



Economic Downturn Reduces Travel Demand in the Central Puget Sound

Major Puget Sound commute routes see travel times improve as economic conditions worsen

This is an analysis of patterns of travel times and vehicle volumes on freeways in the greater Seattle area during the second half of 2008 and the first two months of 2009. This report complements a previous study published last fall concerning high fuel prices and improved travel times during the first half of 2008 (please see the September 31, 2008 *Gray Notebook*, pp. 12-16).

Rising unemployment and eroding consumer confidence have contributed to a continued overall decline in travel demand in the central Puget Sound, which in turn has led to improving travel times and decreasing vehicle volumes (please see the back cover for an in-depth discussion of declining economic conditions). WSDOT worked with the University of Washington's Transportation Center (TRAC) to conduct a preliminary study of the impacts of the economic downturn on a sample of 18 key commute routes across the central Puget Sound.

Travel times improve on 15 of 18 commute routes during the second half of 2008

Overall, travel times for the 18 major commute routes examined in this study were lower for most trips during the July-December 2008 time period. Compared to the same time period in 2007, 15 of the 18 trips had improved travel times, while the other three trips showed little or no change. This distribution is similar to the overall pattern of results from WSDOT's analysis of the first six months of 2008 vs. 2007, when eight of 18 trips had lower travel times and the other 10 trips had small or near-zero changes during a period of high fuel prices. However, the second half of the year does show a more pronounced shift toward faster travel times than was seen in the first half of the year.

The largest change in average travel times was on the *Federal Way to Seattle* commute during the AM peak period, which showed an estimated trip time improvement of seven minutes. A review of the Federal Way trip data indicates that 2007 was a culmination of several years of steadily growing travel times. The more recent trend suggests that 2008 could be a year of transition. A review of travel times in successive months showed that 2007 monthly peak travel times were consistently higher than those in 2008.

Also notable were the *Everett to Bellevue* (AM) commute, the *Bellevue to Everett* (PM) commute, and the *Everett to Seattle* (AM) commute, each of which showed a five minute improvement in the average peak period travel time. A possible contributing factor



Travel Trends 2008-2009

January-June 2008

- Due in part to high fuel prices, travel times improve by 1 to 2 minutes on 8 of 18 key commutes, with 10 relatively unchanged.
- Peak period volumes grow despite high fuel costs; discretionary travel and daily volumes decline.

July-December 2008

- Economic conditions deteriorate in the central Puget Sound; fuel prices drop.
- Travel times improve between 1 and 7 minutes on 15 of 18 key commutes, with 3 unchanged.
- Peak period volumes decline; discretionary travel continues to drop.

January-February 2009

- Based on preliminary data, travel times consistently down on the 18 surveyed commutes.
- Tukwila to Bellevue morning commute improves by 12 minutes in part due to new WSDOT auxiliary lane on I-405.
- Changes to peak period volumes mixed—some up and some down.

The Gray Notebook

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Excerpt**

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Travel Times Improve on 15 of 18 Commute Routes

to travel time changes on the two trips between Everett and Bellevue was the Kirkland Nickel Stage 1 project, which provided capacity and merging improvements on I-405 in the Kirkland area between NE 85th and NE 124th to help mitigate the “Kirkland Crawl”. Stage 1 was completed in November 2007. In the case of the *Everett to Seattle (AM)* commute, some of this travel time improvement can be attributed to a higher number of outlier days with much higher than average travel times during the second half of 2007, compared to the comparable months of 2008.

Preliminary 2009 analysis: Average travel times consistently down during Jan.-Feb. of 2009

Preliminary data suggest that for the most part, travel time trends during the first two months of 2009 were consistent with those in the previous six-month comparison, but with less pronounced changes. However, unlike the July-December comparison, there were two trips in particular that showed relatively large increases in travel times: *Everett to Seattle (AM)*, and *Everett to Bellevue (AM)*. These trips both had travel time changes of +4 minutes. In both cases, this represented a noticeable change from the pattern of lower travel times in the previous six months. The limited two-month sample and the resulting susceptibility of average values to the effect of outlier days (such as those due to winter weather) make it difficult to determine the significance of this pattern until more data are analyzed.

The most notable improvements in travel times seen during the first two months of 2009 were *Federal Way to Seattle (AM)*, and *Tukwila to Bellevue (AM)*. The Federal Way trip time was 7 minutes shorter than the year before, a continuation of the pattern seen for this trip during the second half of 2008. WSDOT ran multiple tests to confirm the reliability of the data for these two routes.

