

I-405 Express Toll Lanes: 15 Months of Operations

THIS REPORT REVIEWS DATA FROM THE FIRST 15 MONTHS OF OPERATIONS
(OCTOBER 2015 - DECEMBER 2016) OF THE EXPRESS TOLL LANES.



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Highlights

The Washington State Department of Transportation (WSDOT) launched 17 miles of express toll lanes on Interstate 405 between the cities of Bellevue and Lynnwood on Sept. 27, 2015. Between then and Dec. 31, 2016, drivers made nearly 18 million trips on the express toll lanes. The corridor, one of the most congested in the state, is moving a higher volume of vehicles than before tolling, yet express toll lanes are still providing a valuable option for carpools, transit and toll paying users to access faster, more predictable trips. In 2015, WSDOT instituted three goals for the express toll lanes; this report examines how the express toll lanes are meeting those goals.

Goal #1: Provide a choice for drivers

- On average, express toll lanes provide 51,000 faster, more predictable trips each weekday for 37,000 toll paying- vehicles and 14,000 toll-exempt carpools.
- Nearly 70 percent of vehicles that use the express toll lanes only use them one to five times a month, indicating most drivers are choosing to use the facility only when they need it most.

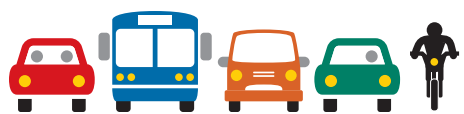
Goal # 2: Provide a faster and more predictable trip

- Compared to vehicles in the general purpose lanes, vehicles making full corridor trips saved 15 minutes northbound and 11 minutes southbound during the peak periods.
- Express toll lanes maintain higher average speeds than general purpose lanes, moving 20 mph faster southbound and 24 mph faster northbound during peak periods.

Goal #3: Fund future improvements

- Since opening, the express toll lanes have generated \$27.4 million in gross revenue, while operations and maintenance costs totaled \$9.9 million.
- Toll revenue is being used to build a new general purpose peak-use shoulder lane between SR 527 and I-5 in Lynnwood to improve northbound congestion, scheduled to open in spring 2017.

17.9 MILLION TOTAL TRIPS



12.5 MILLION TOLLED TRIPS

5.4 MILLION FREE HOV TRIPS

51,000+ DAILY TRIPS
have a faster and more reliable trip

TOLL PAYERS
37,000 vehicles
per day

CARPOOL
14,000 vehicles
per day

SUMMER 2016
FUNDED FIRST IMPROVEMENT
WITH TOLL REVENUE



SPRING 2017
PEAK-USE SHOULDER LANE
OPENS TO GENERAL TRAFFIC

Background

In 2011, the state Legislature authorized express toll lanes on I-405 between NE 6th Street in Bellevue and I-5 in Lynnwood to provide a more predictable trip for transit, vanpools and carpools and to create a sustainable solution for traffic management. The lanes also provide a choice for non-carpool drivers to pay a toll for a faster trip when they need it, generating funds to operate the system and fund future corridor improvements. More detailed project history can be found on WSDOT's website at www.wsdot.wa.gov/Projects/I405/.

The Puget Sound Regional Council projects that nearly one million people will move to the region in the next 25 years, with a high concentration of new population in areas served by I-405, one of the state's most congested corridors. Between June 2015 and June 2016, the region grew by over 86,000 people¹ and gained over 64,000 jobs². Traffic volumes have increased at almost all locations on major regional roadway facilities. Despite higher traffic volumes, the I-405 express toll lanes are providing value to users in the form of faster speeds, reduced travel times and more predictable trips.

This update includes data and observations from the first 15 months of express toll lane operations. For a more detailed look at legislatively mandated reporting metrics, please see Appendix A. WSDOT will continue to deliver performance reports through the first 24 months of operations.

Operational parameters: The following parameters define how the express toll lanes operate and are critical to understanding the data and analysis discussed in this report:

- The I-405 express toll lane corridor is made up of single and dual-lane sections. The 7.9 mile portion of the system with two lanes in each direction between Bellevue and Bothell is referred to as the **dual-lane section**. The 7.15 mile portion of the system with one express toll lane in each direction between Bothell and I-5 in Lynnwood is referred to as the **single-lane section**.
- The I-405 express toll lanes only operate as a tolled facility on **weekdays between 5 a.m. and 7 p.m.** During all other days and times, the lanes are open to all traffic.
- Carpools with enough occupants may use the express toll lanes for free with a Flex Pass set to HOV mode. The carpool requirement, set by the Transportation Commission, allows vehicles with three or more occupants to travel toll-free during peak travel times on weekdays (5-9 a.m. and 3-7 p.m.) and vehicles with two or more occupants to travel toll-free on weekdays from 9 a.m. to 3 p.m.

¹ Source: See www.psrc.org/assets/14735/Trend-Population-201607.pdf

² Source: See www.psrc.org/assets/14876/Trend-Jobs-201609.pdf

- **Trip categories:** The following categories define toll trips.
 - Toll-exempt: Carpools traveling toll-free with a Flex Pass set to HOV mode, and motorcycles with a motorcycle pass.
 - Photo toll: Vehicles who pay the toll through a photo of the vehicle license plate. There are two types of photo tolling:
 - > Pay By Plate - License plates registered to a *Good To Go!* account; drivers are charged an additional 25 cent fee per trip.
 - > Pay By Mail - Drivers without a *Good To Go!* account receive toll bills through the mail for an additional \$2 per trip.
 - *Good To Go!* pass: Non-carpools that pay a toll using any *Good To Go!* pass installed in their vehicle; this method is the most inexpensive way to pay a toll.
- Peak Time, Peak Direction: southbound morning period (5 a.m.-9 a.m.) and northbound afternoon peak period (3 p.m.-7 p.m.)

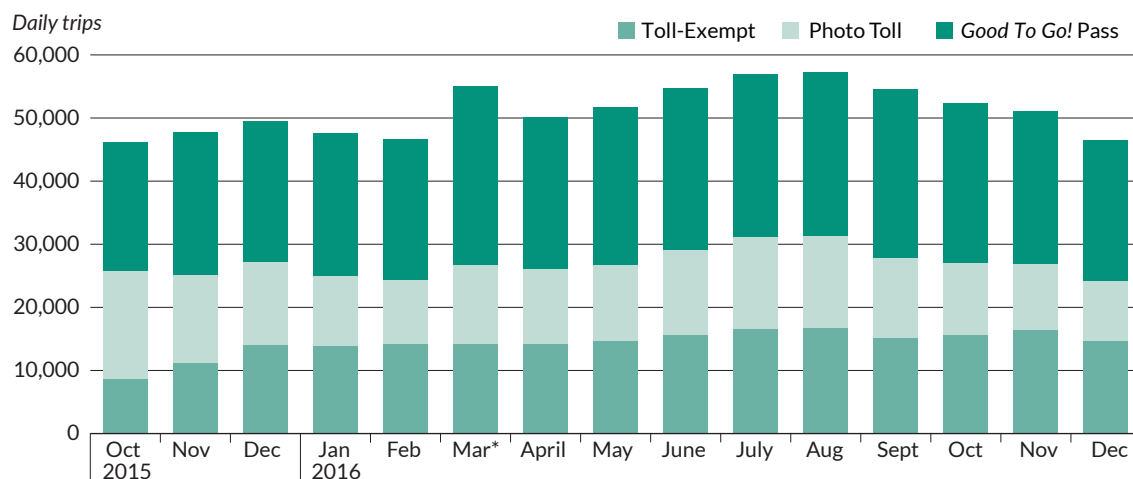
Goal #1: Provide a choice for drivers

The Puget Sound Regional Council projects that nearly one million people will move to the region in the next 25 years, with a high concentration of new population in areas served by I-405, one of the state’s most congested corridors. The rapid growth in population and jobs in the Puget Sound area has increased traffic volumes on I-405 between Bellevue and Lynnwood, creating some of the worst gridlock in the state. Despite the increased number of vehicles on the corridor, the I-405 express toll lanes offer drivers the choice to access faster speeds, reduced travel times and more predictable trips.

I-405 express toll lanes provided 51,000 faster, more predictable trips each weekday for 37,000 toll paying vehicles and 14,000 toll-exempt carpools.

In 2016, of the average 51,000 trips taken each weekday on the express toll lanes, 37,000 were by vehicles that opted to use the lanes for a toll. Data shows that drivers use the express toll lanes when they need them. On average, 70 percent of express toll lane vehicles use the lanes only one to five times each month, validating that drivers value the choice for a faster trip. Weekday express toll lane usage has remained fairly steady, even after the hours of operation were reduced in March 2016, and new vehicles continue to enter the lanes every month.

Average Weekday Trips by Type- Oct. 1, 2015 to Dec. 31, 2016



*On March 18, 2016, tolling hours changed from all weekday trips (24hrs/day) to weekdays 5a.m. to 7p.m.

The overall volume of vehicles on I-405 has increased since the implementation of tolling which has driven higher demand for a faster, more predictable trip. During the first 15 months of operations, the express toll lanes carried 32 to 35 percent of the total I-405 weekday peak period volumes in the dual-lane section, and between 24 and 33 percent in the single-lane section. The number of trips taken in the express toll lanes was higher than forecasted during the first four quarters of operation but dropped slightly below forecast in the most recent quarter.

In the last quarter (October-December 2016), 80 percent of all tolls collected were between 75 cents and \$4. The average toll for all trips was \$2.27 while the average toll for peak period, peak direction trips is \$3.34.

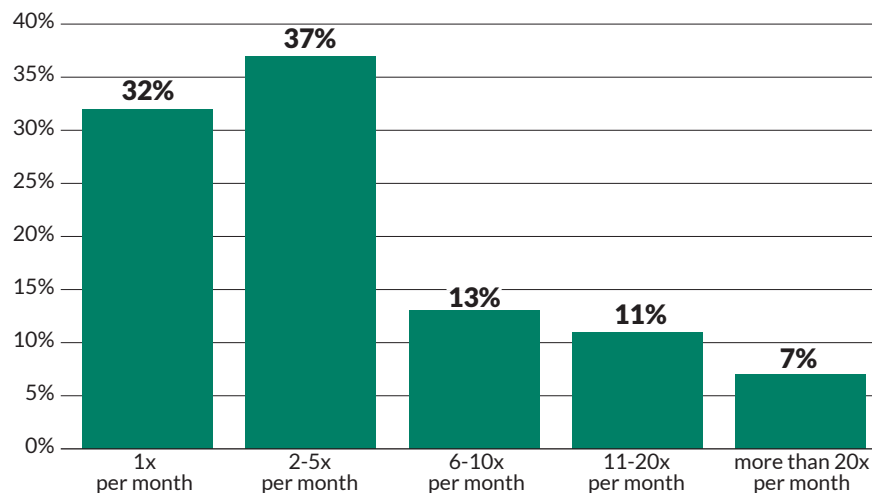
Drivers use the express toll lanes when they need them

WSDOT analyzed trip data to determine how often each individual vehicle with an active *Good To Go!* pass used the express toll lanes, including both tolled and toll-exempt trips during hours of operations when tolling is in effect. Trip frequency trends remained stable during the first 15 months of operations:

- 32 percent of vehicles were occasional users of the express toll lanes, making just one trip a month.
- 37 percent of vehicles were semi-frequent users, with between two and five trips a month.
- 13 percent of vehicles frequently used the express toll lanes, making between 6 and 10 trips a month.
- The highly frequent users, making 11-20 trips per month or more than 20 trips per month, total 18 percent of I-405 express toll lane users.

This data supports conclusion that drivers use the express toll lanes when they need them.

Average Monthly Travel Frequency for *Good to Go!* Pass Holders – Oct. 1, 2015 to Dec. 31, 2016

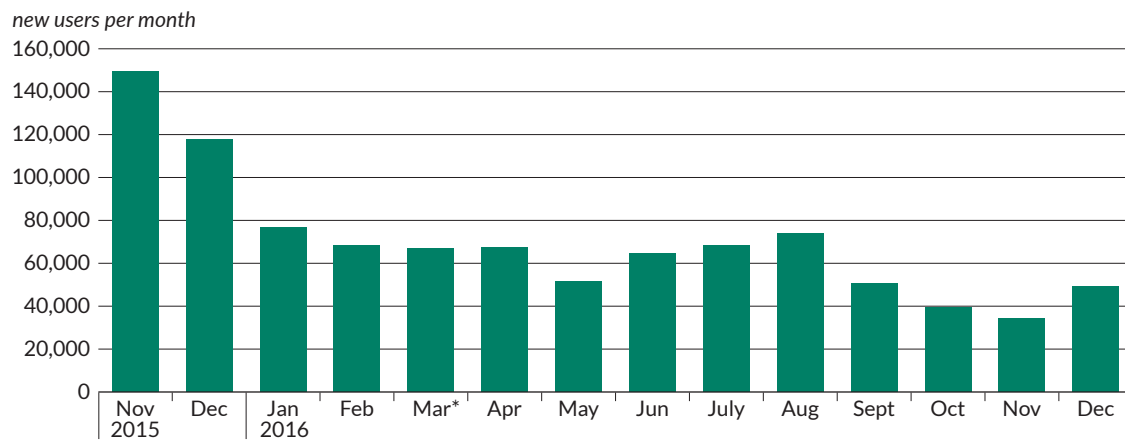


Comparison of the frequency of drivers using the express toll lanes by measure of unique Good to Go! passes during weekdays.

Continuing to see new vehicles each month

WSDOT analyzed monthly trip data to determine how many vehicles used the express toll lanes for the first time in a given month. This analysis includes both toll paying and toll-exempt trips for all vehicles traveling on the express toll lanes. As the regional population continues to grow, express toll lanes are helping to take on the demand from new drivers, relieving pressure on other lanes. Even after the initial one year ramp-up period, between 35,000 and 54,000 new vehicles entered the lanes for the first time each month. This graph also indicates that the 'ramp-up' period is slowing as more drivers become familiar with the express toll lanes.

First time vehicles in express toll lane by month – Nov. 1, 2015 to Dec. 31, 2016



*On March 18, 2016, the hours of operation changes from 24 hours a day/7 days a week to Monday-Friday 5 a.m. to 7 p.m.

Express toll lanes carrying high volumes

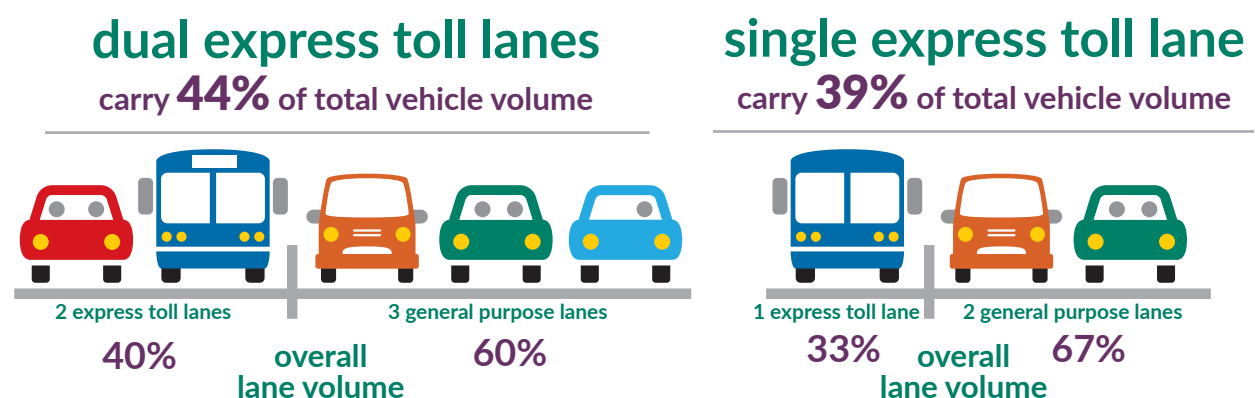
As part of the I-405 NE 6th to I-5 Widening and Express Toll Lanes Project, WSDOT built a new lane between Bellevue and the SR 522 interchange in Bothell. Since WSDOT added the new lane and opened the express toll lanes, the corridor has carried rising volumes.

