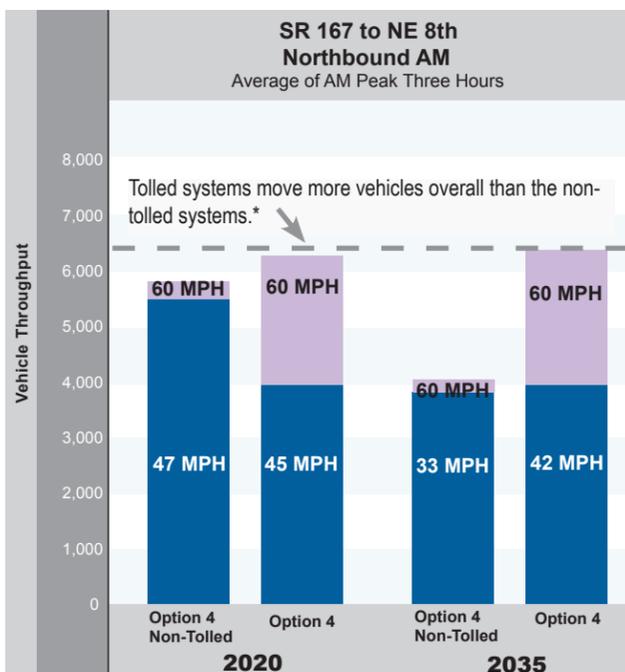
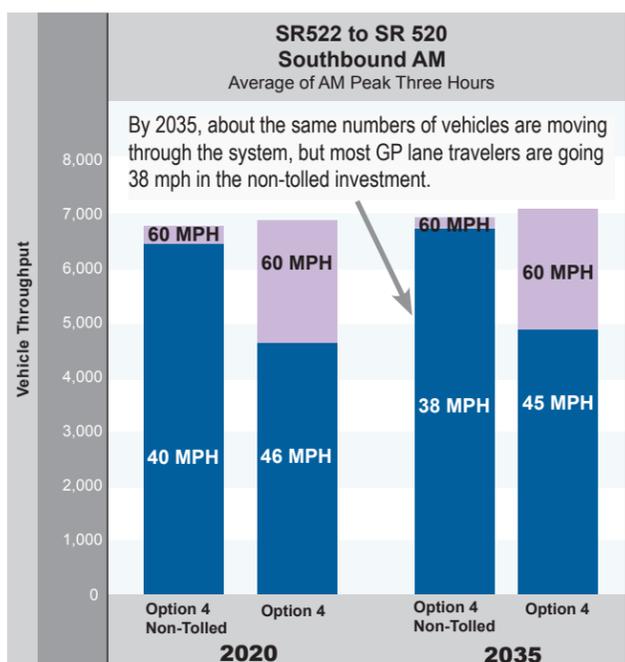


# I-405/SR 167 Corridor Traffic Performance Tolled vs. Non-tolled Improvements in 2020 and 2035

The I-405/SR 167 Corridor is the only parallel alternative to I-5, serving about one million trips per day. Congestion can last up to 10 hours a day, including congested HOV lanes during peak times. Regional growth is expected to expand over the next 20 years, meaning about 1.5 million trips per day on I-405 by 2030, resulting in more congested conditions. This graphic details the Option 4 solution developed in WSDOT's 2010 Eastside Corridor Tolling Study, and compares a tolled and non-tolled investment.

**Legend**  
■ HOV (non-tolled) / express toll lanes  
■ General purpose (GP) lanes



\* Not only does the tolled investment move more vehicles overall than the non-tolled investment, it moves more vehicles at 60 mph. Comparing options, GP lane speeds do not change very much until you get to 2035, when GP lane speeds slow down to 33 mph with the non-tolled investment. Over time, GP lanes fill up and consequently slow down. Because express toll lanes manage traffic with dynamic tolls, they keep vehicles moving at 60 MPH into the future.

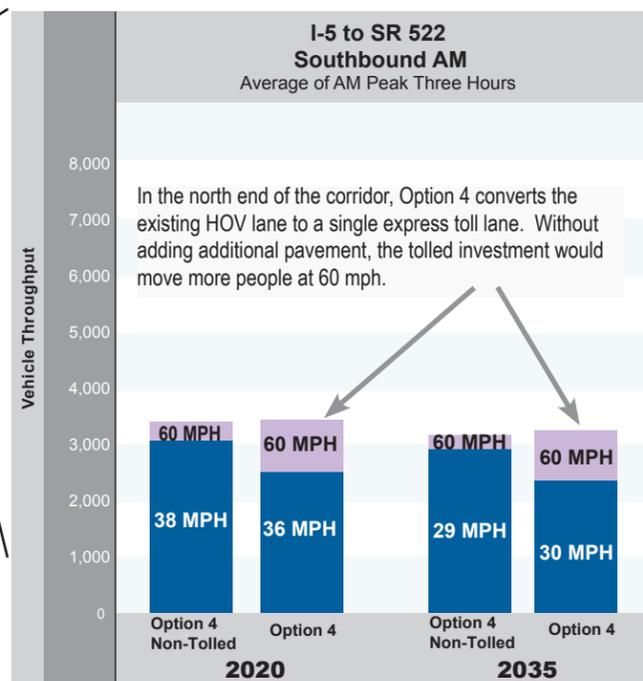
## Express Toll Lanes Deliver Long-term Performance