Tukwila to Bellevue morning commute improves by 12 minutes in part due to completion of new auxiliary lane on I-405

The *Tukwila to Bellevue (AM)* commute showed the largest travel time reduction during the first two months of 2009, with average AM peak period times 12 minutes faster than the year before. The preliminary data suggest that an important contributor to this trip time reduction was the completion of a supplementary lane near the I-90 interchange that was opened in mid-January 2009. Peak period travel times dropped noticeably immediately

following the opening, and generally stayed at a lower level in the weeks following.

Overall, peak period volumes decline during the second half of 2008

While trends can vary by the specific location chosen, the overall pattern of peak period vehicle volume change appeared to have shifted significantly over the course of 2008. The first six months of 2008 saw a general trend toward higher peak period volumes compared with the first six months of 2007, with 10 of 14 trips showing volume growth between +0.5% to +5.5%. Increasing peak period volumes during the first half of 2008 had suggested that despite rising gas prices, employment growth was still influencing travel growth during that time period.

During the second half of 2008, however, volume trends moved noticeably in the other direction, with 12 of 18 sampled locations showing reduced volumes compared to the second half of 2007. Decreases in volumes ranged between -0.5% and

July-December 2008: Changes in average travel times during peak periods¹

Comparing July through December data for 2007 and 2008

		Average Travel Time (min.)			Volume Change	
		2007	2008	Δ from 2007	Peak Period	Daily
Peak Direction - Morning Commutes						
I-5	Federal Way – Seattle	42	35	-7	+2.7%	-2.9%
I-5	Everett – Seattle	41	36	-5	+2.1%	-3.3%
I-405	Everett – Bellevue	42	37	-5	-1.8%	-4.9%
I-405	Tukwila – Bellevue	35	33	-2	-0.6%	-3.2%
SR 167	Auburn – Renton	17	14	-3	+6.2%	+1.2%
I-90	Bellevue – Seattle	14	12	-2	-2.5%	-3.4%
I-90	Seattle – Bellevue	14	13	-1	-5.0%	-4.9%
SR 520	Bellevue – Seattle	14	13	-1	-2.2%	-3.1%
SR 520	Seattle – Bellevue	16	15	-1	-3.4%	-3.9%
Peak Direction - Evening Commutes						
I-5	Seattle- Federal Way	31	29	-2	+0.6%	-3.7%
I-5	Seattle - Everett	38	34	-4	-0.5%	-4.3%
I-405	Bellevue - Everett	41	35	-6	+4.1%	-2.1%
I-405	Bellevue - Tukwila	31	31	0	-1.8%	-4.0%
SR 167	Renton - Auburn	16	14	-2	+2.3%	-6.7%
I-90	Bellevue - Seattle	22	20	-2	-2.6%	-3.4%
I-90	Seattle - Bellevue	13	13	0	-1.8%	-4.9%
SR 520	Bellevue - Seattle	23	21	-2	-1.9%	-3.1%
SR 520	Seattle - Bellevue	16	16	0	-1.8%	-3.9%

Source: Washington State Transportation Center (TRAC)

¹ Travel time and volume data for weekdays only; peak periods are 6-9 AM and 3-7 PM.



Peak Period Volumes Drop on Most Routes

-5.0%. The *Seattle to Bellevue* spot location on I-90 featured the largest volume drop (-5%).

While 12 of the sampled locations showed drops in peak period volumes, six locations showed volume growth during the second half of 2008. The largest change was on the SR 167 trip between *Auburn and Renton* (AM), which showed an estimated growth in volume of over 6%. However, a possible contributing factor to those volume changes was the SR 167 HOT Lanes pilot project that began construction in the second half of 2007, and began operations in May 2008.