Using sensors in the roadway, WSDOT collected traffic counts on the stretch of I-405 between Bellevue and Lynnwood. Volumes were reported at eight sample locations, four in the northbound direction and four in the southbound direction. In the dual-lane section, sensors collect traffic data at NE 53rd St and NE 100th St. In the single-lane section, the sensors are located at the I-405 interchanges with State Route 522 and State Route 527.

During the peak periods, over the past 15 months the express toll lanes carried 32 to 35 percent of the total I-405 volumes in the dual-lane section, and between 24 and 33 percent in the single-lane section. Compared to the average volumes carried by the HOV lanes the year prior to tolling, this represents a growth of up to 16 percent in peak period volumes in the dual-lane section, and up to 8 percent in the single-lane section.

The express toll lanes are moving high volumes when congestion is at its worst. To better understand express toll lane performance during peak periods, we looked at average volumes in 15 minute increments during the peak period, peak direction hours. We saw that express toll lanes moved higher per lane volumes than the general purpose lanes when overall volumes are at their highest.

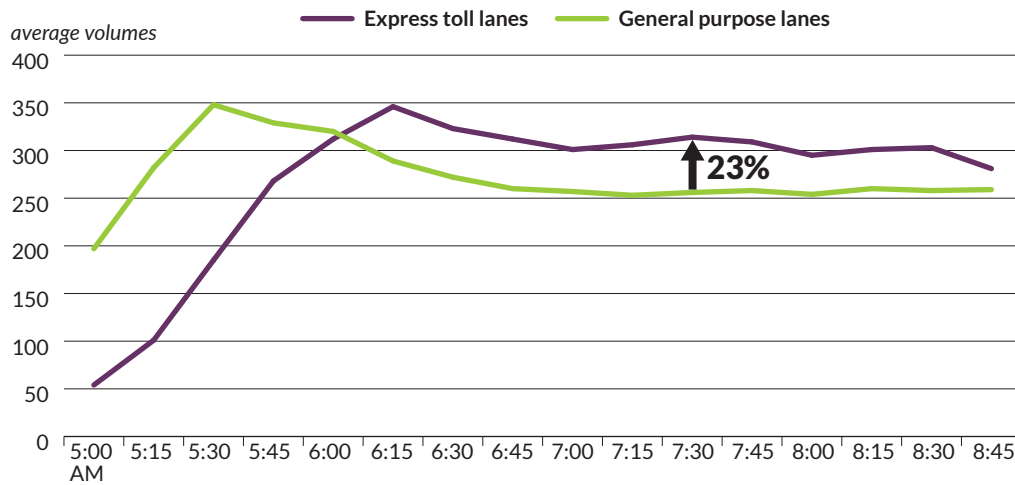
Peak hour of peak period



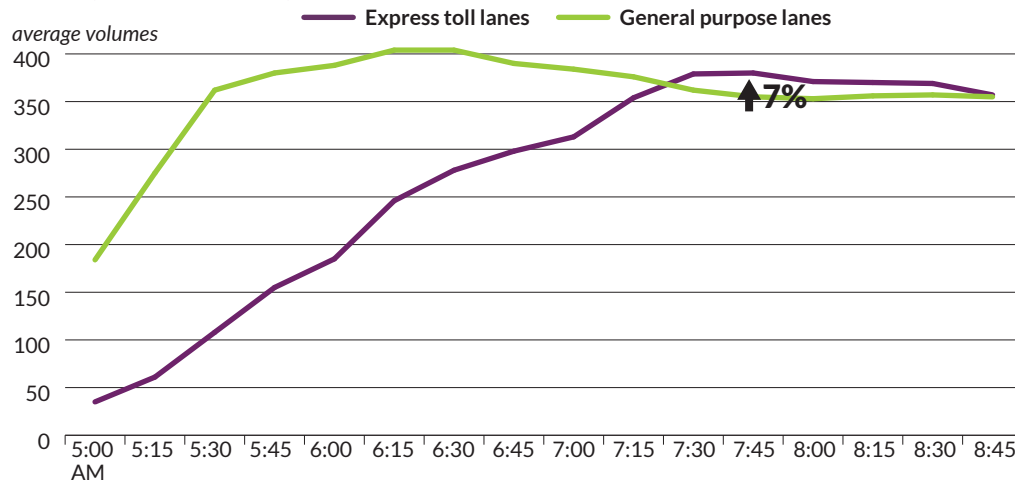
Southbound Peak Period Volumes

During the southbound morning peak period, we observe that when overall volumes are ramping up, less vehicles use the express toll lanes. As volumes in the general purpose lanes begin to reach their peak, more vehicles opt to move into the express toll lanes, leading the express toll lanes to eventually start moving higher per-lane volumes than the general purpose lanes, throughout the morning period.

SR 522 interchange 15-minute traffic volumes per lane during southbound peak period - Oct. 1, 2016-Dec. 31, 2016



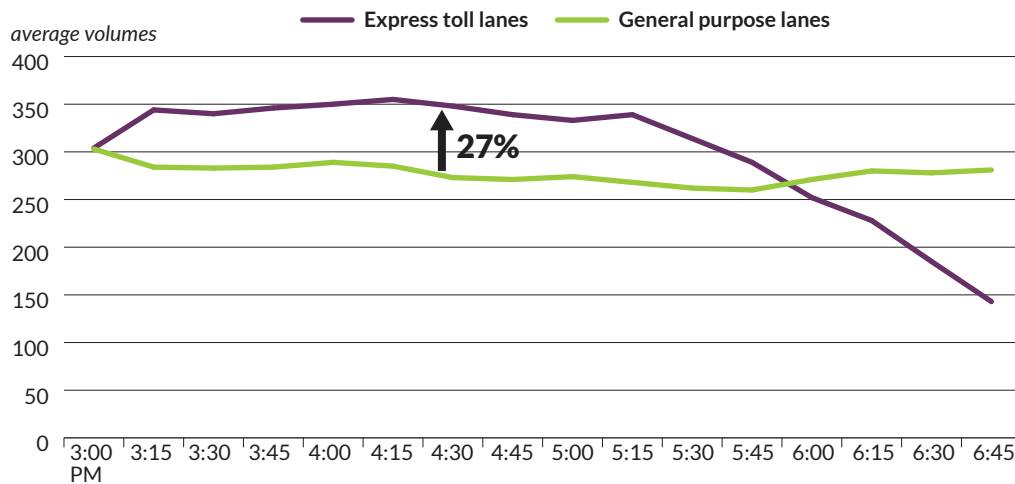
NE 53rd St 15-minute traffic volumes per lane during southbound peak period - Oct. 1, 2016-Dec. 31, 2016



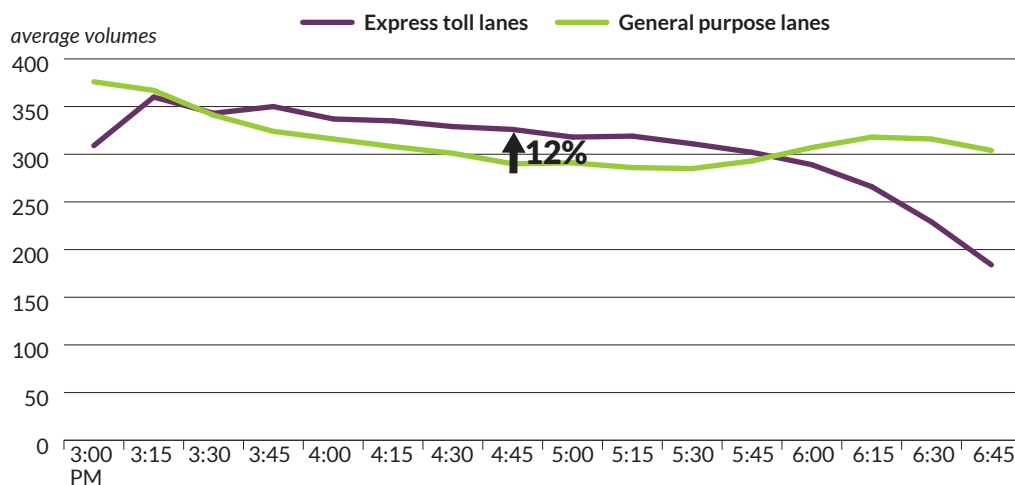
Northbound Peak Period Volumes

During the northbound afternoon peak period on I-405, we observe a consistently higher per-lane volume of vehicles moving in the express toll lanes compared to the general purpose lanes. Instead of the ramp up period observed in the southbound morning peak period, volumes are already high by 3 p.m. and remain high for the majority of the peak period. Express toll lanes move higher per-lane volumes than the general purpose lanes for the majority of the peak period, until they start ramping down when demand starts to decrease. We observed declining volumes towards the end of the peak periods. Compared to the southbound peak period, per-lane volumes are higher in the express toll lanes for longer periods during the northbound afternoon peak period.

NE 53rd St 15-minute traffic volumes per lane during northbound peak period - Oct. 1, 2016-Dec. 31, 2016



SR 522 interchange 15-minute traffic volumes per lane during northbound peak period - Oct. 1, 2016-Dec. 31, 2016

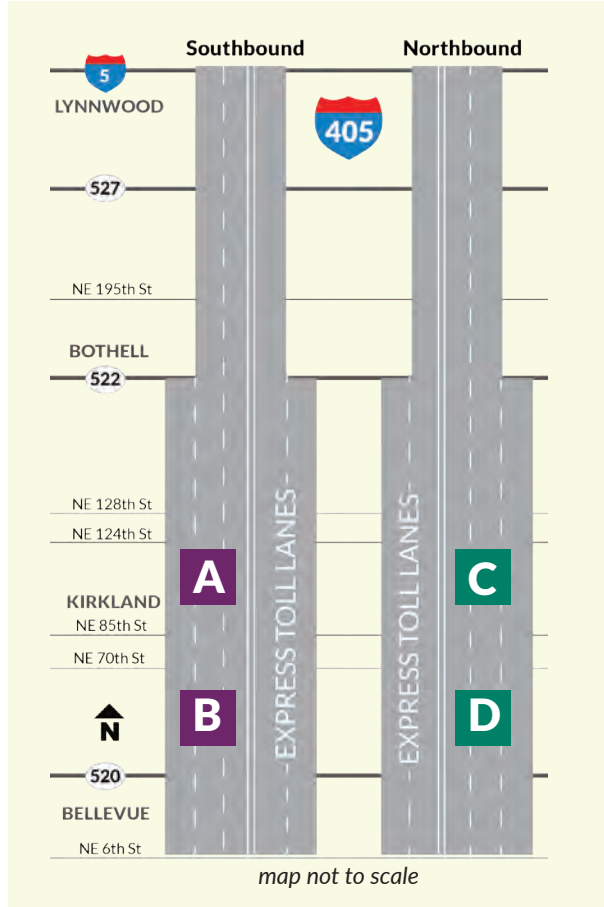


Dual-lane section capacity and volume

The dual-lane section of the express toll lanes is carrying higher volumes than prior to tolling. However, in the last quarter, we observed a decrease in volumes in the dual-lane section, not unlike similar drops in volumes we have observed during these months in past years. In this section of the corridor, the general purpose volumes have trended downward since the summer, however express toll lane volumes increased in the last quarter, showing that drivers still value the choice of a faster commute.

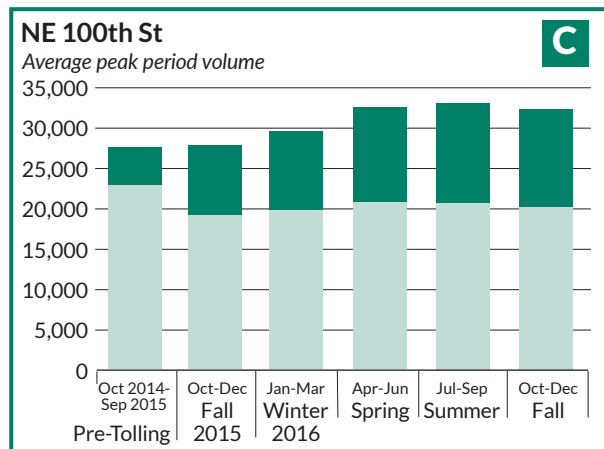
Express toll lanes carried between 26 and 31 percent of the dual-section peak period volumes during their first three months of operation. A year later, during the same quarter (October-December 2016), this proportion has increased, with the express toll lanes carrying between 35 and 38 percent of traffic volumes during peak periods.

**Average weekday dual-lane volumes at sample locations -
Oct. 1, 2014 to Sept. 30, 2015 versus Oct. 1, 2015-Dec. 31, 2016**



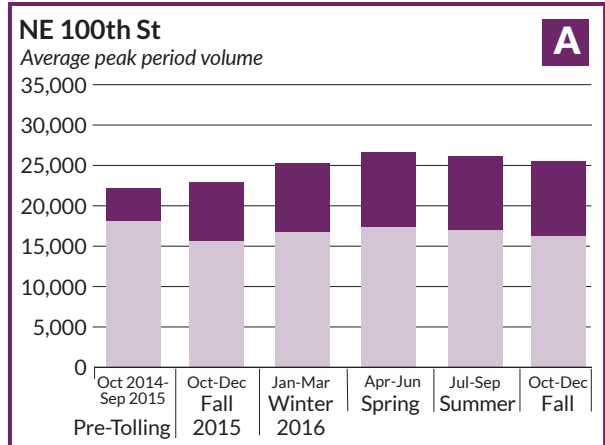
Northbound Evening Peak (3-7 p.m.)

General purpose lanes (light green) HOV/Express toll lanes (dark green)



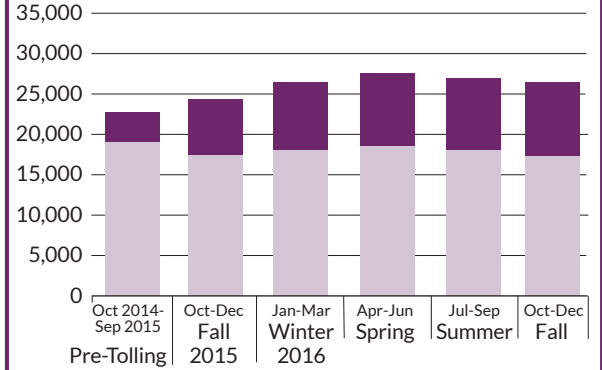
Southbound Morning Peak (5-9 a.m.)