Looking at vehicles and speeds from 2020 to 2035, the non-tolled investments degrade over time causing worse congestion and slower speeds. The tolled option accommodates economic and population growth, allowing for greater throughput and much higher speeds into the future.

### By the numbers

Modeled Network Performance Measures for AM Peak Period in 2035

	Option 4 Non-Tolled	Option 4 Tolled	% Difference
Vehicle Throughput (no. of vehicles)	212,900	242,950	+14%
Average Speed (mph)	27	37	+37%
Total Travel Time (hours)	56,225	48,150	-14%
Average Delay per Vehicle (sec.)	430	240	-44%

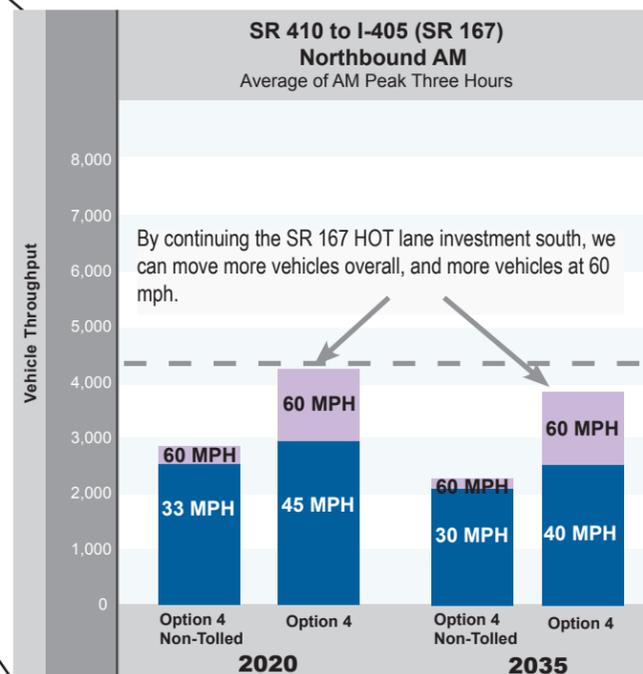


## Why Express Toll Lanes?

Express toll lanes keep us moving by using dynamic tolls to manage traffic flow. These dynamic tolls are based on supply and demand—when space is available, tolls are low for non-HOVs; when less space is available, the toll increases to reduce the number of non-HOVs entering the lanes. HOVs and transit may use the express toll lanes anytime toll-free. Toll revenue from the I-405/SR 167 express toll lanes would be used to further fund completion of corridor Master Plan projects.

## I-405/SR 167 Direct Connector

### Critical Link



## What happens if there is no further investment in the corridor?

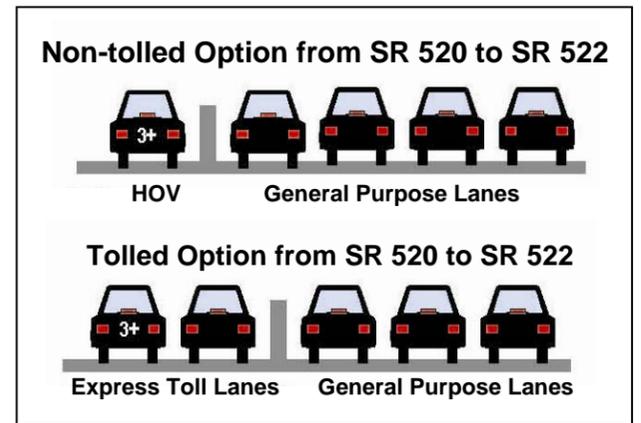
Today, we know that I-405 between Tukwila and Bellevue is one of the most congested freeway sections in the state (according to WSDOT's 2010 Congestion Report). Like the rest of the corridor, the HOV and GP lanes are congested during the peak commute hours. Transit and carpools cannot depend on a reliable HOV lane trip on I-405.

