2 construction, delaying the need for toll bond proceeds until FY 2019 or later, the toll funding contribution would increase by reducing capitalized interest costs. Similarly, keeping to the construction schedule to allow tolling to start on time would have a similar effect, reducing capitalized interest costs and increasing the toll funding contribution.

Assumption	Standalone Toll Revenue Bonds	Toll-backed GO Bonds
Credit rating	BBB	AA+
Interest rates	7.50-7.85%	5.50-6.00%
Debt service coverage	2.5x	2.0x; 1.3x as a sensitivity test
R&R costs	Funded from tolls ahead of debt service <sup>1</sup>	Funded from tolls ahead of debt service <sup>1</sup>
Maximum maturity	25 years	25 years <sup>2</sup>
Funding availability	FY 2017-22	FY 2017-22
Start of tolling	Delayed one year to mid FY 2023 (1/1/23)	Delayed one year to mid FY 2023 (1/1/23)

Figure 18: Assumptions for each bonding type analyzed by OST.

<sup>1</sup> OST tested paying for R&R costs both with and without a pre-funded reserve account and found that the difference in financial capacity was negligible because in both cases, tolls paid for R&R costs in advance of debt service.

<sup>2</sup> The state constitution allows for state-backed debt maturities of up to 30 years.

## Financial Results

OST’s financial analysis focused on three of the WSDOT toll scenarios:

- Scenario A (2+ carpool free)
- Scenario C (3+ carpool free peak/2+ carpool free off-peak)
- Scenario D (3+ carpool free)

OST also analyzed Scenario F, the Washington State Transportation Commission’s independent analysis case for 3+ carpool free, as the “high bookend” for comparison purposes. This case did not include the photo tolling policy assumption, as described in more detail in Chapter 1 of this report.

OST’s analysis preceded the development of Scenario B-2 (\$0.50 carpool discount); however, its financial capacity would likely be similar to that of Scenario D, based upon its net revenues, which start out slightly lower but exceed those of Scenario D by FY 2027.

Figure 19 summarizes the financial capacity for three representative cases for the various combinations of financing assumptions analyzed by OST. The three cases are:

- Standalone toll revenue bonds with a BBB credit rating, 2.5x minimum debt service coverage, ascending debt service, and R&R paid from a pre-funded reserve account ahead of debt service;
- Toll-backed general obligation bonds with the state’s AA+ credit rating, 2.0x minimum debt service coverage, level debt service after FY 2031, and R&R paid from a pre-funded reserve account ahead of debt service; and
- Toll-backed general obligation bonds as above except with 1.3x minimum debt service coverage.

**Scenario A**, in which 2+ carpools travel toll-free at all times, does not yield substantial toll funding, regardless of what financing assumptions are applied. Even under the most optimistic assumption of ascending debt service paired with the toll-backed general obligation bonds at 1.3x coverage (not shown in Figure 19), potential toll funding would still fall short of \$100 million.

**Scenarios C and D**, which allow fewer vehicles to travel toll-free, would provide substantially more potential toll funding. Scenario C, the Executive Advisory Group’s recommendation, would potentially yield \$215 million with stand-alone toll revenue bonds at 2.5x debt service coverage. With toll-backed general obligation bonds, Scenario C would potentially yield \$390 million with 2.0x coverage and \$595 million with 1.3x coverage. Delaying the receipt of the toll bond proceeds by a year or two, delivering the Phase 2 projects on time, and/or structuring the debt with ascending debt service could potentially increase the amounts shown in Figure 19.

The highest toll funding amounts with 1.3x coverage, shown in the blue bars of Figure 19, are intended to be optimistic bookends, and may represent a higher level of traffic and revenue risk than the state would be willing to bear. However, this financing case still serves a useful purpose as a proxy for a more realistic alternative case. This case would combine toll-backed general obligation bonds at the 2.0x coverage funding levels (shown by the green bars) with a USDOT TIFIA loan, leveraging additional net toll revenues to bring the aggregate debt service coverage level down to 1.3x.