General purpose lanes (light purple) HOV/Express toll lanes (dark purple)



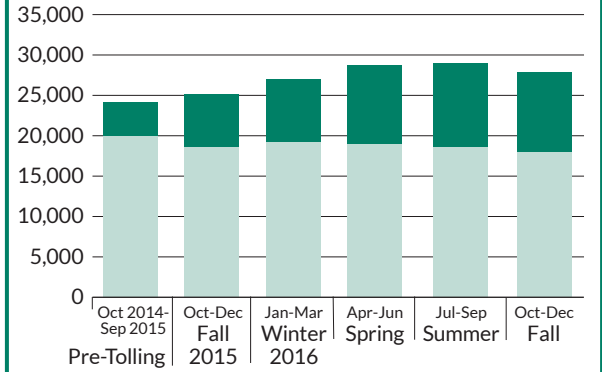
NE 53rd St (Area B)

Average peak period volume



NE 53rd St (Area D)

Average peak period volume

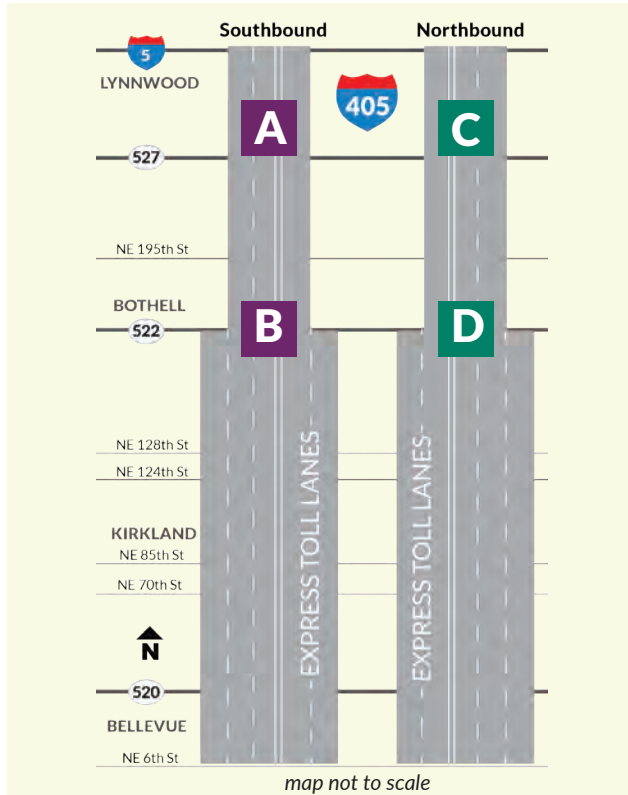


Single-lane section capacity and volume

The I-405 NE 6th to I-5 Widening and Express Toll Lanes Project did not include funds for new capacity north of SR 522. This section of the corridor lacks enough capacity to handle the current or future volume of vehicles expected with population growth.

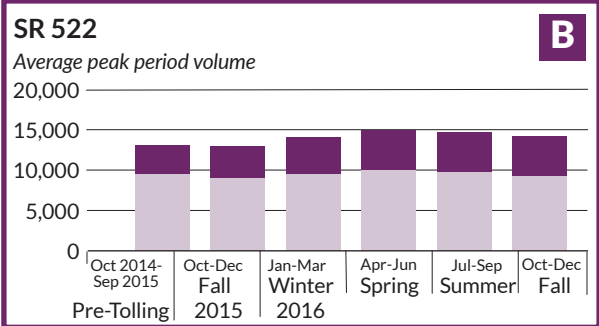
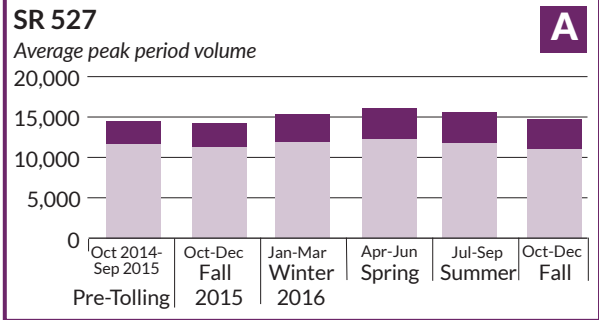
Despite the limited capacity of this section, volumes during the peak periods have increased over the first three quarters but general purpose lane and express toll lane volumes have trended downward since the fourth quarter of operations, most likely due to a seasonal change in travel patterns. However, volumes in the express toll lanes are between 5 and 23 percent higher in the last quarter (October-December 2016) compared to the first three months of operations (October-December 2015).

**Average single-lane weekday volumes at sample locations -
Oct. 1, 2014 to Sept. 30, 2015 versus Oct. 1, 2015-Dec. 31, 2016**



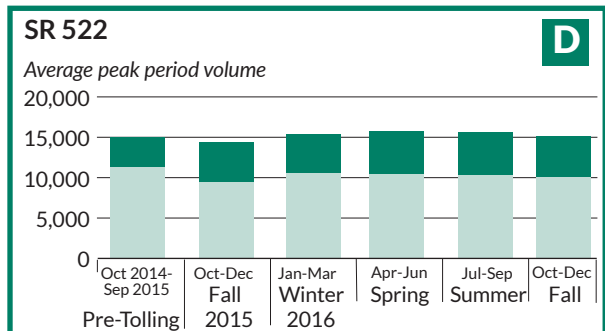
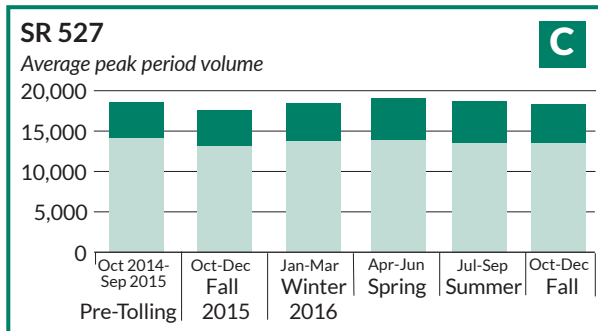
Southbound Morning Peak (5-9 a.m.)

General purpose lanes (light purple) HOV/Express toll lanes (dark purple)



Northbound Evening Peak (3-7 p.m.)

General purpose lanes (light green) HOV/Express toll lanes (dark green)



Forecast versus actual use

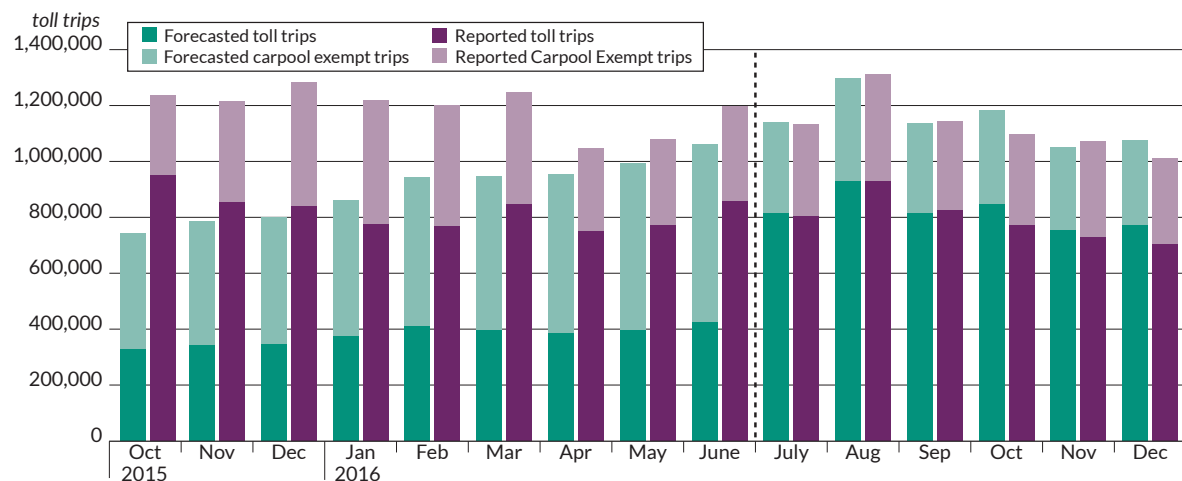
WSDOT updates forecasts periodically for all toll facilities, having most recently updated the fiscal year 2017 forecast in November 2016. Demand for the express toll lanes was higher than forecasted January through September 2016. However, trips dropped slightly below forecasted levels in the most recent quarter, October to December 2016.

The lower number of trips in the last quarter is consistent with season travel trends. The decrease in average volumes is consistent with historical trends on other regional highways including SR 167, I-90 and SR 522.

WSDOT completed a planning level traffic and revenue study in 2012 which included annual toll and toll exempt trips, as well as a toll revenue forecast. Annual forecasts were developed taking into consideration the one-year ramp-up period for express toll lanes and the seasonal shifts in traffic volumes. The ramp-up factor is associated to the period of time it takes drivers to become familiar with the facility and obtain a *Good To Go!* pass and account. The seasonality factor is derived from historical I-405 general purpose lane traffic data, which provides an indication of monthly travel behavior on the roadway. WSDOT has updated these forecasts twice, once in July 2016 and again in November 2016. The most recent November forecast contains updated traffic and revenue projections based on actual express toll lane operations through June 2016.

Carpool toll-exempt trips above forecasted, toll-trips below

Forecasted and Reported I-405 Express Toll Lane Trips



¹ March 18 - June 30, 2016 Forecast values based on EAG Scenario C Revised with the Following Key Assumptions: \$0.25 Pay By Plate Fee | \$2 Pay By Mail Toll Increment | \$0.75 Fixed Minimum Toll | No Tolling Nights (7:00PM-5:00AM) and Weekends | 3+ Free for 8 Hours Peak | 2+ Free Off-Peak Oct. 1, 2015 - March 17, 2016 Forecast values based on EAG Scenario C Revised with the Following Key Assumptions: \$0.25 Pay By Plate Fee | \$2 Pay By Mail Toll Increment | \$0.75 Fixed Minimum Toll | 24/7 Operations | 3+ Free for 8 Hours Peak | 2+ Free Off-Peak

² Values based on November 2016 forecast.

³ Reported values are based on total monthly trips adjusted for non-revenue and duplicate trips. HOV carpool volumes include operations during toll hours only.

⁴ Trips by payment method are based on values extracted from the monthly WSDOT toll report and are subject to change as transactions are resolved.

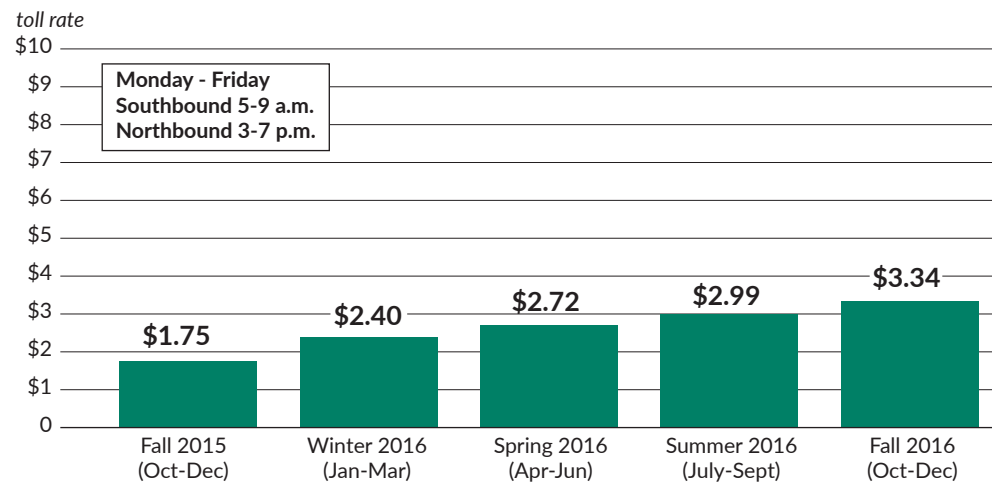
Toll Rates

In March 2015, the Transportation Commission approved a minimum toll rate of 75 cents and a maximum of \$10. Toll rates are adjusted by a congestion-based tolling algorithm designed to keep the express toll lane flowing by adapting the toll rate to match the demand. Toll rates increase and decrease with demand to maximize efficient traffic movement in the express toll lanes.

During the most recent quarter (October-December 2016), the average toll paid for all toll trips was \$2.27. For the same timeframe, the average toll paid for peak period, peak direction trips was \$3.34. Overall, 80 percent of tolls were \$4 or less, and over 70 percent of toll transactions were for the minimum rate of 75 cents. WSDOT has observed a steady increase of the average toll paid.

Average toll rate for peak period, peak direction trips remains below \$4

Average Peak Period, Peak Direction Toll Rates by Quarter – Oct. 1, 2015-Dec. 31, 2016



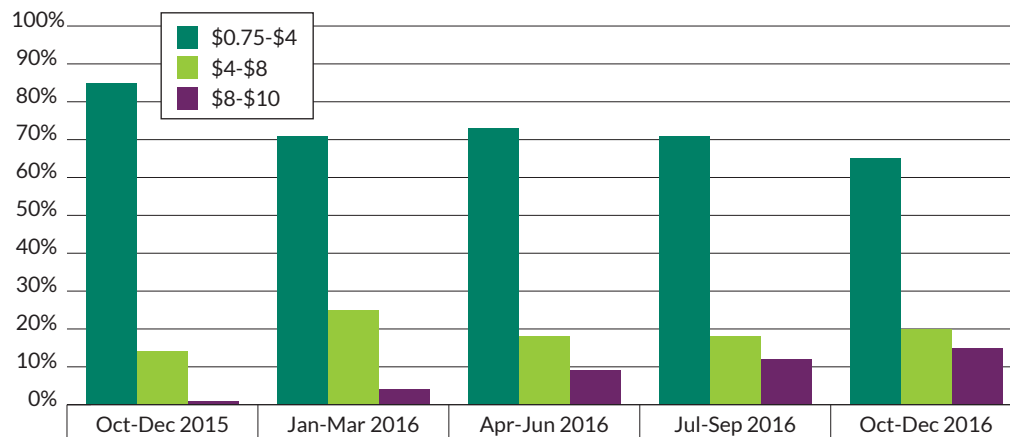
Maximum toll

WSDOT tracks the instances where the express toll lanes reached \$10. The express toll lanes began to reach the maximum toll rate regularly in winter 2016 and we continue to see growth in the number of drivers willing to pay this toll for a faster, more predictable trip. Typically, each time the toll rate reaches the maximum, it is due to heavy congestion caused by strong demand from drivers and capacity constraints in the single-lane section between Bothell and Lynnwood. The frequency and duration of time during peak periods that toll rates are over \$8 or more has steadily increased.

Despite the increased frequency of displayed rates over \$8, the number of vehicles opting to enter the lanes when tolls reach those rates have not increased dramatically. This means when displayed, that higher toll rates are having the intended effect of managing the lanes by discouraging vehicles from entering during periods of high congestion. During the last quarter of operations (October-December 2016), nearly 70 percent of toll transactions during peak periods were for amounts below \$4, while tolls of \$8 only accounted for 8 percent.

As express toll lane use increases, so does the peak period, peak direction toll rate

Average toll rate paid by *Good to Go!* pass holders - Oct. 1, 2015 through Sept. 20, 2016



Goal #2: Provide a faster and more predictable trip

The I-405 express toll lanes are providing faster, more predictable trips in the form of shorter travel times and faster speeds compared to the general purpose lanes. Speed and travel time performance varied between the single-lane and dual-lane sections. The increasing volume of vehicles on most of I-405 corridor, along with seasonality factors, have influenced travel times and speeds.

During the first 15 months of operations, the express toll lanes maintained an average of speed of 53 miles per hour (mph) during peak periods, 21 mph faster than the average general purpose lane speed. The dual-lane section of the express toll lanes moved vehicles an average of 58 mph during peak period, peak direction while the single-lane section moved vehicles an average of 49 mph.

For a full corridor trip, travel times in the express toll lanes averaged 11 minutes faster than general purpose lanes during the morning southbound peak period and 15 minutes faster during the afternoon northbound peak period. Transit has also seen reduced travel times while ridership has increased 5 percent over the first 15 months.

