



Notable results

- *Puget Sound area travel patterns stabilized in 2013, following the introduction of tolling on the State Route 520 bridge which began in December 2011*
- *In 2013, employment levels improved 5.2 percent compared to 2012, contributing to growth in Seattle area traffic volume and congestion*

Economy contributes to highway congestion

Puget Sound-area traffic experienced significant changes in the region's travel patterns in 2012 compared to the travel patterns that existed before tolling started on State Route 520 in December 2011. The 2012 patterns continued into 2013, indicating that the region now has established new travel patterns.

This travel time trends analysis looks at traffic conditions for the first six months (January through June) of 2013 and changes relative to the same time period in 2012. Some key observations include:

- Economic growth caused employment levels to increase by 5.2 percent between June 2012 and June 2013 in the Seattle-Bellevue-Everett metropolitan statistical area.
- Daily traffic volumes in 2013 are up by 2 to 3 percent, and peak period (Monday-Friday, 5 to 10 a.m. and 2 to 8 p.m.) traffic grew between 2 and 4 percent, although growth in traffic volume varied from corridor to corridor.
- Similarly, changes in travel time (the amount of time it took for commuters to reach their destination) varied widely, ranging from a seven-minute increase in travel time on Interstate 5 (I-5) during the Everett to Seattle morning commute to a three-minute reduction on the State Route (SR) 520 evening commute from Bellevue to Seattle.

Puget Sound area travel trends stabilize after bridge tolling

When tolling began on SR 520, travelers weighed the cost of a toll against the benefit of a shorter commute time. The result is a new standard for Puget Sound area travel patterns, including:

- Reduced traffic on SR 520, as drivers unwilling to pay the toll opted to use I-90 to cross Lake Washington. Some drove SR 522 along the north end of the lake, or modified their trips in other ways.

- Some bridge users chose to take advantage of improved transit service, funded by the Seattle (Lake Washington) Urban Partnership program (see gray box on [p. 16](#) for more details), rather than drive across the lake.
- Other drivers altered travel plans to avoid crossing Lake Washington altogether.
- The shift in cross-lake traffic from SR 520 to I-90 subsequently led to increased traffic volumes on both I-405 through downtown Bellevue and I-5 in downtown Seattle. The increased congestion led to longer travel times for all commuters using those highways, including those who didn't cross Lake Washington daily.

The traffic pattern established in 2012 did not go away, instead traffic patterns in the first six months of 2013 increased modestly from the same time period in 2012. With few exceptions, daily traffic volumes on most routes went up about 2 percent between 2012 and 2013. Peak period traffic volumes varied more significantly than daily volumes, even when comparing the same route. Similarly, while congestion generally increased, performance on some roadway sections actually improved. This improvement was due to the completion of WSDOT projects, and also because as bottlenecks upstream of roadway sections worsened, the road downstream saw less congestion.



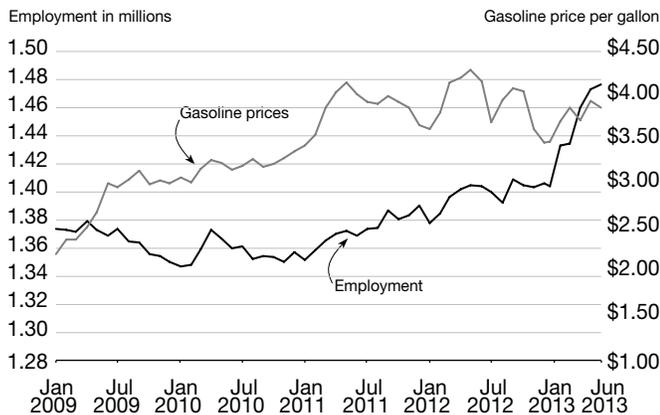
Interstate 5 rush hour traffic traveling southbound near Ship Canal Bridge.

Employment levels on the rise, so is traffic congestion

Rising employment puts more drivers on the road

The increased traffic congestion experienced in 2013 was likely due to the growth in economic activity in the central Puget Sound region. Employment levels began increasing in the region in mid-2011 with a 5.2 percent increase between June 2012 (1,403,913 total jobs) and June 2013 (1,476,977 total jobs). Gas prices typically influence fluctuations in traffic levels. However, during the past two years this has not been the case, as gas prices are relatively stable, as illustrated in the chart below.

Washington employment rises, gas prices stabilize January 2009 through June 2013; Seattle-Bellevue-Everett Metropolitan Statistical Area



Data source: Bureau of Labor Statistics – Local Area Unemployment Statistics; U.S. Department of Energy – Energy Information Administration.
 Note: Inflation adjusted using Consumer Price Index.

Cross-lake traffic volume increases

Between 2012 and 2013, SR 520 traffic volume grew between 1 and 4 percent during the peak period (see [p. 14](#)), depending on the direction of travel and the time of day. The morning peak period, westbound traffic volume on I-90 increased 2 percent, while the return trip eastbound in the evening grew 4 percent. The traffic volumes on I-90 reverse commutes also increased: eastbound in the morning was up 5 percent and westbound in the evening grew 4 percent.

SR 520 travel time changes were mixed in 2013 compared to 2012. The 10-mile Bellevue to Seattle evening commute experienced three-minute faster daily travel times, from 27 minutes in 2012 to 24 minutes in 2013. On the other hand, Seattle to Bellevue morning and afternoon commutes on SR 520 saw an increase in daily travel

time by two minutes. Similarly, the 11-mile commute on I-90 from Seattle to Bellevue experienced a two-minute improvement in travel time, from 19 minutes in 2012 down to 17 minutes in 2013. The 10-mile Bellevue to Seattle evening commute saw a minute increase in travel time in 2013 (27 minutes) compared to 2012 (26 minutes).