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

Millions of dollars

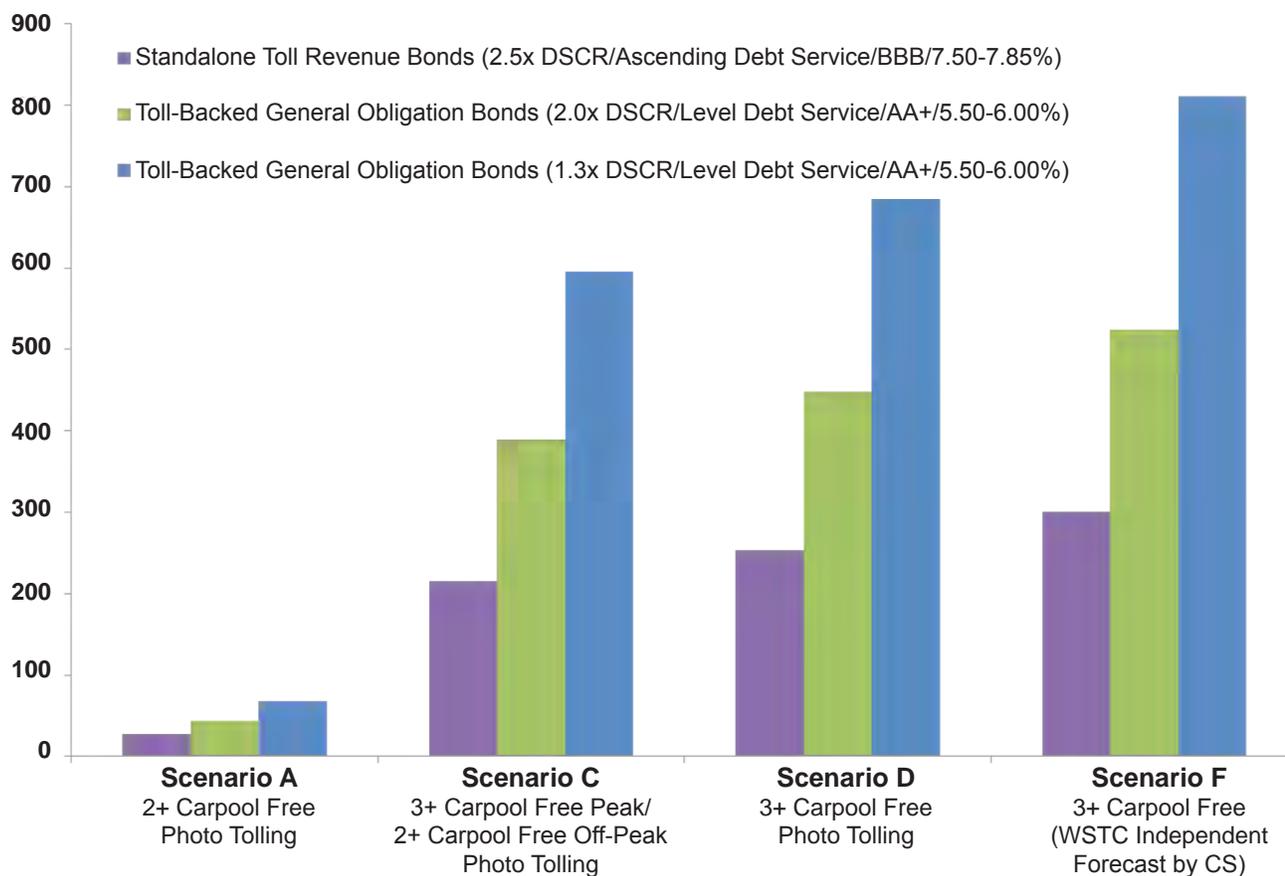


Figure 19: This chart illustrates OST’s preliminary findings about the potential funding available from four different carpool scenarios and three different debt structure options. Of the options considered by the EAG, Scenarios C and D show the greatest funding potential.

## Preliminary Findings

In their preliminary financial analysis, OST shared with WSDOT several observations and findings:

- OST expressed concern that standalone toll revenue bonds are not viable at this time because of the high level of risk. Toll-backed GO bonds would likely need to draw on traditional (motor vehicle fuel tax) revenues.
- As previously acknowledged, OST notes that toll revenues alone are insufficient to fully finance construction of the \$1.175 billion Phase 2 express toll lanes project (Renton to Bellevue) under any toll or financing scenario.
- OST notes that interest rates have risen by more than 1.25 percentage points since their analysis in late spring 2013, putting downward pressure on the toll funding estimates.
- Toll revenues will be limited until the Renton to Bellevue extension opens (assumed in the traffic and revenue forecasts to be in mid FY 2022), and the start date could be vulnerable to construction delays.
- Nationwide, express toll lane toll revenue bond financing is limited. Among the dozen or so examples, three recent financing efforts are of interest:
  - SR 91 Express Lanes Extension, Riverside County, Calif. — \$174 million in public toll bond financing backed only by tolls, a \$421 million TIFIA loan and \$716 million from other non-toll funding sources;
  - I-10, Harris County, Texas — \$255 million in public toll bond financing backed by pooled revenues from a system of toll roads; and
  - I-495, Virginia — public-private partnership with \$589 million in private activity toll bonds, a \$589 million TIFIA loan and \$890 million from other non-toll funding sources.



SR 91 express lanes in California

- 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 the financing risks associated with reliance on revenue growth.
- A TIFIA loan may be an option for partial financing, as the program was designed for projects in need of credit enhancement. However, recent tightening of credit quality requirements for TIFIA applicants may reduce the potential benefits of a TIFIA loan's favorable terms.
- Finally, the state should identify other construction funding sources so as to rely less on express toll lane revenues financed for up-front construction to complete the 40-mile system and to use more pay-as-you-go revenue to cover ongoing system operating expenses and construct additional improvements.

# Funding and Phasing Options for Phase 2

The 2009 Eastside Corridor Tolling Study recommended Study Option 4 for implementation in two phases. Although Phase 1, which builds express toll lanes from Bellevue to Lynnwood on the north end of I-405, received full funding primarily from the 2003 and 2005 gas tax packages, Phase 2 remains largely unfunded.

Since that report, WSDOT has reviewed and updated the project cost estimates and timelines for Phase 2. WSDOT completed a Cost Estimate Validation Process (CEVP) to evaluate the costs, risks and opportunities associated with the original Phase 2 projects and revised the project costs, as shown in the table below. In addition, identifying program savings to fund engineering and right-of-way acquisition for the Direct Connector project has helped to reduce program needs. WSDOT reviewed the Renton to Bellevue project to identify component elements, as reflected in Figure 20.

Funding Needed for Phase 2 Improvements	
Renton to Bellevue One lane between NE 6th Street and SR 167 (accommodates N. 8th)	\$675 m
I-405 - 112th Ave. SE to I-90 auxiliary lanes	\$175 m
NE 6th Street Extension	\$40 m
I-405/SR 167 Direct Connector	\$285 m
<b>Total cost</b>	<b>\$1,175 m</b>

Figure 20: Phase 2 has a funding need of \$1,175 million (calculated assuming 2017 construction start).

The major work of this project would build a new express toll lane between SR 169 in Renton and NE 6th Street in downtown Bellevue. WSDOT will also convert the existing carpool lane to an express toll lane to create a dual lane express toll lane system.

WSDOT also evaluated how to fund and phase the remaining elements listed in Figure 20. The I-405/SR 167 Direct Connector remains a vital link to creating a robust 40-mile system of express toll lanes. Other important elements include building auxiliary

lanes near the I-90 interchange and extending the NE 6th Street eastward across I-405, providing greater accessibility to and from downtown Bellevue directly into the new express toll lanes.

## Overview of Three Funding Options

During the EAG meeting process, WSDOT developed three funding and phasing options that build toward the Option 4 improvements selected through the 2009 study:

### High traditional funding

Relies on gas tax or other traditional revenues for 100 percent of the project funding (\$1.175 billion).

### Medium traditional funding

Relies on gas tax or other traditional revenues for \$960 million of the \$1.175 billion needed. The remaining \$215 million would come from toll revenues (toll-backed general obligation bonds or pay-as-you-go).

### Low traditional funding

Relies on gas tax or other traditional revenues for \$675 million of the \$1.175 billion needed. The remaining \$500 million would come from toll revenues (toll-backed GO bonds or pay-as-you-go).