Compared to general purpose lanes, vehicles in express toll lanes moved 20 mph faster southbound and 24 mph faster northbound during peak periods.

Express toll lanes saved drivers an average 15 minutes northbound and 11 minutes southbound during peak periods.

Corridor average speeds

One of WSDOT's main goals with the implementation of the express toll lanes is to provide reliability on I-405 through the availability of more predictable trips for transit and carpools and as an alternative for toll paying drivers. I-405 is moving vehicles in the express toll lanes at faster speeds than the general purpose lanes. During the last 15 months of operation, the express toll lanes moved vehicles southbound an average of 20 mph faster during the morning peak period and 24 mph faster northbound during the afternoon peak period.

During peak periods, the express toll lanes have moved vehicles at an average of 53 mph northbound and 52 mph southbound. We observed a dip in speeds between September and December 2017, likely due to seasonality factors, such as rain and fewer daylight hours, that influence a driver's choice to travel at slower speeds for safety. Slower general purpose lane speeds were likely also a contributing factor in the slower express toll lane speeds. Drivers in the express toll lanes are likely to travel at slower speeds when traffic in the adjacent general purpose lane is traveling significantly slower and need to decrease their speed significantly when exiting congested general purpose lanes causing further slowing of the express toll lanes.

Overall, speeds in all sections in the peak direction have experienced a slight downward trend over the past 15 months although the corridor average speeds remain higher than the year prior to tolling.

We observed a considerable difference between dual-lane and single-lane section speeds. In order to better demonstrate the range of speeds that occur throughout peak periods, the tables below show the average weekday speeds of vehicles in the express toll lanes on the hour.

Dual-lane section provides more predictable trips than single-lane section

Dual- and single-lane section ETL average speed on the hour for peak period, peak directions – Oct. 1, 2016-Dec. 31, 2016

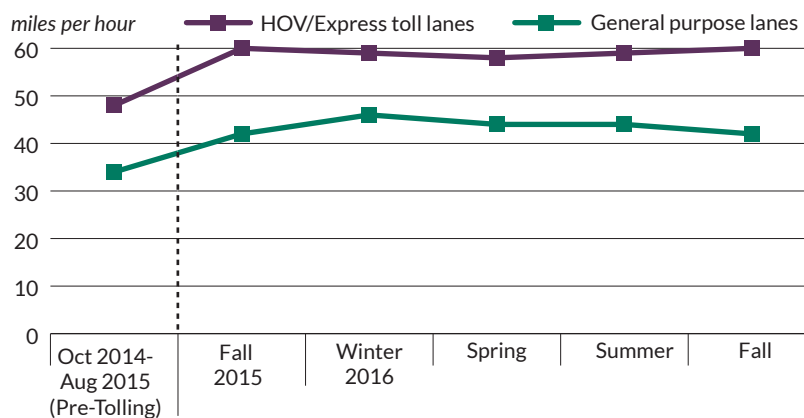
SINGLE-LANE				DUAL-LANE			
Southbound		Northbound		Southbound		Northbound	
	Speed		Speed		Speed		Speed
5:00 AM	60.0	3:00 PM	58.9	5:00 AM	60.0	3:00 PM	59.3
6:00 AM	59.8	4:00 PM	50.8	6:00 AM	60.0	4:00 PM	57.9
7:00 AM	47.7	5:00 PM	46.0	7:00 AM	59.6	5:00 PM	52.3
8:00 AM	44.5	6:00 PM	50.6	8:00 AM	57.1	6:00 PM	57.1
9:00 AM	55.0	7:00 PM	59.3	9:00 AM	57.6	7:00 PM	59.6

Dual-lane section speeds

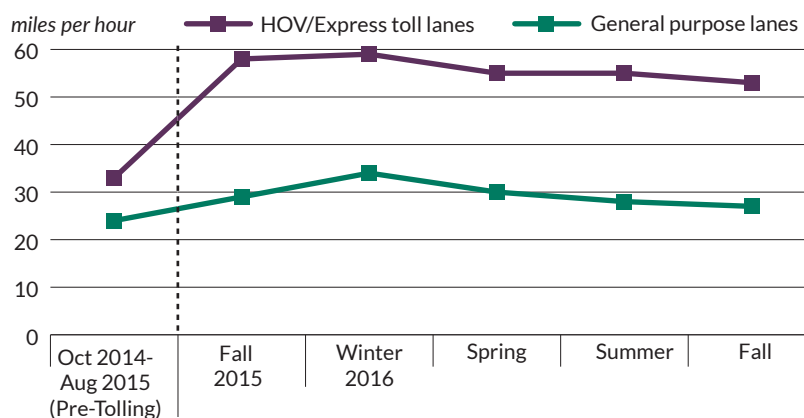
Since launching operations in September 2015, the dual-lane section of the express toll lanes has moved vehicles at an average 59 mph southbound and 56 mph northbound during peak use periods. Compared to the general purpose lanes, the express toll lanes moved vehicles an average of 15 mph faster southbound during the morning peak period, and 26 mph faster northbound during the afternoon peak period.

Dual-lane express toll lane speeds remain steady

Dual-lane southbound AM peak period average speeds (mph) - Oct. 1, 2014 - Dec. 31, 2016 weekdays (5a.m. - 9a.m.)



Dual-lane northbound PM peak period average speeds (mph) - Oct. 1, 2014 - Dec. 31, 2016 weekdays (3p.m. - 7p.m.)



Single-lane section speeds

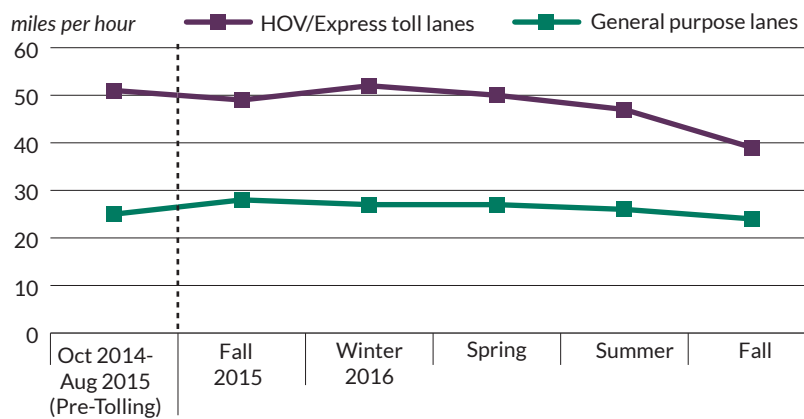
On average, the single-lane section of the express toll lanes moved vehicles at 47 mph southbound and 49 mph northbound during the peak period. These speeds are slower than those of the dual-lane section. This is likely due to the comparatively lower capacity of the single-lane section.

Despite no capacity being added to this section, the express toll lanes are still moving vehicles faster than the general purpose lanes in this section. Compared to the general purpose lanes in this section, express toll lanes were 21 mph faster southbound during the morning peak period, and 22 mph faster northbound during the afternoon peak period.

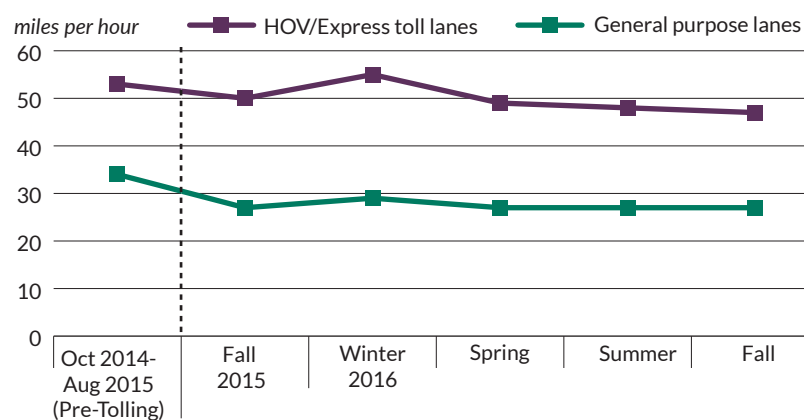
In the last quarter, we observed a drop in average speeds during the southbound morning peak period, similar to drops in speed we have observed during the fall in past years, prior to tolling, likely due to seasonality factors such as rain and fewer daylight hours, that influence driving behaviors. Friction with other lanes is also a big factor in speeds, as drivers tend to drive slower when the neighboring general purpose lane is congested.

Express toll lane speeds decrease in single-lane section

Single-lane southbound AM peak period average speeds (mph)- Oct. 1, 2014 - Dec. 31, 2016 weekdays (5a.m.- 9a.m.)



Single-lane northbound PM peak period average speeds (mph)- Oct. 1, 2014 - Dec. 31, 2016 weekdays (3p.m. - 7p.m.)



Travel times

During the first 15 months of operations, the express toll lanes have consistently provided travel time savings relative to the general purpose lanes, with drivers saving an average of 15 minutes northbound and 11 minutes southbound for the full corridor trip during the peak periods.

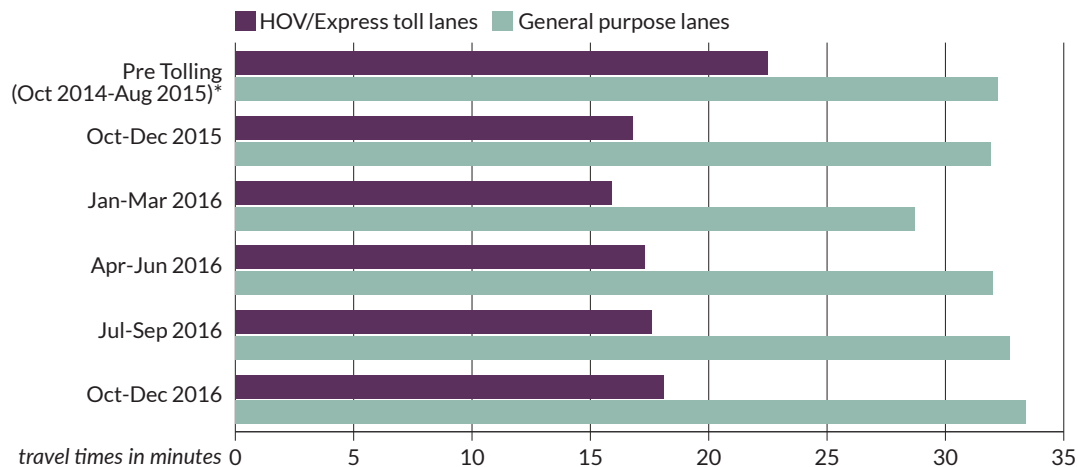
Since the first quarter of operations, travel times for all drivers in the corridor, general purpose and express toll lanes, have increased by an average of 2 minutes during peak periods. This increase in travel times is likely due to regional growth that has raised vehicle volumes on the corridor.

Express toll lanes provide shorter trip times during peak period, peak direction

Southbound AM peak period full corridor trip times–Oct. 1, 2014 - Dec. 31, 2016



Northbound PM peak period full corridor trip times–Oct. 1, 2014 - Dec. 31, 2016

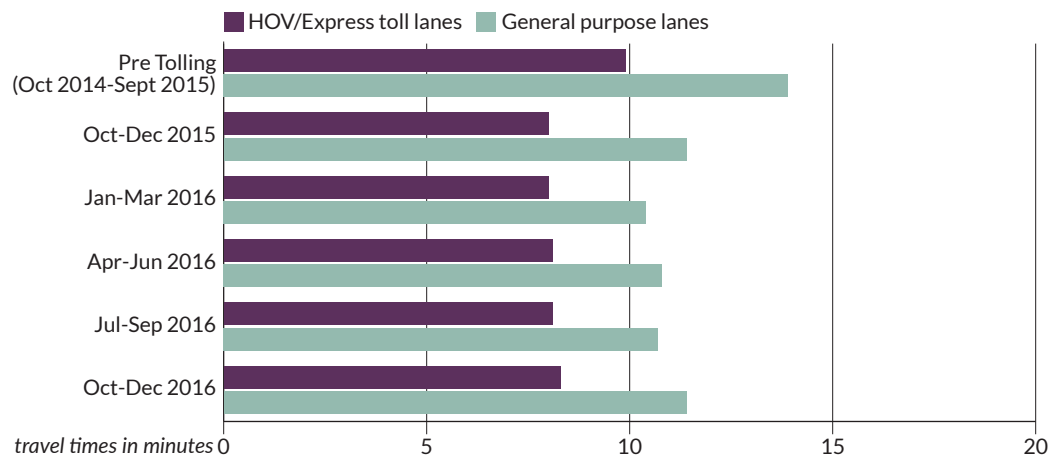


Travel times in dual-lane section

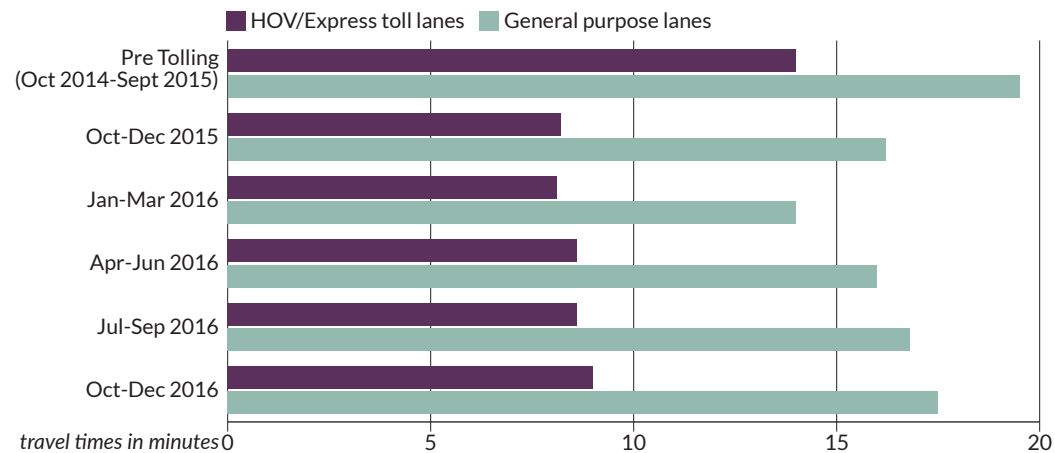
Compared to general purpose lane travel times, vehicles in the dual-lane section of the I-405 express toll lanes saved an average of 3 minutes during the morning southbound peak period and 8 minutes in the northbound afternoon peak period. Average general purpose travel times in this section of the corridor increased in the most recent quarter.