Changes to peak period volumes mixed for January and February 2009

The preliminary data from the first two months of 2009 showed a mix of trends, with six locations showing decreases in volumes, 11 locations showing increases in volumes, and one location remaining unchanged. Most notable was *Tukwila to Bellevue* (AM), which saw vehicle volumes increase by as much

January and February 2009: Changes in average travel times during peak periods¹

Comparing January and February data for 2008 and 2009

		Average Travel Time (min.)			Volume Changes	
		2008	2009	Δ from 2008	Peak Period	Daily
Peak Direction - Morning Commutes						
I-5	Federal Way – Seattle	40	33	-7	+4.3%	-0.1%
I-5	Everett – Seattle	37	41	+4	-3.1%	-1.5%
I-405	Everett – Bellevue	36	40	+4	-4.3%	-3.0%
I-405	Tukwila – Bellevue	35	23	-12	+22.9%	+3.9%
SR 167	Auburn – Renton	16	15	-1	+6.9%	+3.1%
I-90	Bellevue – Seattle	13	13	0	+0.1%	-0.2%
SR 520	Bellevue – Seattle	14	14	0	-1.0%	+0.6%
I-90	Seattle – Bellevue	14	14	0	-6.9%	-2.3%
SR 520	Seattle – Bellevue	17	17	0	-0.6%	-0.7%
Peak Direction - Evening Commutes						
I-5	Seattle- Federal Way	31	29	-2	+1.1%	-1.2%
I-5	Seattle - Everett	37	36	-1	0.0%	-1.3%
I-405	Bellevue - Everett	37	34	-3	+5.2%	+0.6%
I-405	Bellevue - Tukwila	29	29	0	+0.1%	-1.7%
SR 167	Renton - Auburn	14	13	-1	+0.4%	-3.7%
I-90	Bellevue - Seattle	18	16	-2	-1.9%	-0.2%
SR 520	Bellevue - Seattle	22	20	-2	+0.8%	+0.6%
I-90	Seattle - Bellevue	12	13	+1	+0.6%	-2.3%
SR 520	Seattle - Bellevue	16	15	-1	+0.7%	-0.7%

Source: Washington State Transportation Center (TRAC)

¹ Travel time and volume data for weekdays only; peak periods are 6-9 AM and 3-7 PM.

as 23%, primarily due to improved throughput efficiency related to the completion of the auxiliary lane on I-405 mentioned earlier. *Bellevue to Everett* (PM) showed volume growth of just over 5%. *Federal Way to Seattle* (AM) had a volume increase of just over 4% (to go with a 7 minute drop in travel times), while *Auburn to Renton* morning commute saw 4% volume growth (when adding GP plus HOV volumes). Trips with notable drops in volume were *Everett to Seattle* (AM), and *Everett to Bellevue* (PM), with -3% and -4% respectively (these two trips had the largest increases in travel times as well).

Drops in daily vehicle volumes highlight continued decline in discretionary travel

Like the peak period vehicle volumes, the overall pattern of daily vehicle volume change also appeared to shift over the course of 2008 at the selected spot locations. During the first six months of 2008, volumes were generally stable, with a marginal trend toward slightly lower volumes compared to the first six months of 2007, depending on the corridor. By the second half of 2008, however, daily volumes were almost universally lower on a year-to-year basis, regardless of corridor.

Nearly every location sampled showed a drop in volumes, ranging from -2.1% to -6.7%. The only exception to this pattern was the *Auburn to Renton* trip on SR 167, which showed a 1.2% increase in daily volume, although the AM peak period showed a 6.2% increase, which may be attributable to the construction of the HOT Lanes in 2007 as discussed earlier.

Preliminary data showed that the trend toward lower volumes continued during the first part of 2009. However, the rate of decline slowed at every location compared to July-December 2008. At some locations, volumes increased. Two locations showed a slight increase in volume, while two other locations had volume increases of over 3%. The *Tukwila to Bellevue* route on I-405 had a 3.9% volume increase, possibly associated with the opening of a supplementary lane near I-90, while the *Auburn to Renton* route on SR 167 had a 3.1% increase.

Statewide, volumes continue to decline. According to monthly year-over-year comparisons, since December 2007, daily traffic volumes on state highways have declined each month with drops ranging from -0.3% and -4.2% (this excludes the drop in volumes related to the severe weather events seen in December 2008, which helped reduce volumes statewide by 15.7%).