# High Traditional Funding Option

- Uses traditional funding sources, such as gas tax revenues, to fund all of the elements to complete the full 40-mile system envisioned in the 2009 study.
- Would build all of the project elements at one time, with an assumed opening date of 2022.
- Would not rely on any toll revenue to finance these projects. Pay-as-you-go financing of future improvements in the I-405 corridor would be possible with the accumulated toll revenue.
- Would generate approximately \$500 million in toll revenues by fiscal year 2028 to use toward future improvements (assuming 3+ carpool free definition and 2017 construction start).\*

## High Traditional Funding Option: Project Costs and Funding

### Costs

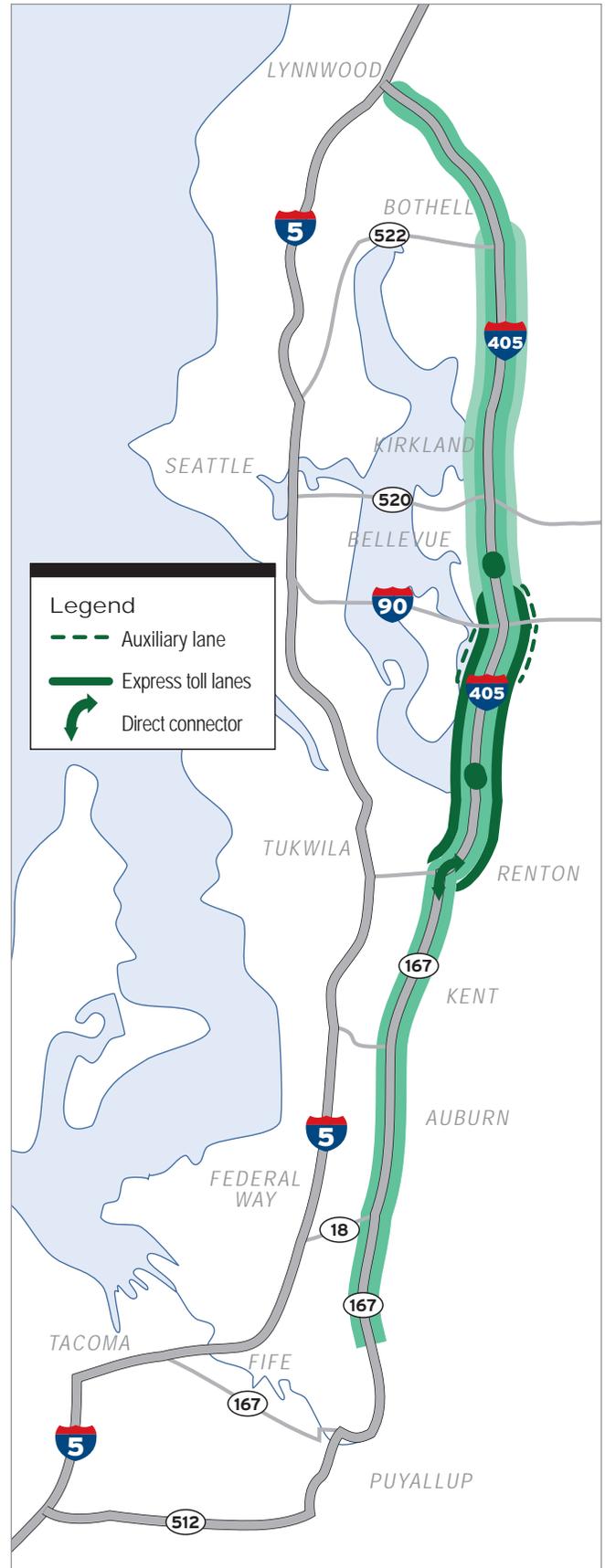
Renton to Bellevue <i>One lane between NE 6th Street and SR 167 (accommodates N. 8th)</i>	\$675 million
I-405/SR 167 Direct Connector	\$285 million
I-405 - 112th Ave. SE to I-90 auxiliary lanes	\$175 million
NE 6th Street Extension	\$40 million
<b>Total Cost</b>	<b>\$1,175 million</b>

### Funding

**Total State Funding** **\$1,175 million**

**Funding gap** **\$0 million**  
*(to be supplied from tolls)*

\* The 3+ carpool free definition was used for discussion purposes and to provide a basis of comparison for the funding options. The EAG ultimately selected Scenario C, the 3+ carpool free peak/2+ carpool free off-peak option, which will take slightly longer to accumulate the needed revenues.



## Medium Traditional Funding Option

- Uses traditional funding sources to fund \$960 million of the Renton to Bellevue project and the SR 167 Direct Connector. These components are assumed open to traffic by 2022.
- There would be two options available to fund the remaining project elements (shown in orange), which are the auxiliary lanes and NE 6th Street extension:
  - Use toll-backed GO bond financing to fill the \$215 million funding gap and build improvements by 2022.
  - Use pay-as-you-go financing to fill the funding gap. The revenue to build these project elements is projected to be available by FY 2026 (assuming a 3+ carpool free definition and 2017 construction start).\*

### Medium Traditional Funding Option: Project Costs and Funding

#### Costs

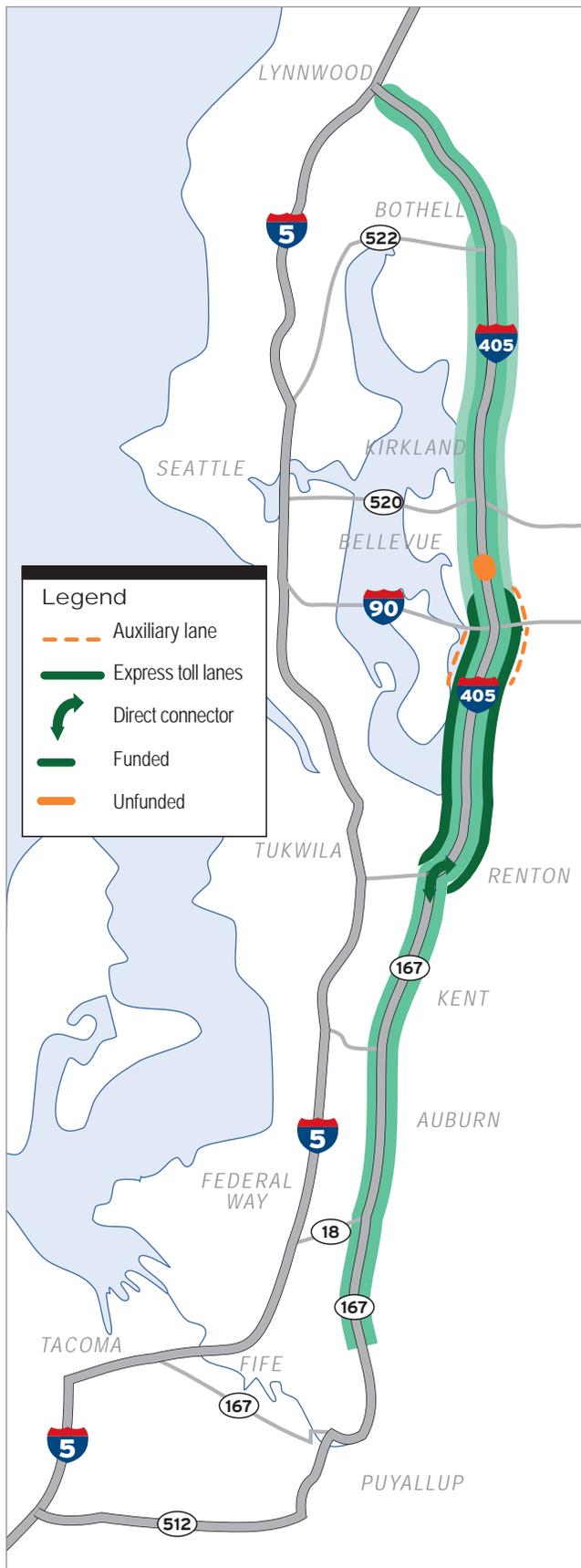
Renton to Bellevue	\$675 million
One lane between NE 6th Street and SR 167 (accommodates N. 8th)	
I-405/SR 167 Direct Connector	\$285 million
I-405 - 112th Ave. SE to I-90 auxiliary lanes	\$175 million
NE 6th Street Extension	\$40 million
<b>Total Cost</b>	<b>\$1,175 million</b>