Dual-lane travel times lower than pre-tolling average

Dual-lane southbound AM peak period trip times –Oct. 1, 2014 - Dec. 31, 2016



Dual-lane northbound PM peak period trip times–Oct. 1, 2014 - Dec. 31, 2016

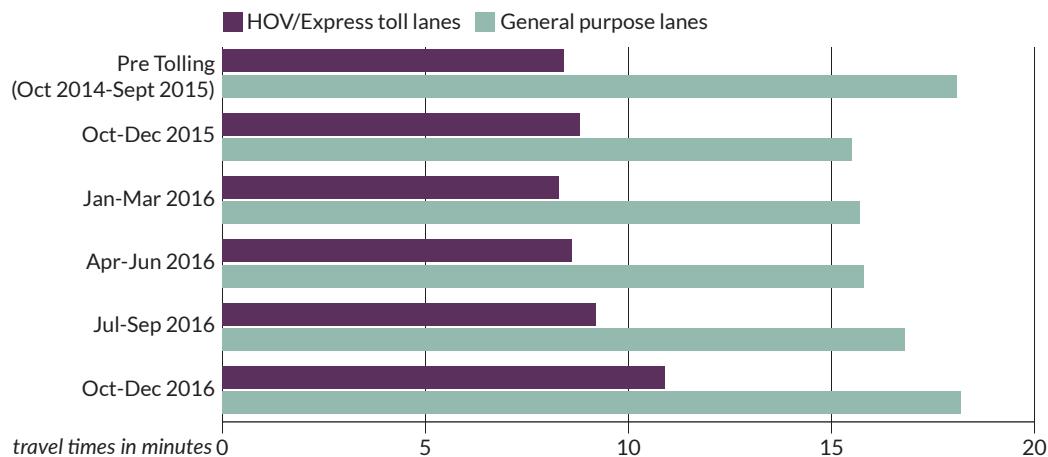


Travel time in single-lane section

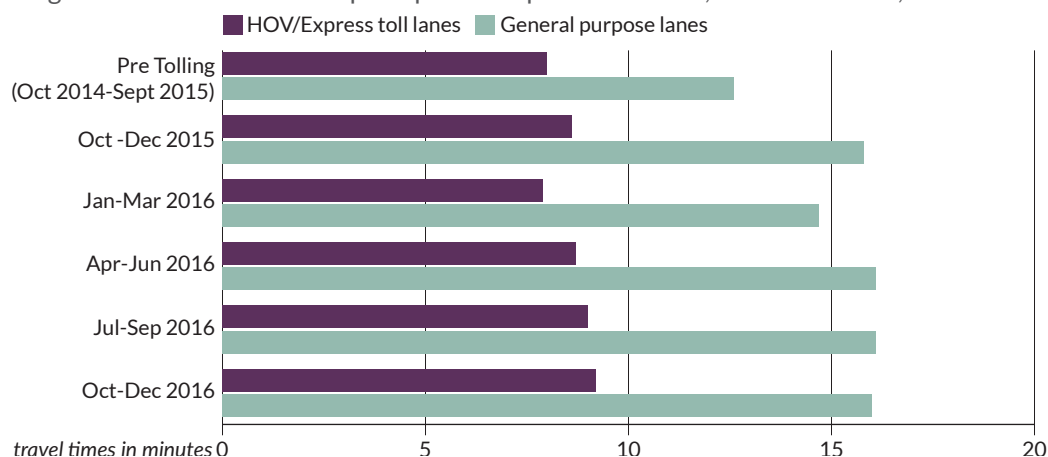
Limited capacity between SR 522 and I-5 in the single-lane section has resulted in longer peak period travel times since the launch of the express toll lanes in September 2015. In the last quarter, we observed an increase in travel times in the southbound morning peak period in both the express toll lanes and general purpose lanes while the northbound peak period travel times remained steady. Despite the overall increase in travel times, the express toll lanes in the single-lane section are still providing value in the form of an average of 7 minute savings compared to the general purpose lanes in both directions during peak periods.

Single-lane section peak period, peak direction travel times increase in fall quarter

Single-lane Southbound AM peak period trip times–Oct. 1, 2014 - Dec. 31, 2016



Single-lane northbound PM peak period trip times–Oct. 1, 2014 - Dec. 31, 2016



Transit is experiencing travel time savings and increased ridership

Since going into operation September 2015, transit ridership has increased by an average 5 percent on I-405. WSDOT works with regional transit agencies King County Metro and Community Transit (servicing Snohomish County) to monitor transit performance on the I-405 express toll lanes. Both Community Transit and King County Metro operate Sound Transit routes on I-405.

Since express toll lanes went into operation, each transit agency reported increased ridership on routes operating on I-405:

- Community Transit reported an increase in average daily ridership of approximately two percent and improvement in average travel times for most routes, with the exception of Route 424 that travels along I-405 between SR 520 and SR 522. The travel time increase on this route was about one minute, though the reason for the change is not clear. The remaining routes experienced travel time savings that range from 20 seconds to four minutes.
- King County Metro reported an increase of approximately nine percent in daily ridership compared to the previous year before tolling. Travel times for King County Metro showed an improvement averaging between one and eight minutes faster for routes that travel the express toll lane corridor.

Express Toll Lane Speed Performance

The Federal Highway Administration (FHWA) requires WSDOT to report on express toll lanes operating speed performance on an annual basis in July following the end of each fiscal year. The FHWA has set a speed standard of 45 mph or faster 90 percent of the time during peak periods to be reported in 180 day increments. For this report to be consistent with the 180 reporting period requested by FHWA, WSDOT will report the metric for the last 180 days of operations.

Dual lane section meets goal

Where WSDOT added capacity to I-405 in the dual-lane section, the express toll lanes move vehicles at 45 mph 93 percent of the time, exceeding the 90 percent goal.

Our reporting does not give any extra weight to the dual-lane section which carries higher volumes than the single lane section.

Challenges in single lane section

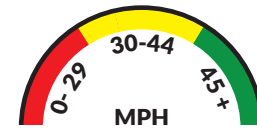
In the single-lane section, where no capacity was added, WSDOT isn't meeting the metric due to several constraints of the roadway. The limited capacity combined with heavy demand and other factors make it a challenge to meet 45 mph 90 percent of the time. In the single-lane section, the express toll lane moves vehicles at 45 mph 67 percent of the time. In the single-lane section, the express toll lane moves vehicles at 45 mph 67 percent of the time.

Other factors impacting performance in the single lane section include:

- Drivers slow down in the single lane section even when they could be traveling faster due to weather or because the general purpose lane next to them is moving at a slower speed.
- If the general purpose lane is congested, drivers need to slow down to merge as they exit the express toll lane, slowing traffic behind them.

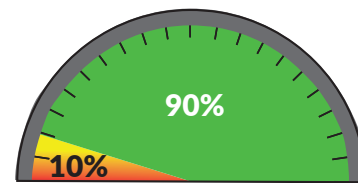
The challenges resulting from the constraints of the roadway will continue to exist until additional capacity is added. WSDOT's long-term plans include extending the dual express toll lane the entire length of the corridor.

Percent of peak time periods when the lanes move vehicles within each speed range

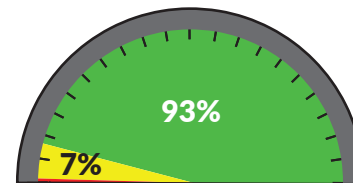


Goal

Speeds greater than 45 mph
90% of peak periods

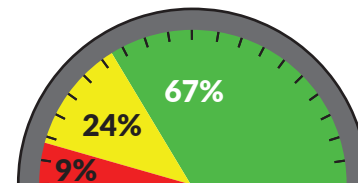


Dual-lane section



>1%

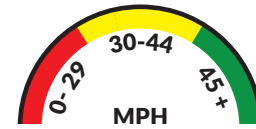
Single-lane section



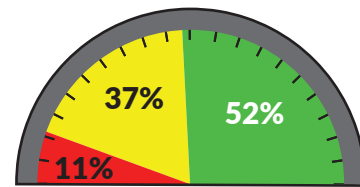
Full corridor

While the single lane section isn't meeting the goal, when examining the entire corridor the express toll lane is providing a more reliable trip than the previous HOV lane. Between July and December 2016, the express toll lanes moved vehicles 45 mph or faster 78 percent of the time during peak periods through the entire corridor. This is an improvement compared to the previous HOV lane which was only meeting the goal 52 percent of the time.

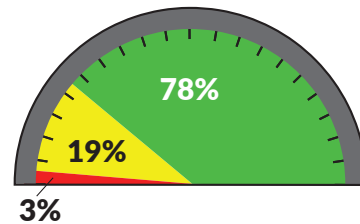
Percent of peak time periods when the lanes move vehicles within each speed range



Pre-Tolling
(July - Dec. 2014)



Tolling
(July - Dec. 2016)



Local Arterial Traffic

WSDOT is working with cities along the corridor to monitor the potential effects of express toll lanes on local streets. In August 2015, WSDOT collected volumes on arterial routes parallel to I-405, and collected the same data in August 2016 for comparison year-over-year. Overall, the local arterial volumes remain about the same comparing before and after express toll lanes. The Bothell area is the one exception as a result of construction activity along Bothell Way NE that diverted traffic to other routes, as well as major development in the area.

Goal #3: Fund future corridor improvements

During the first 15 months of operations, the I-405 express toll lanes generated \$27.4 million in revenue, including:

- \$22.6 million in toll revenue,
- \$1.9 million in *Good To Go!* pass revenue,
- \$2 million in civil penalty revenue,
- and over \$925,000 in other revenues.
- Operation and maintenance costs were \$9.9 million.

Toll revenue is appropriated by the Legislature and monitored by the Office of Financial Management. The Legislature directed I-405 express toll lane revenue to cover facility operation and maintenance costs, and any additional revenue to be reinvested back in to the corridor. An example of reinvestment in the corridor is the Peak-Use Shoulder Lane project which is scheduled to open to traffic by spring 2017. The new 1.8-mile peak-use shoulder lane on northbound I-405 between SR 527 in Bothell and I-5 in Lynnwood will help improve congestion during the weekday afternoon peak period.

**Total Gross Revenue:
\$27.4 million**

**Total Operational Costs:
\$9.9 million**

Toll revenue will be used to fund the new Peak-Use Shoulder Lane on northbound I-405 between SR 527 and I-5.

Upcoming express toll lanes improvements

Since opening, WSDOT has listened to and acted upon stakeholder feedback, and made more than a dozen improvements to the express toll lanes including longer access points, additional signage and pavement markings, and algorithm changes to respond to traffic volumes and patterns. In addition to improvements implemented in the first 15 months, WSDOT is also working on plans for several other operational improvements targeted at addressing the afternoon peak period congestion and bottleneck on northbound I-405 where five lanes funnel into three.

Northbound I-405 peak-use shoulder lane between SR 527 and I-5 – Northbound trips in the single-lane section between SR 522 and I-5 have experienced slower speeds since the express toll lanes opened. With more driver demand for the express toll lanes, WSDOT was able to use I-405 toll revenue to fund and proceed with adding a peak-use shoulder lane that will operate on the right shoulder of northbound I-405 between SR 527 and I-5. WSDOT plans to convert the right shoulder into a general purpose lane during afternoon peak period to help alleviate congestion in the single-lane section. The peak-use shoulder lane is expected to open to traffic in spring 2017.

Northbound I-405 striping improvements between NE 195th Street and SR 527 – This spring WSDOT plans to restripe the express toll lane access point between the NE 195th Street and SR 527 with a “weave lane” type access point. WSDOT has observed that most drivers using this access point are exiting from the express toll lanes. Currently, traffic exiting the express toll lane at this location may have to slow substantially to merge due to congestion in the general purpose lanes which slows down the traffic behind them. The weave lane provides a dedicated lane for this transition while keeping traffic moving in the express toll lane.

Northbound I-405 auxiliary lane between SR 520 and NE 70th PI – WSDOT continues to monitor the effects of striping changes implemented near the northbound SR 520 express toll lane access point. Preliminary engineering is scheduled to begin in summer 2017 to add a northbound general purpose auxiliary lane between the SR 520 and Northeast 70th Place interchanges. This work was funded by the Legislature with I-405 express toll lane revenue.

Northbound I-405 capacity constraint improvements – With initial funding from the 2016 Supplemental Transportation Budget, WSDOT began preliminary work to study potential capacity improvements between SR 522 and I-5, including major interchange work and an extension of the dual express toll lane system. Improvements in this area have been identified as a priority project for several years. After observing increased traffic congestion, and at the request of the Legislature, the I-405 project team is now developing a phased strategy to lower costs and implement these improvements on an accelerated timeline, while allowing the Legislature time to make final decisions about future funding.

Express toll lane revenue and expenditures

Since the express toll lanes opened, they have generating \$27.4 million in gross revenue, a number that includes other revenues such as *Good To Go!* pass sales, reprocessing fees and civil penalties.

As directed by the Legislature, revenue collected from the express toll lanes is used to cover the costs of facility operation and maintenance, and all additional revenue is reinvested into the corridor. Operating costs have been approximately \$9.9 million, including customer service, toll lane vendor, Washington State Patrol, Office of Administrative Hearings, credit card processing fees, costs for *Good To Go!* passes, Pay By Mail printing and postage, and salaries.

After operating costs, the express toll lanes have generated a total net revenue of \$17.5 million in the first 15 months. Including a \$2 million loan from the Motor Vehicle Fund from October 2014, this brings the I-405 account balance at the end of the second quarter of FY 2017 to \$19.6 million. This loan was intended to cover operating costs prior to the opening of express toll lanes and to cover the costs of *Good To Go!* passes allocated to I-405.

The fiscal note for Engrossed House Bill No. 1382 distributed by the Office of Financial Management on March 15, 2011 estimated that total gross toll revenue for the express toll lanes for the first 15 months of operations would range from \$9.5 million to \$32 million under the scenario in which three-person carpools were exempt from tolls.

The actual gross toll revenue for the first 15 months was \$22.6 million, consistent with the March 2011 estimated range.

The fiscal note was developed before the Transportation Commission adopted the I-405 express toll lanes policies. Some of the assumptions (such as the hours of operation and the maximum toll rate) in the fiscal note were different from current tolling policies. Below is a brief summary of the main assumption differences.

	Fiscal Note Assumption	Adopted Policy
Minimum Toll	\$1.00	\$0.75
Maximum Toll	No toll cap	\$10.00
Hours of Operation	5 am to 8 pm 7-days a week	5 am to 7 pm, Monday through Friday ³
Toll Occupancy Exemption	HOV 3+	HOV 3 + during weekday peak hours ⁴ ; HOV 2+ during weekday off peak hours.

Notes:

³ From Sept. 27, 2015 to March 17, 2016, I-405 express toll lanes operated 24 hours per day. Starting from March 18, 2016, tolls are waived for night-time (7 pm to 5 am), weekends, and major holidays.

⁴ Weekday peak hours: 5-9 am & 3-7 pm.

What's Next?

Over the next year, WSDOT will continue to compile and report data, make system improvements, and conduct public outreach around the I-405 express toll lanes. WSDOT continues to evaluate options to address the limited capacity in single-lane lane section of I-405.

Appendix A: Legislative performance measures

In its 2011 authorizing legislation for the I-405 express toll lanes (ETLs) (RCW 47.56.880), the Legislature directed the Washington State Department of Transportation (WSDOT) to monitor and report on seven performance metrics on a quarterly basis.

⁵The legislature added additional reporting requirements during the 2016 budget process detailed in ESHB 2524 209 (7). These requirements address 10 specific travel segments along the corridor and are included as Appendix B.

LEGISLATIVE MONITORING REQUIREMENT	REPORT SECTION REFERENCE
a. Whether the express toll lanes maintain speeds of 45 miles per hour at least 90 percent of the time during peak periods.	Includes percent of time the express toll lanes are moving traffic at 45 miles per hour or faster.
b. Whether the average traffic speed changed in the general purpose lanes.	Includes average speed and travel time trends for the general purpose lanes.
c. Whether transit ridership changed.	Includes preliminary transit ridership and travel time findings.
d. Whether the actual use of the express toll lanes is consistent with the projected use.	Includes comparison of forecasted and reported express toll lane trips.
e. Whether the express toll lanes generated sufficient revenue to pay for all I-405 express toll lane operating costs.	Includes preliminary revenue and expenditure results.
f. Whether travel times and volumes have increased or decreased on adjacent local streets and state highways.	Includes overview of local agency coordination and arterial traffic monitoring.
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.	Includes comparison of the preliminary revenue findings to the 2011 fiscal note.

Appendix B: Additional legislative reporting requirements

The legislature added reporting requirements during the 2016 budget process detailed in ESHB 2524 209 (7). These subsequent reporting requirements address travel times and volumes for 10 specific travel segments along the I-405 express toll lanes corridor.