WSDOT is studying the concept of operating two lanes as express toll lanes in the funded "NE 6<sup>th</sup> to I-5 Widening Project," creating Phase 1 of an I-405/SR 167 corridor implementation strategy. Phase 2 would build out the remaining 40-mile express toll lane system as illustrated in Option 4 of the Eastside Corridor Tolling Study (January 2010). The ultimate vision, or master plan, is to improve passenger and freight mobility along the I-405/SR 167 corridor and reduce traffic congestion in a manner that is sustainable, flexible, safe, reliable, and cost-effective. Express toll lanes are an effective way to operate the I-405/SR 167 corridor lanes by managing congestion, while generating revenue for future projects.

**I-405/NE 6<sup>th</sup> to I-5 Widening Project status:** WSDOT is conducting an environmental analysis (EA) to assess how to operate additional capacity between NE 6<sup>th</sup> Street in Bellevue and I-5 in Lynnwood. The new lane could either be combined with existing HOV lanes to create a two lane express toll lane system in both directions on I-405, or could operate as general purpose (GP) lane (see diagram to right).

**Why express toll lanes on the I-405/SR 167 Corridor?** Based on our experience with the SR 167 HOT lanes, comparable national projects, and the I-405/SR 167 traffic and revenue study, express toll lanes can:

- **Improve highway efficiency:** Solo drivers who pay a toll to use available space in the express lane free up space in the GP lane resulting in more efficient use of all lanes. For example, I-95 in Florida has seen a dramatic improvement in average lane speeds, including an increase from 18 mph to 57 mph in the express toll/HOV lane, while speeds in the general purpose lane improved from 19 mph to 40 mph.
- **More options for drivers:** Drivers who want a faster, more reliable trip can choose to use the HOV lane for a fee. Today, a northbound SR 167 HOT lane driver saves an average of eight minutes during the peak travel time.
- **Generate revenue:** Tolls pay for express toll lanes operations and would be reinvested into the I-405/SR 167 corridor to finance future improvements.



The diagram above shows the non-tolled and tolled lane configuration alternatives under consideration in the environmental assessment for the I-405/NE 6<sup>th</sup> to I-5 Widening Project.

**How does charging a toll help relieve congestion?** Through *dynamic pricing*, which prevents overcrowding, WSDOT can keep the express toll lanes moving at 45 to 60 mph by allowing drivers to pay a toll to use the express toll lane system. The Eastside Corridor Tolling Study demonstrated express toll lanes can move up to 31% more people and vehicles at free-flow speeds than GP lanes in a 40-mile system (Option 4). Local city streets also benefit from express toll lanes, as existing arterial trips tend to move back to the freeway if it's less congested.

**Can express toll lanes also help relieve GP lane congestion?** Yes. Not only does a tolled investment move more vehicles overall than the non-tolled investment, it moves more vehicles at 60 mph. As the chart on the reverse side of this document shows, by 2035 the express toll lane option will increase average speeds on I-405 by 36% and overall throughput of traffic by 14%. In the Renton to Bellevue area, GP traffic will see their speeds increase in 2035 by 27% with the express toll lane option.

**How does a 3+ toll-free carpool lane affect performance of the express toll lanes?** Today, the 2+ HOV lanes on I-405 are congested and not providing reliable service to transit or carpools. If we changed the HOV requirement to a minimum of three people in a carpool, the lane would be underused. In an express toll lane, we give people the choice to pay a toll to utilize the available HOV lane space, which in turn takes some pressure off the GP lane while still keeping transit and HOVs moving. Some states have implemented a system where the HOV lane is 3+ during the peak commute hours and 2+ during the rest of the day, as a way to phase in a solution.

**How have the SR 167 HOT lanes performed overall since opening?** WSDOT's data indicates that when the GP lanes begin to slow, many solo drivers are choosing to pay a toll for a reliable free flowing trip in the HOT lane. As more drivers opt out of the GP lanes, it frees up space, decreasing congestion. Stop-and-go traffic clogs the whole freeway's efficiency when it is most needed – during peak period, or *rush hour* traffic. HOT lanes have helped increase speeds in both the GP and HOT lanes, increasing the freeway's "throughput" (vehicles moving through the freeway).

In July 2010, WSDOT phone-surveyed SR 167 HOT lane users without *Good To Go!* accounts, and performed an on-line survey of *Good To Go!* account holders. Overall people felt that HOT lanes are working and should be expanded.

- ✓ Nearly 75% of drivers with *Good To Go!* accounts and over 60% of all other SR 167 drivers think it's a good idea to allow single drivers to use the HOV lanes by paying a toll.
- ✓ Almost 60% of all SR 167 drivers think HOT lanes should be opened on other freeways in our region.
- ✓ More than 66% of carpools reported being satisfied with their travel time and do not think HOT lanes slow down transit and carpools.