#### Funding

**Total State Funding** **\$960 million**

**Funding gap (to be supplied from tolls)** **\$215 million**

\* The 3+ carpool free definition was used for discussion purposes and to provide a basis of comparison for the funding options. The EAG ultimately selected Scenario C, the 3+ carpool free peak/2+ carpool free off-peak option, which will take slightly longer to accumulate the needed revenues.



# Low Traditional Funding Option

- Uses traditional funding sources to fund \$675 million of the Renton to Bellevue project. This basic system could open to traffic by 2022.
- Would not include the Direct Connector, auxiliary lanes, and NE 6th Street extension in early construction.
- There would be two options available to fund the full 40-mile system:
  - Use toll-backed GO bond financing to fill the \$500 million funding gap when feasible.
  - Use pay-as-you-go financing to fill the gap. Toll revenue to build the Direct Connector is projected to be available in FY 2027, and the revenue for remaining work to complete Study Option 4 is projected to be available in FY 2031 (assuming a 3+ carpool free definition and 2017 construction start).\*

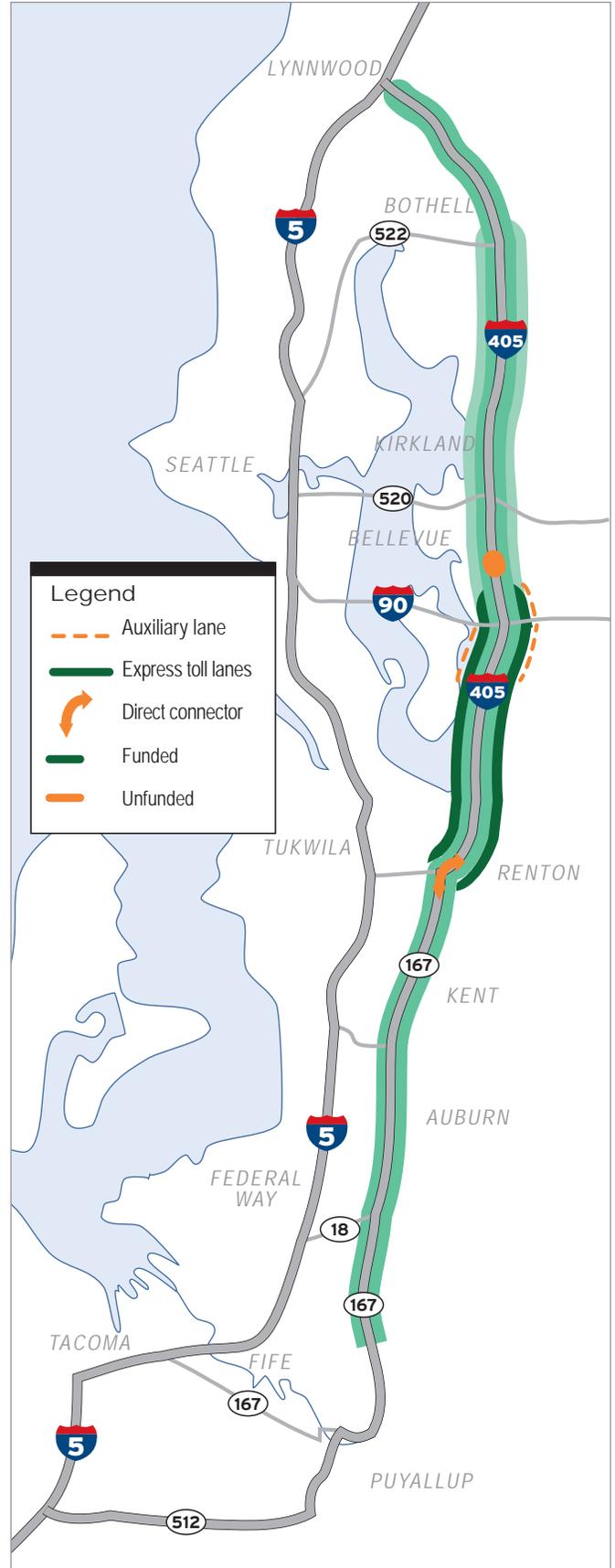
## Low Traditional Funding Option: Project Costs and Funding

<b>Costs</b>	
Renton to Bellevue	\$675 million
One lane between NE 6th Street and SR 167 (accommodates N. 8th)	
I-405/SR 167 Direct Connector	\$285 million
I-405 - 112th Ave. SE to I-90 auxiliary lanes	\$175 million
NE 6th Street Extension	\$40 million
<b>Total Cost</b>	<b>\$1,175 million</b>

<b>Funding</b>	
<b>Total State Funding</b>	<b>\$675 million</b>

<b>Funding gap</b>	<b>\$500 million</b>
(to be supplied from tolls)	

\* The 3+ carpool free definition was used for discussion purposes and to provide a basis of comparison for the funding options. The EAG ultimately selected Scenario C, the 3+ carpool free peak/2+ carpool free off-peak option, which will take slightly longer to accumulate the needed revenues.



# EAG Funding and Phasing Recommendation: Medium Traditional Funding Option

The EAG reached a unanimous consensus that the funding and phasing of the Renton to Bellevue express toll lanes needs to occur as soon as possible. The group expressed a preference for the high traditional funding option but recognized that competing state priorities exist.