This appendix provides a high-level summary of the travel time data and links to electronic copies of the detailed travel time and volume data. The legislature requested average and at minimum, 90th percentile travel times. Consistent with WSDOT methodology and the requirements of the proviso, this report includes 95th percentile travel times.

ESHB 2524 209 (7) states:

The department must provide quarterly reports to the transportation committees of the legislature on the Interstate 405 express toll lane project performance measures listed in RCW 47.56.880(4). These reports must include:

- (a) Information on the travel times and travel time reliability (at a minimum, average and 90th percentile travel times) maintained during peak and nonpeak periods in the express toll lanes and general purpose lanes for both the entire corridor and commonly made trips in the corridor including, but not limited to, northbound from Bellevue to Rose Hill, state route number 520 at NE 148th to Interstate 405 at state route number 522, Bellevue to Bothell (both NE 8th to state route number 522 and NE 8th to state route number 527), and a trip internal to the corridor (such as NE 85th to NE 160th) and similar southbound trips;
- (b) A month-to-month comparison of travel times and travel time reliability for the entire corridor and commonly made trips in the corridor as specified in (a) of this subsection since implementation of the express toll lanes and, to the extent available, a comparison to the travel times and travel time reliability prior to implementation of the express toll lanes;
- (c) Total express toll lane and total general purpose lane traffic volumes, as well as per lane traffic volumes for each type of lane (i) compared to total express toll lane and total general purpose lane traffic volumes, as well as per lane traffic volumes for each type of lane, on this segment of Interstate 405 prior to implementation of the express toll lanes and (ii) compared to total express toll lane and total general purpose lane traffic volumes, as well as per lane traffic volumes for each type of lane, from month to month since implementation of the express toll lanes; and
- (d) Underlying congestion measurements, that is, speeds, that are being used to generate the summary graphs provided, to be made available in a digital file format.

The Legislature directed WSDOT to examine travel times along specific segments of the I-405 express toll lanes corridor. The following table lists these travel segments and their corresponding mileposts. A map of the express toll lanes with milepost markers is included for reference at the end of this appendix.

Legislative segment requested and corresponding mileposts

	Legislative Request	Provided Travel Times	Missing GP Data ¹	Missing ETL Data ¹	Notes
1	Interstate 405 Northbound Bellevue to Rose Hill	(MP 13.92) Bellevue to (MP 20.22) Rose Hill			
2	Interstate 405 Southbound Rose Hill to Bellevue	(MP 20.22) Rose Hill to (MP 13.92) Bellevue	July 2015	May, June, July 2015	
3	State Route 520 Westbound at NE 148th to Interstate 405 Northbound at State Route 522	(SR 520 MP 9.11) SR 520 @ 148th to (I-405 MP 23.51) SR 522	Sept 2015	Aug, Sept 2015	EB and WB sensor at 148th not located in same place
4	Interstate 405 Southbound at State Route 522 to State Route 520 Eastbound at NE 148th	(I-405 MP 23.51) SR 522 to (SR 520 MP 9.35) SR 520 @ 148th			EB and WB sensor at 148th not located in same place
5	Interstate 405 Northbound Bellevue to Bothell (State Route 522)	(MP 13.92) Bellevue to (MP 23.51) SR 522	Sept 2015	Aug, Sept 2015	
6	Interstate 405 Southbound Bothell (State Route 522) to Bellevue	(MP 23.51) SR 522 to (MP 13.92) Bellevue		May, June, Sept 2015	
7	Interstate 405 Northbound Bellevue to Bothell (State Route 527)	(MP 13.92) Bellevue to (MP 26.16) SR 527			
8	Interstate 405 Southbound Bothell (State Route 527) to Bellevue	(MP 26.16) SR 527 to (MP 13.92) Bellevue		May, June 2015	
9	Northbound Trip Internal to the Corridor (such as NE 85th to NE 160th)	(MP 17.99) NE 85th to (MP 24.39) Beardslee Blvd	Sept, Dec 2015	Sept, Dec 2015	Insufficient data availability @ NE 160th
10	Southbound Trip Internal to the Corridor (such as NE 85th to NE 160th)	(MP 24.39) Beardslee Blvd to (MP 17.99) NE 85th	Sept, Dec 2015	Sept, Dec 2015	Insufficient data availability @ NE 160th

¹ Loop data is not available in various locations due to e.g., construction activity. This has resulted in incalculable travel times for certain months.

Note: Monthly average and 95th percentile travel times provided for both GP and ETL lanes for the AM Peak (5AM - 9AM), Midday Period (9 AM - 3PM), and PM Peak (3PM - 7PM)

Note: The legislature requested average and 90th percentile travel times. Direction was received from OFM to report the 95th percentile.

³ Source: www.psrc.org/assets/14735/Trend-Population-201607.pdf

⁴ Source: www.psrc.org/assets/14876/Trend-Jobs-201609.pdf

Detailed general purpose lane travel time data

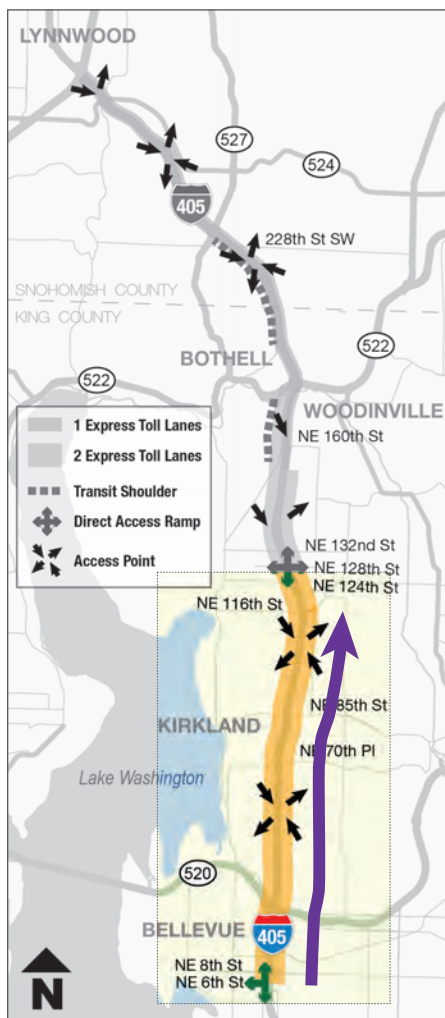
The Legislature directed WSDOT to report on travel times for northbound and southbound I-405 segments. For the segments that we've collected data for, we've seen that generally:

- Most trips have shorter travel times
- **Except** for trips on northbound I-405 between SR 522 and I-5 where capacity is limited as 5 lanes convert to 3 creating a bottleneck
- 95th percentile demonstrates **improved reliability**
- The following tables and graphs provide a summary of the travel time data. On the following pages, each set of roadway segment data is summarized and numbered to correspond to the legislative request detailed in the table on the prior page.

More detailed data can be found on WSDOT's website at

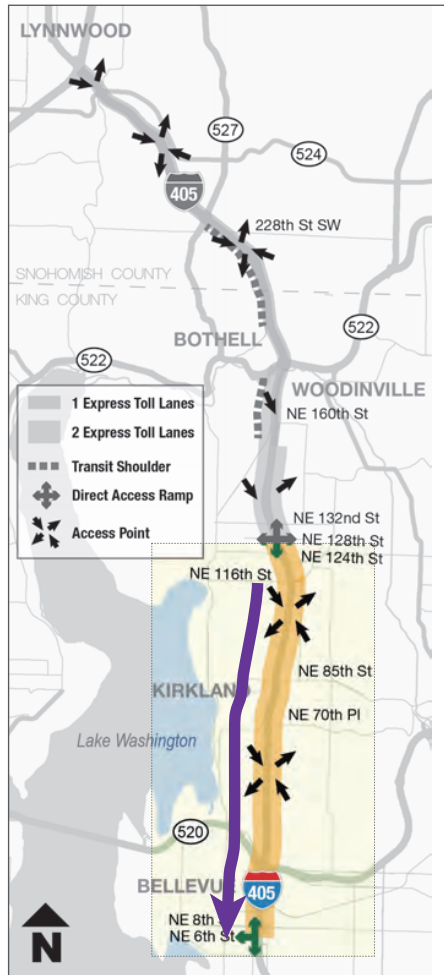
<https://www.wsdot.wa.gov/Tolling/405/library.htm>.

1. Travel Times: Northbound I-405 from Bellevue to NE 116th (PM Peak Period)



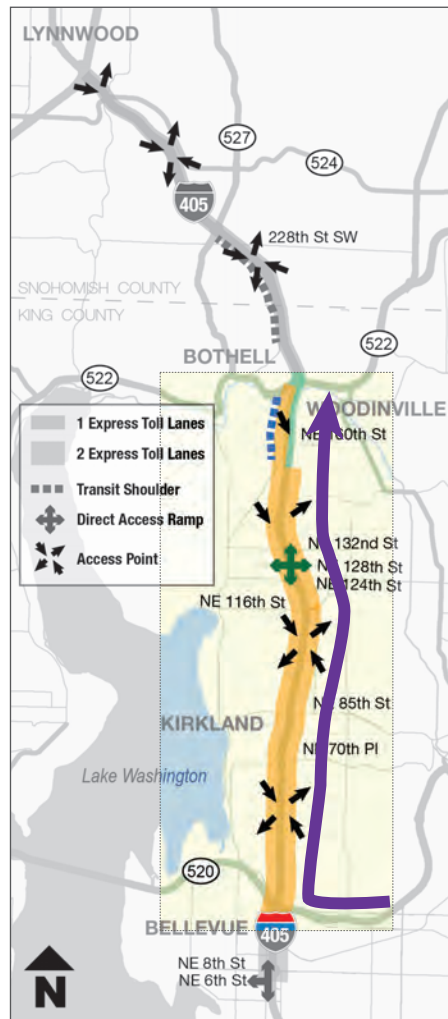
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	16	(26)	3 minutes faster	7 minutes faster
	2015	13	(19)		
Jan	2015	16	(23)	4 minutes faster	4 minutes faster
	2016	12	(19)		
May	2015	16	(25)	4 minutes faster	8 minutes faster
	2016	12	(17)		
Aug	2015	16	(22)	3 minutes faster	5 minutes faster
	2016	13	(17)		
Oct	2015	13	(19)	1 minute slower	4 minutes slower
	2016	14	(23)		

2. Travel Times: Southbound I-405 from NE 116th to Bellevue (AM Peak Period)



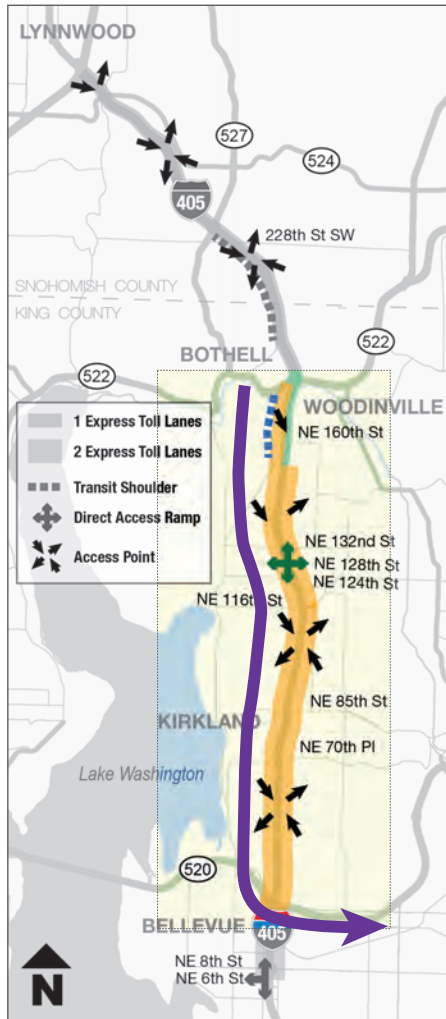
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	12	(14)	2 minutes faster	2 minutes faster
	2015	10	(12)		
Jan	2015	11	(13)	2 minutes faster	1 minute faster
	2016	9	(12)		
May	2015	11	(13)	2 minutes faster	2 minutes faster
	2016	9	(11)		
Aug	2015	10	(12)	1 minutes faster	2 minute faster
	2016	9	(10)		
Oct	2015	10	(12)	No change	No change
	2016	10	(12)		

3. Travel Times: Westbound SR 520 at 148th Ave NE to Northbound I-405 at SR 522



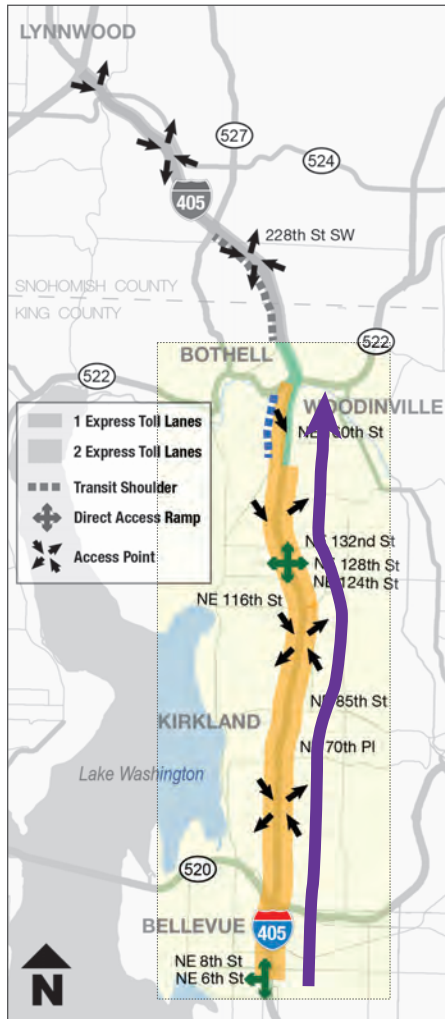
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	27	(43)	7 minutes faster	13 minutes faster
	2015	20	(30)		
Jan	2015	26	(34)	6 minutes faster	4 minutes faster
	2016	20	(30)		
May	2015	28	(43)	6 minutes faster	12 minutes faster
	2016	22	(31)		
Aug	2015	24	(30)	2 minutes faster	1 minute faster
	2016	22	(29)		
Oct	2015	20	(30)	3 minutes slower	7 minutes slower
	2016	23	(37)		

4. Travel Times: Southbound I-405 at SR 522 to Eastbound SR 520 at 148th Ave NE



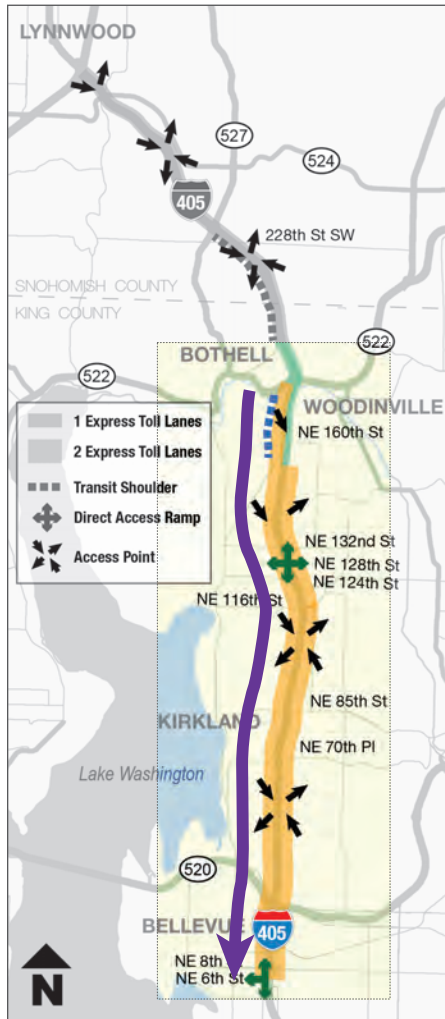
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	23	(28)	5 minutes faster	6 minutes faster
	2015	18	(22)		
Jan	2015	21	(25)	5 minutes faster	5 minutes faster
	2016	16	(20)		
May	2015	21	(25)	5 minutes faster	6 minutes faster
	2016	16	(19)		
Aug	2015	20	(24)	5 minutes faster	7 minutes faster
	2016	15	(17)		
Oct	2015	18	(22)	No change	1 minute slower
	2016	18	(23)		