North-south corridors experience longer travel times in 2013

As with SR 520 and I-90, traffic volumes on the major north-south corridors of I-5 and I-405 saw modest increases in 2013. Sections of both I-5 and I-405 through the central Puget Sound area are operating at capacity, to the point that even a modest increase in vehicles can result in substantially worsened congestion and commute travel times. Just as adding a few drops of water to a glass already filled to the brim can cause an overflow, highway segments can only operate efficiently at certain capacity. Anything beyond this can exponentially deteriorate traffic flow and lead to traffic jams.

I-5 corridor (2013 vs. 2012): Traffic volumes on I-5 grew between 1 and 3 percent both in terms of peak period volumes and total daily volumes. This resulted in increased travel times by up to seven minutes daily based on the commute.

Commutes between Seattle and Everett: The 24-mile morning trip from Everett to Seattle, which at 60 mph should take approximately 24 minutes, instead took about 47 minutes in 2013. This is seven minutes longer than the 40-minute travel time experienced in 2012. In 2013, this trip included three distinct bottlenecks where congestion grew substantially: one at the I-5/I-405 interchange near Lynnwood, a second on I-5 near the King/Snohomish County line, and the third on a section of I-5 from Northgate to the Ship Canal Bridge. Conversely, modest congestion relief occurred south of the SR 520 interchange. The evening trip from Everett to Seattle saw no change in travel time in 2013. This was due to an increase in travel delay from Northgate to SR 520 that was balanced out by improvements from SR 520 to downtown Seattle.

In the other direction, the morning trip from Seattle to Everett saw no change in commute performance, while the evening commute saw a three-minute increase in travel time due to increased congestion from downtown Seattle to Northgate.

Travel Time Trends Semi-Annual Report

Traffic volume increase affects I-5 and I-405 performance

Commutes between Seattle and Federal Way: The 22-mile commute between Federal Way and Seattle takes 22 minutes when traveled at posted speed. However, the morning commute from Federal Way to Seattle took 45 minutes in 2013, more than doubling the travel time experienced during other times of the day. This commute saw a 2 percent increase in traffic volume along with a two-minute increase in travel time compared to 2012. The extra 23 minutes in travel time experienced on this trip in 2013 were due to two routinely congested locations: one extending from Federal Way to Des Moines and the other spanning from the north end of Boeing Field to downtown Seattle.

The southbound evening commute from Seattle to Federal Way saw a 2 percent increase in traffic volume with no notable change in commute travel time. This trip did not experience any significant amount of congestion.

I-405 corridor (2013 vs. 2012): Similar to I-5, I-405 serves several major commute destinations within the central Puget Sound area. The four largest and most congested commute trips on the I-405 corridor (listed below) experienced growing congestion in 2013:

- Tukwila to Bellevue (13 miles) – morning
- Bellevue to Tukwila (13 miles) – evening
- Everett to Bellevue (24 miles) – morning
- Bellevue to Everett (23 miles) – evening

Commutes between Bellevue and Tukwila: Based on the trip length, commutes between Bellevue and Tukwila should have a travel time of 13 minutes. However, due to congestion on I-405 it took 34 minutes in 2013 and 32 minutes in 2012, which is almost three times the travel time experienced at the posted speed. Traffic volumes on the Tukwila to Bellevue route in the morning and the Bellevue to Tukwila route in the evening grew 3 and 1 percent, respectively. These commutes experience routinely congested spots: in the morning, between the SR 167 interchange and Kenndale Hill, and in the evening between downtown Bellevue and the I-90 interchange, and in Renton approaching the SR 167 interchange.

Commutes between Bellevue and Everett: The 24-mile morning commute on I-405 from Everett to Bellevue took drivers 53 minutes to complete in 2013 and 50 minutes

in 2012: a three-minute increase in travel time with minor growth in traffic volume. This is in part due to construction activity for the I-405 Express Toll Lanes project.

Similarly, the 23-mile Bellevue to Everett evening commute travel time increased five minutes, from 37 minutes in 2012 to 42 minutes in 2013, despite a 4 percent decrease in peak period traffic volumes during the same time. This trip experienced slower traffic conditions during the afternoon peak period extending from the SR 520/I-405 interchange north to the SR 522/I-405 interchange – a distance of more than eight miles. Congested conditions were also experienced approaching the I-5/I-405 interchange in Lynnwood.

SR 167 corridor (2013 vs. 2012): SR 167 did not experience significant changes in traffic conditions between 2012 and 2013. Traffic volumes along the 10-mile Auburn to Renton morning commute route dropped by 4 percent, thereby improving daily travel times by one minute, from 18 minutes in 2012 to 17 minutes in 2013. Half of the drop in general purpose lane volume is because of increased use of the adjacent high-occupancy toll lane. The 10-mile Renton to Auburn evening commute saw no measurable change in traffic volume. The travel times in 2012 and 2013 remained steady at 16 minutes.

A list of 19 sampled high demand Puget Sound area commute travel time and volume changes during the first six months of 2013 can be accessed at http://wsdot.wa.gov/publications/fulltext/graynotebook/GNB52_Extra/2013_FirstSemi-AnnualTravelTimes.pdf.

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Partnership aims to relieve congestion

The Federal Highway Administration's Urban Partnership Program was instituted to aggressively use four strategies to relieve urban congestion: tolling, transit, telecommuting, and technology. Seattle (Lake Washington) area local partners include King County, Puget Sound Regional Council, and the Washington State Department of Transportation. More information on the Seattle (Lake Washington) Urban Partnership Agreement can be found at www.upa.dot.gov/agreements/seattle.htm.