With that recognition, they recommended the **medium traditional funding option** because it allows construction of the Renton to Bellevue express toll lanes and the I-405/SR 167 Direct Connector. If bond financing becomes necessary to complete the 40-mile system, the group urged WSDOT to seek additional bonding authority from the Legislature to ensure the option of using state-backed debt (toll-backed GO bonds). This approach reduces the financing cost to the public but does require the state to bear the traffic and revenue risk.

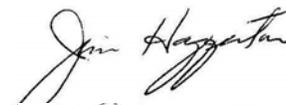
## Excerpt from EAG interest letter

There was unanimous consensus that the phasing of the Renton to Bellevue express toll lanes needs to occur as **soon as possible**. While we prefer the “high traditional funding” option we realize there are competing state priorities. Fully funding the Renton to Bellevue express toll lanes and the I-405/SR 167 Direct Connector ramp from gas tax revenues and related gas tax-backed bonds if needed will allow the projects to be built as quickly as possible. This option also provides a revenue stream, via toll revenue collected from express toll lanes, to fund future Master Plan improvements. Understanding that the “high” funding option represents a large allotment of resources, we recommend the “medium” traditional funding option, which allows construction of the Renton to Bellevue express toll lanes. If bonding becomes necessary to complete the 40-mile system, we urge WSDOT to seek additional bonding authority from the Legislature to ensure the option of using triple-backed bonds, which are often more affordable to the public.

Figure 21: Members of the 2013 I-405/SR 167 Executive Advisory Group signed an interest letter in November 2013 to WSDOT and WSTC endorsing carpool policy and funding and phasing recommendations. The full letter is available in Appendix 3.

 Joan McBride  
Mayor of Kirkland

 Kevin Wallace  
Bellevue City Councilmember

 Jim Haggerton  
Mayor of Tukwila

 David Hill  
Mayor of Algona

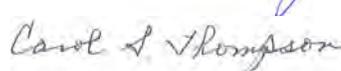
 Dave Enslow  
Mayor of Sumner

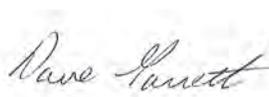
 Peter Lewis  
Mayor of Auburn

 Rich Crispo  
Mayor of Newcastle

 Fred Butler  
Sound Transit Board Member

 Harold Taniguchi  
King County

 Carol Thompson  
Community Transit

 Dave Gossett  
Snohomish County Councilmember  
Puget Sound Regional Council



# Chapter 4 Public Involvement

## Public Involvement Process

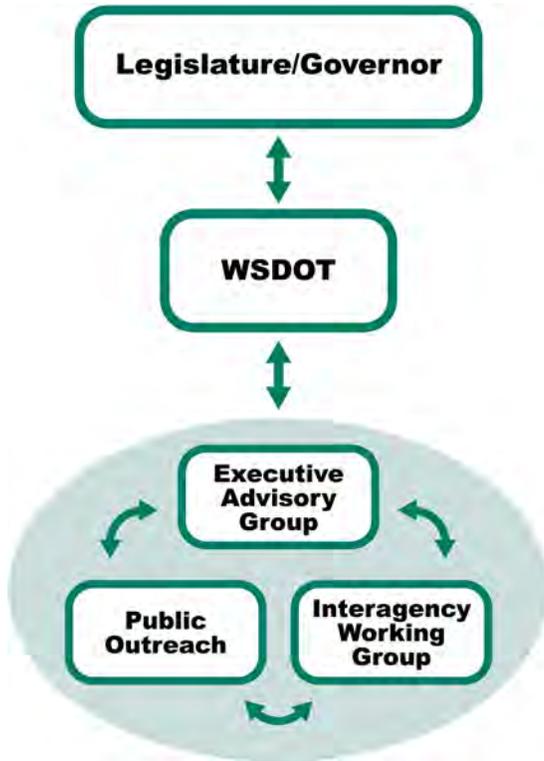


Figure 22: In developing this report, WSDOT consulted with key corridor stakeholder groups, conducted an array of briefings, and corresponded with members of the public.

Throughout 2013, WSDOT conducted public and stakeholder outreach to provide education and seek input about operating and funding express toll lanes throughout the full 40-mile I-405/SR 167 corridor.

Major outreach approaches included briefings with corridor elected officials, city councils, transit agencies, businesses and civic organizations; ongoing correspondence with interested citizens; and focus groups about carpool policy. Figure 22 illustrates this process.

## What were the goals of the public involvement process?

Through outreach to stakeholder groups and the public, WSDOT sought to:

- Solicit input and build consensus among stakeholder groups on key policy questions surrounding I-405 express toll lanes carpool policy and funding and phasing for the 40-mile express toll lane system;
- Begin to educate the public about the benefits of and policy decisions surrounding express toll lanes;
- Obtain market data on issues and barriers to support for express toll lanes;
- Inform the Washington State Legislature and the Washington State Transportation Commission as they conduct rate-setting and set carpool policy for I-405 express toll lanes; and
- Support WSDOT in developing its funding and phasing recommendations for the Governor and Legislature.

# How did WSDOT reach the public?

## Stakeholder advisory group meetings (EAG and IWG)

Continuing engagement with corridor communities has proven to be a highly successful tool for achieving consensus and results in the I-405/SR 167 Corridor. WSDOT successfully used an Executive Committee process to develop the I-405 Master Plan in 2002. In 2009, WSDOT convened the I-405/SR 167 Executive Advisory Group and Interagency Working Group for its Eastside Corridor Tolling Study process. Work with these groups culminated in the selection of a preferred option for I-405 express toll lanes.

Although EAG membership has changed over the years, some members have participated since the Master Plan development. The 2013 EAG included state legislators, mayors, council members and other elected representatives from cities and counties from the length of the I-405/SR 167 corridor. The group also included representatives from the Federal Highway Administration, Federal Transit Authority, Washington State Transportation Commission, Puget Sound Regional Council, local transit agencies, and regional counties.

WSDOT hosted four public EAG meetings between January and November 2013 in Bellevue, Kirkland and Renton. Craig Stone, Toll Division Assistant Secretary, chaired the group, representing the Transportation Secretary. WSDOT issued a press release before each meeting and publicized upcoming meetings on its website. Each meeting included a period for verbal comments from members of the public.



The EAG met four times in 2013 to review key policy information and to reach a consensus recommendation on carpool policy, and funding and phasing for the I-405 express toll lanes.