**Where else are express toll lanes used?** Though no two systems are exactly the same when looking at factors like the surrounding population, urban vs. rural environment, financing model, delivery method, and operations; other major corridors around the country which are seeing benefits from a two-lane express toll system. Houston's Katy Freeway, San Diego's I-15, and Miami's I-95 Express Lanes are similar corridors to I-405 and have had success from using tolls to manage congestion. For example, I-95 in Florida has seen a dramatic improvement in average lane speeds, including an increase from 18 mph to 57 mph in the express toll/HOV lane, while speeds in the general purpose lane improved from 19 mph to 40 mph.

**Are Express Toll Lanes part of the Corridor Master Plan?**

**What did the Master Plan say about Express Toll Lanes?** Express toll lanes, or *managed lanes*, were part of the I-405 Record of Decision (ROD), and the Legislature has consistently asked for further managed lane studies on I-405. Beginning in 2002, the I-405 Corridor Environmental Impact Statement (EIS) recommended WSDOT further evaluate managed lanes (express toll or HOT lanes) on I-405. The ROD specifically states, "The proposed I-405 freeway design includes a buffer separating the general purpose lanes and the high-occupancy vehicle (HOV) lane to provide safer and more reliable HOV and transit operations within the corridor. This design allows for future consideration of expanded managed lanes operations on I-405, which could include managing up to two lanes in each direction" (pg. 5). WSDOT had always intended to build up to two new lanes, but further analysis was needed on how to best operate them.

**Which performs better, adding GP lanes or adding express toll lanes?** Traffic and revenue analyses indicate more people and vehicles can be moved with express toll lanes, compared to adding GP lanes. For the corridor-wide solution, express toll lanes move 31% more people and vehicles at free-flow speeds than a GP lane approach, and give commuters a choice for a free-flowing trip. GP lanes can be a good short-term fix, but express toll lanes can relieve congestion *sustainably* with dynamic pricing that adjusts according to supply and demand. Also, corridor-wide speeds are higher across all lanes with express toll lanes operations as seen in the charts on the reverse side of this document.

**Are you converting GP lanes into express toll lanes?** WSDOT is not converting GP through-lanes on I-405; however existing auxiliary lanes may be extended as through lanes in an express toll system. Some of the existing auxiliary lanes were spot fixes as part of a *worst-first* strategy to relieve corridor congestion chokepoints. Whether operating new lanes as GP or express toll, these auxiliary lanes were planned to be extended as through lanes.

**How will the state pay for the Express Toll Lane System?**

**Will express toll lanes pay for the Master Plan?** Phase 1 is fully funded, including \$403 million from the 2003 and 2005 gas taxes. In addition, toll revenues can be leveraged to meet a significant portion of the funding gap for the Phase 2 corridor system. As a next step, WSDOT will develop a financial plan for the corridor-wide solution, considering risk constraints with respect to toll revenue bonds. Toll revenue bonds alone, however, are unlikely to be sufficient to fill the funding gap. A funding *mosaic*, including toll concessions, toll revenue availability payments, and partnerships with other funding entities (public and private) have worked well in other areas of the country.

**What if express toll lanes don't meet revenue or performance projections?** If the express toll lanes do not perform as expected after the public has adjusted to the operations of the dynamically-tolled lanes, WSDOT and the Legislature could choose to operate the lanes as a GP and HOV lane. Building the existing funded NE 6<sup>th</sup> to I-5 Widening Project with express toll lanes allows WSDOT to get started with implementation in the north corridor. Tolling experience gained through this project will determine the ability to bond against future improvements in the corridor without putting the state at risk while ensuring the project meets performance expectations.

**What is the toll revenue used for?** Here in Washington, current RCW 47.56.820 states that "all revenue from an eligible toll facility must be used only to construct, improve, preserve, maintain, manage, or operate the eligible toll facility on or in which the revenue is collected." WSDOT, with Legislative authorization, would use toll revenue generated on the I-405/SR 167 corridor on further improvements to the corridor. Once we can begin collecting tolls, the top priority projects include future infrastructure improvements within the corridor master plan.

**What is the average toll rate people will pay?** For Option 1 in year of opening, the average toll on a typical commute day during peak hour will be about \$.23/mile or \$2.30 for a 10-mile average commute, with rates dynamically priced based on traffic volumes. In comparison, current average tolls for the 9-mile SR 167 HOT lanes are \$1.00. As we forecast into the future, population and employment projections are combined with users' willingness-to-pay to estimate demand for the Express Toll Lanes. When the 40 mile system is built, future traffic growth will push toll rates higher. Most people will use it when they need to get somewhere on time, or will use segments to get from home to work. It's rare that someone would use the entire 40-mile system for their daily commute (only .01% would make this trip).