5. Travel Times: Northbound I-405 from Bellevue to SR 522 (PM Peak Period)



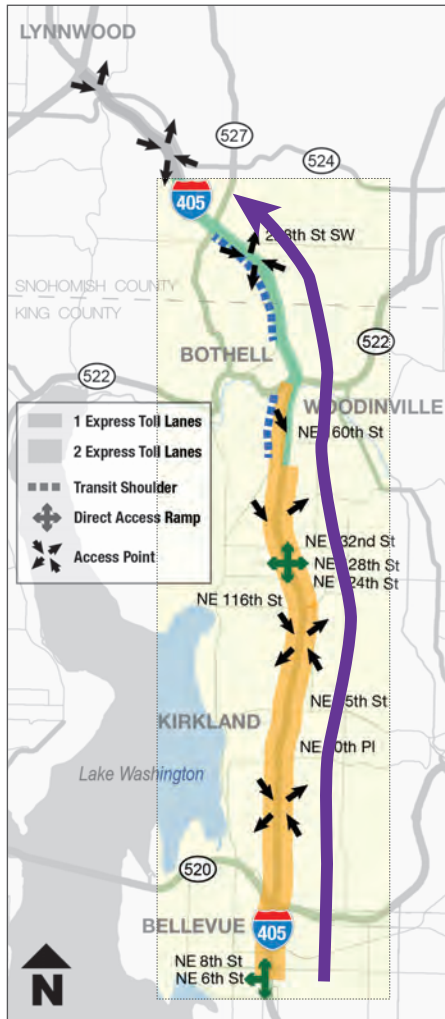
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	24	(35)	5 minutes faster	7 minutes faster
	2015	19	(28)		
Jan	2015	24	(32)	5 minutes faster	4 minutes faster
	2016	19	(28)		
May	2015	23	(35)	3 minutes faster	8 minutes faster
	2016	20	(27)		
Aug	2015	23	(30)	3 minutes faster	3 minutes faster
	2016	20	(27)		
Oct	2015	19	(28)	2 minutes slower	7 minutes slower
	2016	21	(35)		

6. Travel Times: Southbound I-405 from SR 522 to Bellevue (AM Peak Period)



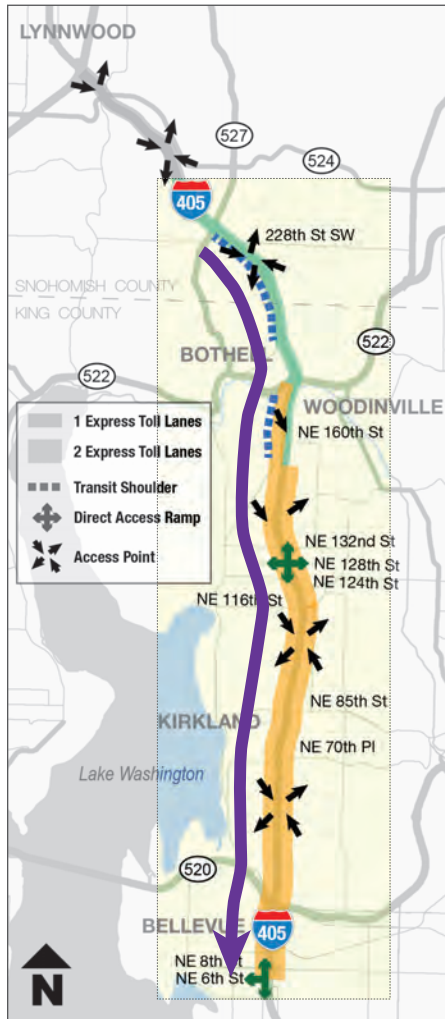
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	21	(25)	6 minutes faster	5 minutes faster
	2015	15	(20)		
Jan	2015	19	(23)	5 minutes faster	5 minutes faster
	2016	14	(18)		
May	2015	19	(23)	5 minutes faster	6 minutes faster
	2016	14	(17)		
Aug	2015	17	(21)	4 minutes faster	6 minutes faster
	2016	13	(15)		
Oct	2015	15	(20)	1 minute slower	No change
	2016	16	(20)		

7. Travel Times: Northbound I-405 from Bellevue to SR 527 (PM Peak)



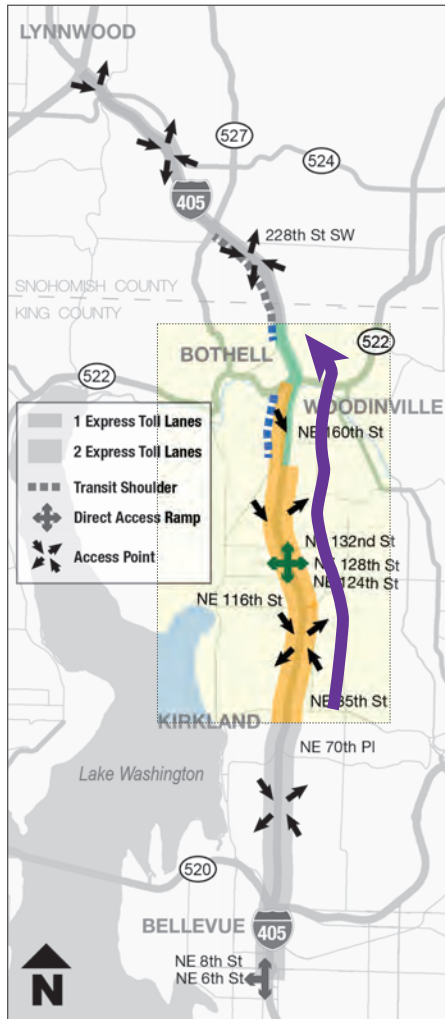
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	28	(39)	2 minutes faster	1 minute faster
	2015	26	(38)		
Jan	2015	28	(39)	3 minutes faster	3 minutes faster
	2016	25	(36)		
May	2015	28	(40)	2 minutes faster	4 minutes faster
	2016	26	(36)		
Aug	2015	27	(35)	1 minute slower	1 minute slower
	2016	28	(36)		
Oct	2015	26	(38)	2 minutes slower	3 minutes slower
	2016	28	(41)		

8. Travel Times: Southbound I-405 from SR 527 to Bellevue (AM Peak Period)



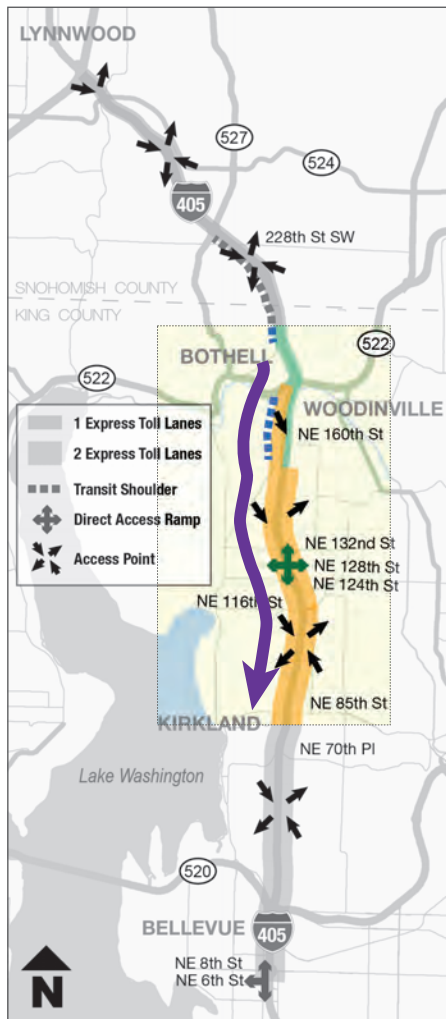
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	33	(41)	9 minutes faster	10 minutes faster
	2015	24	(31)		
Jan	2015	27	(36)	5 minutes faster	6 minutes faster
	2016	22	(30)		
May	2015	28	(35)	7 minutes faster	9 minutes faster
	2016	21	(26)		
Aug	2015	25	(34)	4 minutes faster	9 minutes faster
	2016	21	(25)		
Oct	2015	24	(31)	2 minutes slower	3 minutes slower
	2016	26	(34)		

9. Travel Times: Northbound I-405 from NE 85th to NE 195th (PM Peak Period)



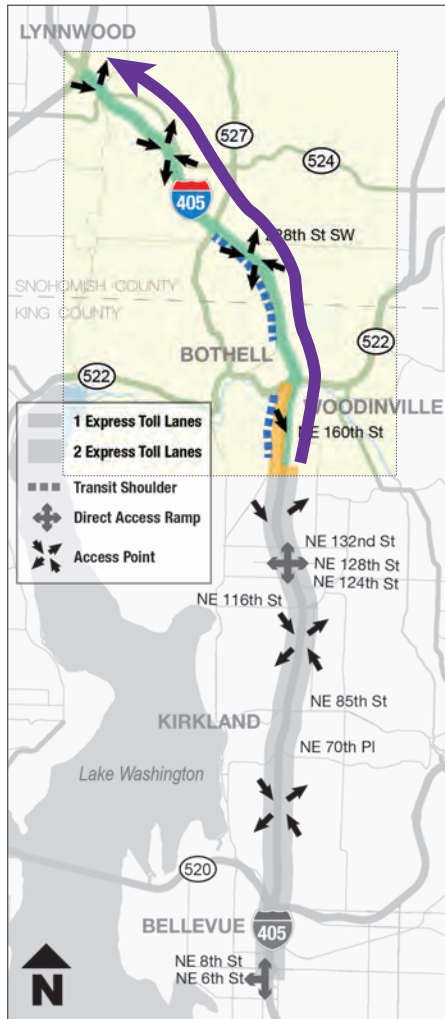
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	15	(19)	3 minutes faster	No change
	2015	12	(19)		
Jan	2015	15	(20)	3 minutes faster	2 minutes faster
	2016	12	(18)		
May	2015	15	(20)	1 minute faster	No change
	2016	14	(20)		
Aug	2015	14	(18)	No change	2 minutes slower
	2016	14	(20)		
Oct	2015	12	(19)	2 minutes slower	2 minutes slower
	2016	14	(21)		

10. Travel Times: Southbound I-405 from NE 195th to NE 85th (AM Peak Period)



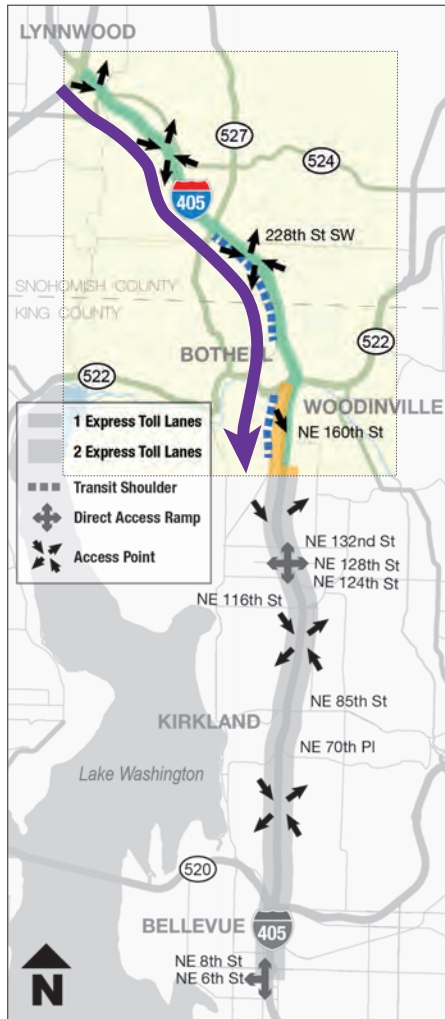
Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	19	(24)	6 minutes faster	6 minutes faster
	2015	13	(18)		
Jan	2015	16	(21)	5 minutes faster	5 minutes faster
	2016	11	(16)		
May	2015	16	(20)	5 minutes faster	6 minutes faster
	2016	11	(14)		
Aug	2015	15	(20)	4 minutes faster	7 minutes faster
	2016	11	(13)		
Oct	2015	13	(18)	1 minute slower	No change
	2016	14	(18)		

Additional Example: Travel Times: Northbound I-405 from NE 160th St. to I-5



Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	13	(19)	3 minutes slower	7 minutes slower
	2015	16	(26)		
Jan	2015	12	(20)	4 minutes slower	6 minutes slower
	2016	16	(26)		
May	2015	13	(19)	3 minutes slower	7 minutes slower
	2016	16	(26)		
Aug	2015	12	(19)	5 minutes slower	6 minutes slower
	2016	17	(25)		
Oct	2015	16	(26)	No change	1 minute faster
	2016	16	(25)		

Additional Example: Travel Times: Southbound I-405 from I-5 to NE 160th St.



Timeframe Comparison		General Purpose Lane Travel Times in Minutes		Change in Travel Times in Minutes	
		Average	(95th Percentile)	Average	Reliable
Oct	2014	25	(49)	9 minutes faster	22 minutes faster
	2015	16	(27)		
Jan	2015	17	(34)	No change	1 minute slower
	2016	17	(35)		
May	2015	18	(35)	2 minutes faster	7 minutes faster
	2016	16	(28)		
Aug	2015	16	(34)	No change	5 minutes faster
	2016	16	(29)		
Oct	2015	16	(27)	3 minutes slower	10 minutes slower
	2016	19	(37)		

Detailed volume data

- The following pages contain a summary of the requested volume data. Due to the large quantity and detail of volume data requested for each travel segment, the rest of this data will be provided on WSDOT's website at <https://www.wsdot.wa.gov/Tolling/405/library.htm>.