## 2013 Executive Advisory Group Membership

*City of Algona*  
**Mayor David Hill**

*King County*  
**Harold Taniguchi**

*City of Puyallup*  
**Mayor Rick Hansen**

*City of Auburn*  
**Mayor Pete Lewis**

*King County Council*  
**Councilmember Reagan Dunn**

*City of Renton*  
**Councilmember Randy Corman**

*City of Bellevue*  
**Councilmember Kevin Wallace**

*City of Kirkland*  
**Mayor Joan McBride**

*Sound Transit*  
**Board Member Fred Butler**

*City of Bothell*  
**Mayor Mark Lamb**

*City of Newcastle*  
**Mayor Rich Crispo**

*City of Sumner*  
**Mayor Dave Enslow**

*Federal Highway Administration*  
**Dan Mathis**

*City of Pacific*  
**Vacant**

*City of Tukwila*  
**Mayor Jim Haggerton**

*Federal Transit Authority*  
**Rick Krochalis**

*Pierce County Council*  
**Councilmember Jim McCune**

*Washington State Transportation Commission*  
**Commissioner Charles Royer**

*City of Kent*  
**Mayor Suzette Cooke**

*Puget Sound regional Council/  
Snohomish County Council*  
**Councilmember Dave Gossett**

*All corridor members of the Washington State  
Legislature*

To complement the EAG work, WSDOT re-engaged the I-405/SR 167 Interagency Working Group, composed of technical staff from local jurisdictions and transportation agencies. The IWG's primary role was to assist the EAG members in remaining fully informed throughout the process. Prior to the first three EAG meetings, WSDOT hosted an IWG meeting in which the team provided more detailed information on the complex topics that would be discussed at the upcoming meeting. Before the final meeting, WSDOT conducted one-on-one briefings as requested by stakeholders. WSDOT also conducted regular briefings in between meetings with cities and transit agencies that compose the IWG, as well as other interested businesses and organizations. Appendix 3 contains all of the meeting materials, including agendas, summaries and presentations.

## Government, business and civic outreach

In the months leading up to and throughout the Executive Advisory Group process, the I-405/SR 167 project team provided briefings to a large number of corridor elected officials, including six state representatives, four state senators and seven mayors. The briefings also reached local civic groups, such as the Bellevue Downtown Association, Eastside Transportation Association, Eastside Transportation Partnership and Kirkland Rotary; and key businesses, such as Boeing and Microsoft. A full listing of briefings is available in Appendix 3.

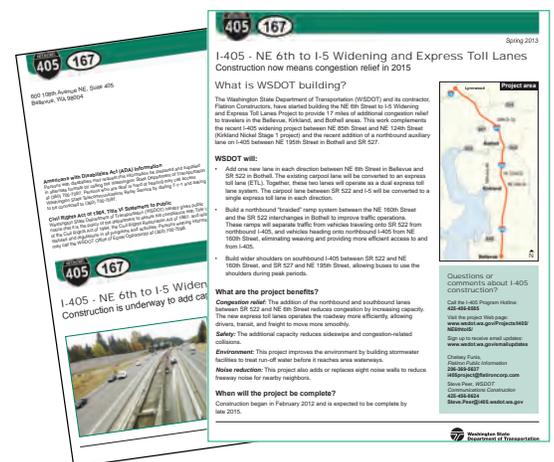
The briefings generally focused on project scope and schedule, financing and phasing options, information about I-405 express toll lanes, and carpool and operational policies. The intention of these briefings was to complement the EAG and IWG meetings and, in many cases, reach audiences who were unable to attend these meetings.

## Citizen correspondence

Between October 2012 and December 2013, the I-405 program received more than 50 comments or inquiries specifically about I-405 express toll lanes or the Executive Advisory Group process via e-mail, phone, or online comment forms. The primary themes of these communications were:

- Questions about occupancy requirements for free use of express toll lanes (carpool size, motorcycles, two-seater cars, vanpools, transit)
- Questions about the EAG meeting schedule, roster and participation
- Comments about increasing the 2+ carpool occupancy requirement to 3+
- Questions about *Good to Go!* pass requirements and other logistics regarding how to pay to use the future express toll lanes
- General questions about how express toll lanes work and how they will affect levels of traffic congestion in the general purpose lanes

WSDOT has created a number of print and online materials to inform the public about express toll lanes and the Executive Advisory Group process, including a project construction folio mailed to about 12,000 households within the Bellevue to Lynnwood project area during summer 2013.



## Focus groups

As referenced in Chapter 2, WSDOT conducted four focus groups in spring 2013 to gather more information about public attitudes and awareness about express toll lanes and proposed carpool policy changes.

The focus group moderators asked these groups their impressions of congestion on I-405 and SR 167 and presented them with three carpool options under consideration: 3+ carpools ride free; 3+ carpools ride free at peak times/2+ carpools ride free at off peak times; and all carpools receive a \$1.00 discount. Appendix 3 contains the full focus group moderator's guide and summary report of findings.

### *I-405 is not reliable during peak travel times*

Most of the participants agreed that during afternoon peak travel times on I-405, the carpool lanes were not as fast as they expected them to be, were not reliable for a faster trip, and were sometimes as slow as general purpose lanes. Most of the participants also agreed during morning peak travel times, the I-405 carpool lanes were slightly more reliable for providing a faster trip. The SR 167 carpools thought that the SR 167 HOT lanes are more reliable than carpool lanes on I-405.

On the topic of carpool policy, 4 of the 32 total participants said the 3+ carpool option was their first choice. They chose this option because they liked the revenue benefit for completing projects more quickly and understood existing overuse of carpool lanes. Most of the participants who preferred this option were existing SR 167 HOT lane users who already better understand the concept of managed lanes and their benefits.

### *Two-person carpools should retain some benefits*

However, most participants believed there should be some benefit for two-person carpools. As such, about one-third of the participants selected the 3+ carpool free at peak times/2+ carpool free at off-peak times option as their preferred choice, and half of them listed this option as their second choice. About half of the participants preferred the \$1.00 discount option over the other options. Some participants suggested an even larger discount would be desirable, suggesting that the \$0.50 cent discount developed and evaluated after the focus groups by the I-405/SR 167 team would not generate much public acceptance.

In general, participants wanted some advantage for two-person carpools. However, participants with experience on the SR 167 HOT lanes were more likely to prefer the 3+ carpool peak/2+ carpool off-peak option as their first choice and the 3+ carpool free option as their second choice. This information is consistent with WSDOT's 2009 focus groups, which found that support for express toll lanes increases with use.