Driving Forces and Other Travel Trends During the Second Half of 2008

Driving Forces: Economic recession impacting travel conditions

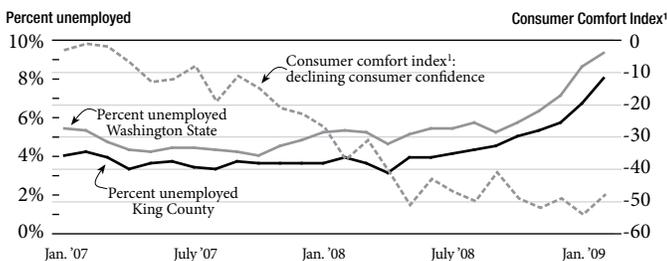
Unemployment rises sharply in the second half of 2008, reducing peak period travel demand

In the Seattle-Everett-Bellevue area, the size of the employed labor force grew from 1.35 million in January 2007, to 1.39 million in January 2008, then dropped to an estimated 1.36 million in January 2009. The average unemployment rate was at 4.3% at the beginning of 2007, and hovered near 4% (varying from 3.4% to 4.3%) until mid-2008, then rose sharply to 7.1% as of January 2009. The annual number of persons employed in the region dropped by approximately 34,000 during calendar year 2008.

Eroding consumer confidence likely contributing to declines in discretionary driving

A number of national consumer confidence indicators show a sharp deterioration in consumers' views of the economy. An ongoing weekly national survey suggests that consumer confidence has dropped significantly in the past year. The survey asks respondents three questions regarding the state of the national economy as well as their own personal finances. At the beginning of 2007, survey results were at a near-neutral level (the equivalent of a 50-50 split between respondents with positive vs. negative views about the economy); by January 2009, responses had reached an all-time 23-year low for the survey. An effect of this decrease in consumer confidence is reduced spending, which leads to less discretionary travel, and less freight travel to restock inventories or make deliveries.

Unemployment on the rise as consumer confidence declines, January 2007 - February 2009



Data Sources: Washington State Employment Security Department and ABC News-Washington Post Consumer Comfort Survey.

¹ Consumer comfort index ranges from +100 (100% of survey respondents with a positive view of the economy) to -100 (100% of survey respondents with a negative view of the economy).

Gas prices drop sharply following record high in mid-2008

Since the beginning of 2007, gas prices rose from \$2.66 per gallon to a high of \$4.35 per gallon in mid-2008, continuing a general upward trend that had been ongoing for several years. During the second half of 2008, however, gas prices dropped to a low of \$1.77 per gallon as of December 2008, levels that

had not been seen since January 2005. Since then, prices have risen to \$2.18 per gallon as of early March 2009. As a result of the sharp drop in fuel prices during the second half of 2008, WSDOT believes that gas prices are no longer influencing driver behavior as they did in the first half of the year.

Transit ridership grows in the Puget Sound region

Sound Transit's Express Bus and Commuter Rail programs showed growth in their ridership during the second half of 2008. Boardings on Sound Transit buses went from approximately 5.5 million during the second half of 2007 to 6.6 million in the second half of 2008, an increase of 21%. Commuter Rail, which runs from Tacoma-Seattle and Everett-Seattle, has grown from roughly 1.2 million to 1.4 million over the same period, a 19% increase. These increases continue the trend noted in the earlier report looking at the first six months of 2008.

Sound Transit ridership grows by roughly 20% July - December, 2007 and 2008

	2007	2008	Difference	% Δ
Express Bus	5,509,559	6,648,912	+1,139,353	+21%
Souder Rail	1,183,070	1,408,513	+225,443	+19%

Source: Sound Transit

Collisions continue to decline

The second half of 2008 showed a decrease in collisions around the state and in King County. A reduction in collisions, in addition to being a boon for public safety, also improves mobility on state highways. This drop in collision rates began in 2007 and accelerated in 2008. The decrease in traffic has occurred at the same time as the decrease in collisions, in Washington and around the country.

Statewide, collisions were down about 10% during the second half of 2008 as compared to the same time period in 2007. King County showed a drop of 8.2% in all collisions, and a drop of 6.0% for serious and fatal injury collisions, when comparing the second halves of 2007 and 2008.

Collisions declined in the second half of 2008 All Collisions; July - December, 2007 and 2008¹

	2007	2008 ¹	Difference	% Δ
Statewide	68,045	61,218	-6,827	-10.0%
King Co.	22,693	20,830	-1,863	-8.2%

Data Source: WSDOT Transportation Data Office and Traffic Office.

¹2008 data is preliminary.

WSDOT continues to track changes to traffic conditions

WSDOT will continue to assess changes to Seattle-area travel conditions. The 2009 *Congestion Report* will analyze a full year of congestion data on a broad array of routes in the September 30, 2009 *Gray Notebook*. For more information please contact Daniela Bremmer at 360/705-7953 or Ted Trepanier, State Traffic Engineer at 360/705-7280.