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			NE 100th (Dual-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Oct	2014	Mainline	17,663	23,017	59,002	82,576
		HOV	4,301	4,850	10,402	10,812
		Total	21,964	27,867	69,404	93,388
	2015	Mainline	16,434	19,738	68,482	79,251
		ETL	7,622	8,755	16,053	14,538
		Total	24,056	28,493	84,535	93,789
	Total Change (2015-2014)			2,092	626	15,131
Nov	2014	Mainline	17,144	21,508	68,851	81,400
		HOV	3,932	4,565	12,511	11,345
		Total	21,076	26,073	81,362	92,745
	2015	Mainline	15,357	18,946	63,552	73,567
		ETL	7,490	8,865	16,220	14,663
		Total	22,847	27,811	79,772	88,230
	Total Change (2015-2014)			1,771	1,738	-1,590
Dec	2014	Mainline	16,511	21,553	68,468	80,554
		HOV	3,507	4,504	12,859	10,968
		Total	20,018	26,057	81,327	91,522
	2015	Mainline	15,235	18,490	65,204	75,996
		ETL	6,576	8,452	16,502	15,581
		Total	21,811	26,942	81,706	91,577
	Total Change (2015-2014)			1,793	885	379
Jan	2015	Mainline	17,262	22,217	68,380	80,996
		HOV	3,950	4,609	11,343	10,426
		Total	21,212	26,826	79,723	91,422
	2016	Mainline	15,730	19,042	65,432	76,350
		ETL	8,019	9,205	17,236	15,321
		Total	23,749	28,247	82,668	91,671
	Total Change (2016-2015)			2,537	1,421	2,945

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			NE 100th (Dual-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Feb	2015	Mainline	18,152	23,283	67,434	80,586
		HOV	4,158	4,623	11,436	9,653
		Total	22,310	27,906	78,870	90,239
	2016	Mainline	17,038	19,918	68,765	79,759
		ETL	8,617	9,869	18,133	16,026
		Total	25,655	29,787	86,898	95,785
	Total Change (2016-2015)			3,345	1,881	8,028
Mar	2015	Mainline	18,539	22,839	72,882	85,870
		HOV	4,293	4,836	12,122	11,115
		Total	22,832	27,675	85,004	96,985
	2016	Mainline	17,359	20,000	69,351	79,866
		ETL	9,117	10,513	20,076	18,242
		Total	26,476	30,513	89,427	98,108
	Total Change (2016-2015)			3,644	8,108	4,423
Apr	2015	Mainline	19,022	22,890	73,793	85,949
		HOV	4,197	4,838	12,769	11,660
		Total	23,219	27,728	86,562	97,609
	2016	Mainline	17,505	20,568	69,840	74,820
		ETL	9,100	10,896	21,405	18,570
		Total	26,605	31,464	91,245	93,390
	Total Change (2016-2015)			3,386	3,736	4,683
May	2015	Mainline	18,265	22,625	72,807	85,565
		HOV	4,190	4,794	13,665	11,840
		Total	22,455	27,419	86,472	97,405
	2016	Mainline	16,980	20,698	69,152	84,522
		ETL	9,182	11,990	21,812	22,335
		Total	26,162	32,688	90,964	106,857
	Total Change (2016-2015)			3,707	5,269	4,492

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			NE 100th (Dual-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Jun	2015	Mainline	19,028	23,427	74,338	88,340
		HOV	4,462	4,981	14,387	12,535
		Total	23,490	28,408	88,725	100,875
	2016	Mainline	17,672	20,693	69,964	85,705
		ETL	9,540	12,537	24,201	24,586
		Total	27,212	33,230	94,165	110,291
	Total Change (2016-2015)			3,722	4,822	5,440
Jul	2015	Mainline	18,697	23,398	74,231	89,503
		HOV	4,257	4,897	14,735	12,653
		Total	22,954	28,295	88,966	102,156
	2016	Mainline	16,812	20,397	69,454	84,960
		ETL	8,576	12,081	23,948	23,893
		Total	25,388	32,478	93,402	108,853
	Total Change (2016-2015)			2,434	4,183	4,436
Aug	2015	Mainline	18,633	22,896	74,145	88,103
		HOV	4,298	4,812	15,132	12,763
		Total	22,931	27,708	89,277	100,866
	2016	Mainline	17,510	20,683	70,068	85,514
		ETL	9,375	12,677	25,064	24,690
		Total	26,885	33,360	95,132	110,204
	Total Change (2016-2015)			3,954	5,652	5,855
Sep	2015	Mainline	17,763	23,025	71,767	85,595
		HOV	3,994	4,566	11,755	10,132
		Total	21,757	27,591	83,522	95,727
	2016	Mainline	16,589	20,618	67,817	83,428
		ETL	9,335	12,478	24,104	24,152
		Total	25,924	33,096	91,921	107,580
	Total Change (2016-2015)			4,167	5,505	8,399

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			NE 100th (Dual-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Oct	2015	Mainline	16,434	19,738	68,482	79,251
		ETL	7,622	8,755	16,053	14,538
		Total	24,056	28,493	84,535	93,789
	2016	Mainline	16,540	20,598	66,729	82,580
		ETL	9,708	12,459	23,975	23,434
		Total	26,248	33,057	90,704	106,014
	Total Change (2015-2016)			2,192	4,564	6,169
Nov	2015	Mainline	15,357	18,946	63,552	73567
		ETL	7,490	8,865	16,220	14663
		Total	22,847	27,811	79,772	88230
	2016	Mainline	15,916	19,888	65,746	81248
		ETL	89,57	11,648	23,290	22950
		Total	24,873	31,536	89,036	104234
	Total Change (2015-2016)			2,026	3,725	9,264
Dec	2015	Mainline	15,235	18,490	65,204	75,996
		ETL	6,576	8,452	16,502	15,581
		Total	21,811	26,942	81,706	91,577
	2016	Mainline	16,210	19,588	65,620	81,107
		ETL	9,284	12,257	24,024	23,577
		Total	25,494	31,845	89,644	104,684
	Total Change (2015-2016)			3,683	4,903	7938

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			SR 527 (Single-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Oct	2014	Mainline	10,841	14,319	51,987	53,767
		HOV	3,126	4,450	8,644	8,976
		Total	13,967	18,769	60,631	62,743
	2015	Mainline	11,773	13,483	53,876	55,295
		ETL	3,269	4,773	7,741	7,231
		Total	15,042	18,256	61,617	62,526
	Total Change (2015-2014)			1,075	-513	986
Nov	2014	Mainline	10,665	13,653	50,239	52,349
		HOV	2,681	4,127	8,976	8,789
		Total	13,346	17,780	59,215	61,138
	2015	MainlineL	11,047	13,103	52,034	53,390
		ETL	3,226	4,474	8,121	7,256
		Total	14,273	17,577	60,155	60,646
	Total Change (2015-2014)			927	-203	940
Dec	2014	Mainline	10,586	13,544	50,562	52,184
		HOV	2,331	4,041	9,005	8,120
		Total	12,917	17,585	59,567	60,304
	2015	Mainline	10,845	12,846	52,300	53,035
		ETL	2,710	4,170	7,882	7,285
		Total	13,555	17,016	60,182	60,320
	Total Change (2015-2014)			638	-569	615
Jan	2015	Mainline	11,308	14,025	51,460	52,184
		HOV	2,522	3,985	7,565	8,120
		Total	13,830	18,010	59,025	60,304
	2016	Mainline	11,234	13,241	51,804	52,504
		ETL	3,306	4,362	7,715	7,201
		Total	14,540	17,603	59,519	59,705
	Total Change (2016-2015)			710	-407	494

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			SR 527 (Single-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Feb	2015	Mainline	11,864	14,539	53,269	53,944
		HOV	2,665	4,290	8,046	8,467
		Total	14,529	18,829	61,315	62,411
	2016	Mainline	12,085	13,846	54,020	54,992
		ETL	3,431	4,642	8,251	7,684
		Total	15,516	18,488	62,271	62,676
	Total Change (2016-2015)		987	-341	956	265
Mar	2015	Mainline	11,937	14,681	49,388	50,728
		HOV	2,819	4,269	7,975	7,963
		Total	14,756	18,950	57,363	58,691
	2016	Mainline	12,240	14,076	54,019	55,254
		ETL	3,736	4,986	9,264	8,683
		Total	15,976	19,062	63,283	63,937
	Total Change (2016-2015)		1,220	112	5,920	5,246
Apr	2015	Mainline	12,277	14,506	54,498	54,996
		HOV	2,725	4,411	8,892	9,704
		Total	15,002	18,917	63,390	64,700
	2016	Mainline	12,433	13,952	54,906	56,333
		ETL	3,806	5,178	10,571	9,722
		Total	16,239	19,130	65,477	66,055
	Total Change (2016-2015)		1,237	213	2,087	1,355
May	2015	Mainline	11,929	14,182	54,062	55,279
		HOV	2,802	4,502	9,746	9,573
		Total	14,731	18,684	63,808	64,852
	2016	Mainline	11,990	13,670	54,741	55,531
		ETL	3,820	5,141	10,532	9,973
		Total	15,810	18,811	65,273	65,504
	Total Change (2016-2015)		1,079	127	1,465	652

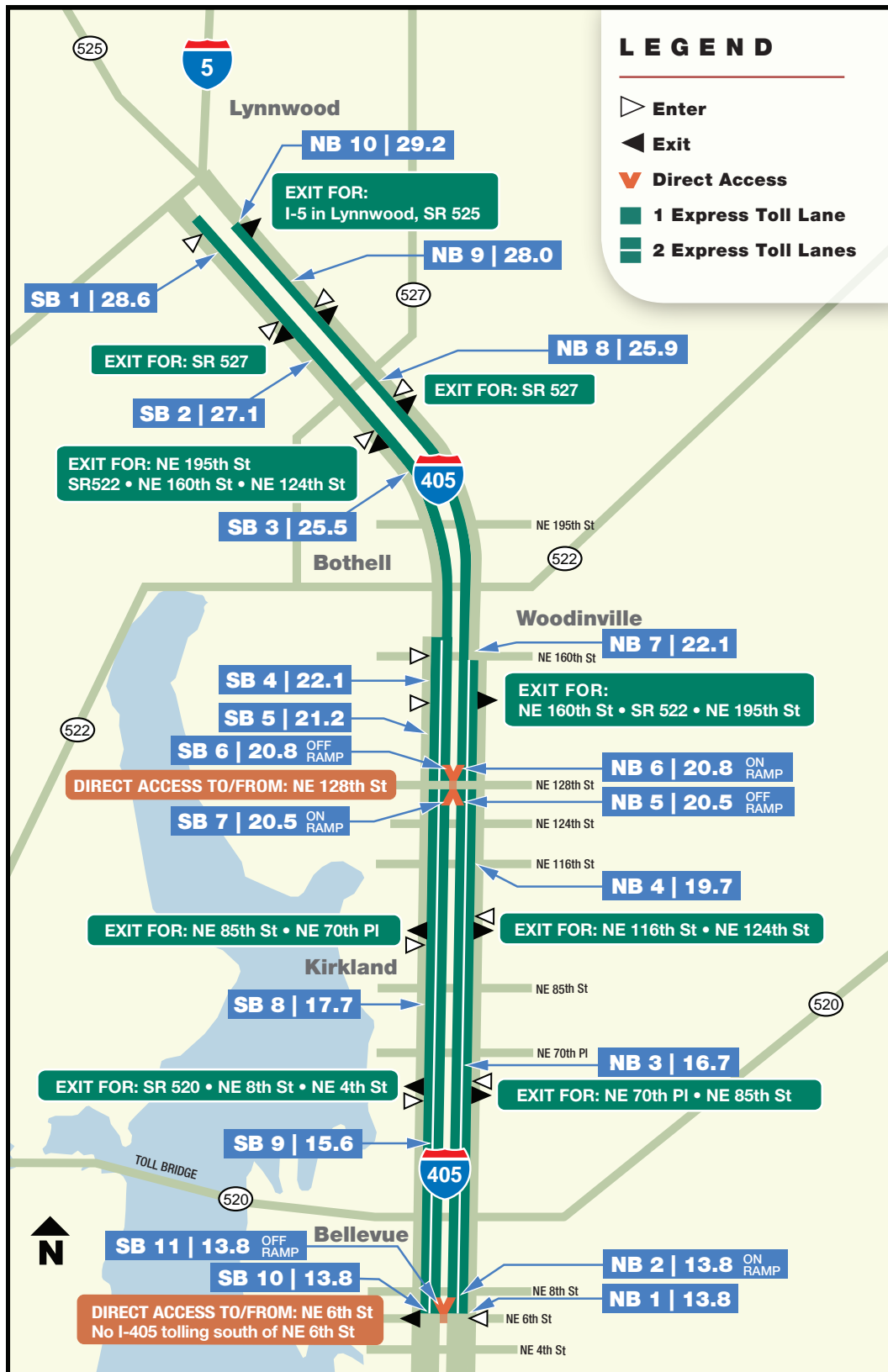
AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			SR 527 (Single-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Jun	2015	Mainline	12,225	14,166	55,328	56,319
		HOV	3,095	4,887	10,683	10,793
		Total	15,320	19,053	66,011	67,112
	2016	Mainline	12,260	13,865	55,920	56,902
		ETL	4,012	5,373	11,468	10,740
		Total	16,272	19,238	67,388	67,642
	Total Change (2016-2015)			952	185	1,377
Jul	2015	Mainline	12,440	14,016	56,522	56,423
		HOV	2,797	4,781	10,698	11,386
		Total	15,237	18,797	67,220	67,809
	2016	Mainline	11,761	13,432	54,902	55,848
		ETL	3,699	5,121	11,909	10,812
		Total	15,460	18,553	66,811	66,660
	Total Change (2016-2015)			223	-244	-409
Aug	2015	Mainline	12,445	14,210	56,452	56,206
		HOV	2,925	4,685	10,755	11,346
		Total	15,370	18,895	67,207	67,552
	2016	Mainline	12,155	13,573	55,115	55,947
		ETL	4,035	5,268	12,364	11,170
		Total	16,190	18,841	67,479	67,117
	Total Change (2016-2015)			820	-54	272
Sep	2015	Mainline	11,603	13,984	53,381	54,701
		HOV	2,820	4,286	8,897	8,964
		Total	14,423	18,270	62,278	63,665
	2016	Mainline	11,177	13,640	52,915	54,656
		ETL	3,950	5,125	11,567	10,450
		Total	15,127	18,765	64,482	65,106
	Total Change (2016-2015)			704	495	2,204

AVERAGE WEEKDAY SCREENLINE VOLUMES COMPARISON BEFORE AND AFTER EXPRESS TOLL LANES						
			SR 527 (Single-Lane Section)			
			AM Peak (SB, 5-9a)	PM Peak (NB, 3-7p)	Daily Total (SB)	Daily Total (NB)
Oct	2015	Mainline	11,773	13,483	53,876	55,295
		ETL	6,269	4,773	7,741	7,231
		Total	15,042	18,256	61,617	62,526
	2016	Mainline	11,186	13,643	51,919	53,482
		ETL	4,020	5,127	11,039	10,534
		Total	15,206	18,770	62,958	64,016
	Total Change (2016-2015)		164	514	1,341	1,490
Nov	2015	Mainline	11,047	13,103	52,034	53,390
		ETL	3,226	4,474	8,121	7,256
		Total	14,273	17,577	60,155	60,646
	2016	Mainline	10,724	13,296	51,492	52,930
		ETL	3,540	4,807	10,866	10,279
		Total	14,264	18,103	62,358	63,209
	Total Change (2016-2015)		-9	526	2,203	2,563
Dec	2015	Mainline	10,845	12,846	52,300	53,035
		ETL	2,710	4,170	7,882	7,285
		Total	13,555	17,016	60,182	60,320
	2016	Mainline	10,915	13,433	51,169	53,155
		ETL	3,769	4,914	11,126	10,252
		Total	14,684	18,347	62,295	63,407
	Total Change (2016-2015)		1,129	1,331	2,113	3,087

Detailed speed data

- Due to the large amount and detail of the speed data requested for each travel segment, this data will be provided on WSDOT's website at <https://www.wsdot.wa.gov/Tolling/405/library.htm>
- Data summary: Monthly average, 5th percentile, and 95th percentile speeds (miles per hour) along I-405 in 5 minute increments from October 2014 to June 2016. Speeds are summarized in two segments (Southern Corridor- Downtown Bellevue to SR 522 and Northern Corridor - SR 522 to Swamp Creek) and for the full length in the HOV/Express Toll Lanes and the general purpose lanes.

Reference map for locating mileposts along I-405



FOR MORE INFORMATION

Visit [GoodToGo405.org](https://www.GoodToGo405.org) or contact us at GoodToGoTolling@wsdot.wa.gov

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