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## Focus Groups Profile

The two-hour focus groups, which each had eight participants, represented a mix of gender, age, race, income and home locations.

The groups included the following participants:

1. *Good to Go!* account holders
  2. General I-405 and SR 167 users
  3. I-405 carpools/vanpoolers/transit users
  4. SR 167 carpools/vanpoolers/transit users
- 

### *Previous research*

As part of its 2009 study, WSDOT conducted four focus groups, an online survey and statistically valid phone survey to understand the public's attitude and awareness around express toll lanes on I-405 and SR 167. This research was consistent with the 2013 findings, notably, that people who understand the benefits of express toll lanes support them, and the most common reason people support express toll lanes is congestion relief. The 2013 focus groups built off the information gained from the 2009 work.

## Website

As in previous years, WSDOT used its branded I-405/SR 167 Eastside Corridor Tolling Study website ([www.wsdot.wa.gov/Tolling/EastsideCorridor](http://www.wsdot.wa.gov/Tolling/EastsideCorridor)) to publicize information about upcoming EAG meetings, share agendas and summaries, and provide answers to frequently asked questions about the express toll lanes project in general. Figure 23 shows a screen shot of this website.

A comprehensive project library also houses background materials spanning the life of the project. In fall 2013, WSDOT updated this website to include more comprehensive information about the I-405 express toll lanes. The public continued to use this website as a resource, as the main page and associated pages received more than 7,600 unique page views during 2013.

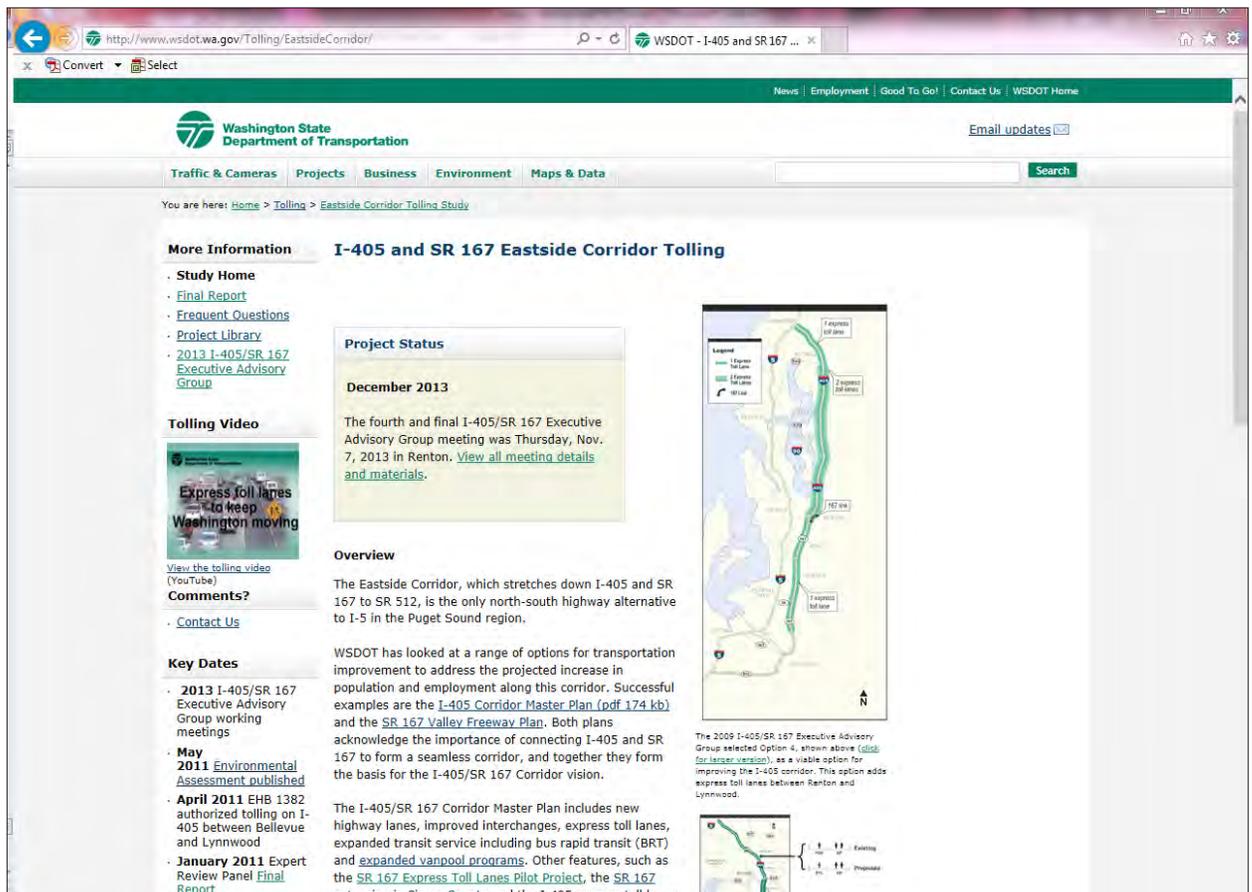


Figure 23: WSDOT's Eastside Corridor Tolling website serves as a central location for reader-friendly project information.



## Chapter 5 Next Steps

This report marks the culmination of several years of study on traffic performance and revenue potential as they relate to carpool policy, as well as funding and phasing, for the I-405 express toll lanes. A number of important steps remain before WSDOT can complete the 40-mile system.

### What policy decisions remain for Phase 1?

Before the new lanes open in 2015, the Washington State Transportation Commission and WSDOT will make several major decisions about the first phase of express toll lanes through its toll rate setting process. WSTC began its rate setting process in November 2013 and expects to wrap up its decision-making in spring 2014.

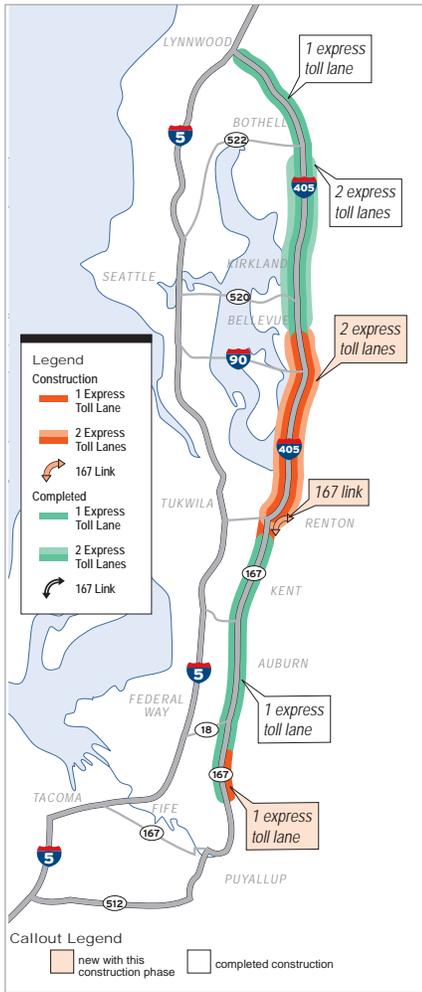
Major policy areas under discussion include:

- **Minimum and maximum toll rates:** Although the express toll lanes will have dynamic pricing determined by demand for available space in the lanes, WSTC can choose to impose a minimum and/or maximum toll rate.
- **Pay by mail rates:** Because of the additional costs associated with billing users by mail, WSTC will decide what additional cost these customers will pay in addition to the posted toll rate.
- **Carpool policy:** As discussed at length in Chapter 2, WSTC will decide which carpool types will be exempt from paying tolls in the express toll lanes and at what times.
- **Other exemptions:** WSTC will consider whether motorcycles, high-fuel-efficiency vehicles, and/or other types of vehicles receive a free ride in the express toll lanes. The authorizing legislation (RCW 47.56.880) already requires exemptions for transit and registered vanpools.
- **Hours of operation:** WSDOT will decide whether the express toll lanes facility operates 24 hours per day or for some more limited time period.
- **Transponders and carpool declaration:** WSDOT will decide on the appropriate transponders and declaration method for ensuring that carpools who qualify for a free trip are able to receive one.



I-405 express toll lanes between Bellevue and Lynnwood, shown in this visualization, are on track to open in 2015.

## Phase 2 of the 40-mile system



## What are the next steps for completing Phase 2 and the 40-mile system of express toll lanes?

WSDOT is currently on track to open Phase 1 of express toll lanes between Bellevue and Lynnwood on schedule in mid to late 2015. The agency will continue to settle important policy decisions and conduct public outreach before the new lanes open to traffic.

Meanwhile, the agency will continue to work with the Legislature and stakeholders on funding for Phase 2 of express toll lanes between Renton and Bellevue, including the I-405/SR 167 Direct Connector, and for the SR 167 HOT lanes extension.

If full funding was made available in 2014, Phase 2 could be open as early as 2020. If two years of toll collection experience from Phase 1 is desired, the project could open as early as 2022, as shown in Figure 24.

In the longer term, WSDOT plans to work collaboratively with corridor stakeholders to identify and move forward with completing additional Master Plan improvements.

## Proposed project schedule endorsed by 2013 Executive Advisory Group

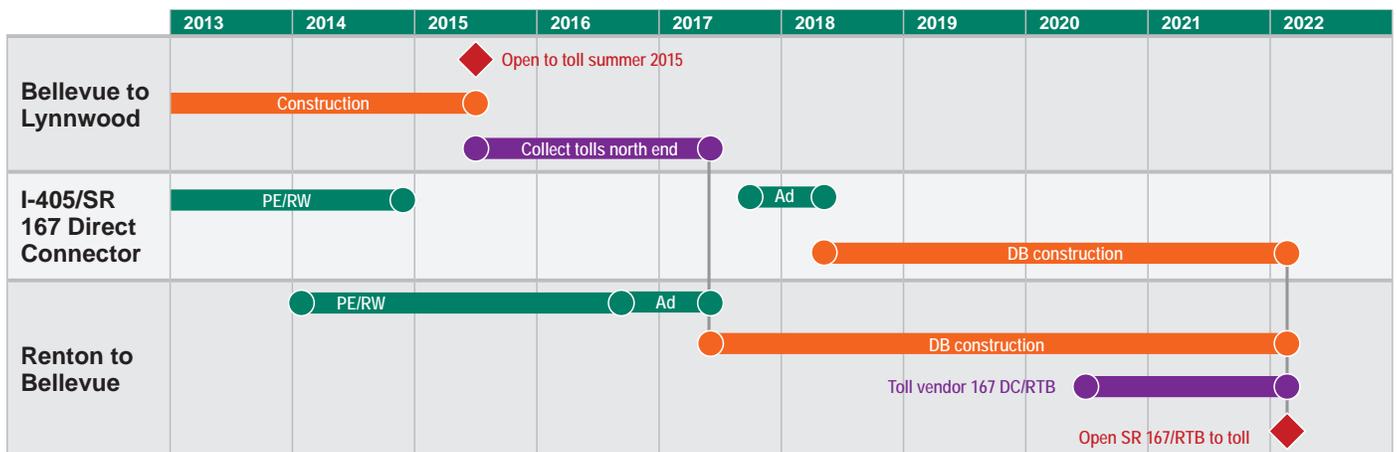


Figure 24: This diagram shows the proposed schedule for implementing Phase 2 improvements if full funding is received.



# Appendices

Appendices to the I-405/SR 167 Corridor Funding and Phasing Report include detailed information and analysis that support the findings and observations presented in this summary report. These appendices can be found on our Web site at [www.wsdot.wa.gov/Tolling/EastsideCorridor/](http://www.wsdot.wa.gov/Tolling/EastsideCorridor/).

WSDOT will also provide appendices upon request by contacting Amy Danberg, I-405/SR 167 Corridor Public Information, at: [amy.danberg-consultant@i405.wsdot.wa.gov](mailto:amy.danberg-consultant@i405.wsdot.wa.gov).

1. 2012 Planning Level Traffic and Revenue Study  
*Prepared by CDM Smith*
2. Net revenue tables for carpool scenarios
3. Public information and Executive Advisory Group materials
  - I-405/SR 167 Executive Advisory Group meeting presentations and summaries
  - EAG interest letter
  - Briefings calendar
  - Focus groups moderator guide and summary report



# How do I get more information?

The complete report and all report appendices are available on our website at: [www.wsdot.wa.gov/Tolling/EastsideCorridor/](http://www.wsdot.wa.gov/Tolling/EastsideCorridor/)

## For more information, you may also contact:

Amy Danberg

Public Information, I-405/SR 167 Corridor

600 108th Avenue NE, Suite 405

Bellevue, WA 98004

425-456-8585

[amy.danberg-consultant@i405.wsdot.wa.gov](mailto:amy.danberg-consultant@i405.wsdot.wa.gov)

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