

Travel Conditions Showing Improvement in 2008

Higher gas prices and congestion relief strategies combine to make a difference

National statistics show driving declined for the first time since the oil crisis of the 1970s. Washington drivers are clearly cutting back, using 63 million fewer gallons of fuel in the first six months of 2008 compared to the first six months of 2007.

WSDOT worked with the University of Washington's Transportation Center (TRAC) to conduct a preliminary study of the impacts of rising fuel costs on a sample of seven key corridors across the Puget Sound metropolitan region during the first six months of 2008. This report is a supplement to the *Gray Notebook* Congestion Report, November 2008.

At closer examination, Puget Sound travel trends are somewhat different than those found nationally. The region experienced two distinct trends: the increase in peak hour travel demand due to continued employment growth, and the decrease in overall travel demand due to the significant increase in gas prices.

While discretionary driving declined on nights and weekends compared to 2007, Puget Sound traffic volumes climbed about 2-4% during peak commute times, countering the downward national trend in traffic volumes as the strong economy continued to draw drivers to the freeways. In addition, the region's most highly traveled roads moved commuters more efficiently, which contributed to the first overall improvement in peak period travel times since 2002.

The improved travel times through some of Washington's busiest corridors during the first six months of 2008 suggest that WSDOT's congestion relief strategies and their associated projects, combined with higher gas prices, are having a positive effect on the performance of these corridors. WSDOT is committed to reducing congestion through the Moving Washington program, which uses three strategies designed to achieve tangible results: adding capacity strategically; operating efficiently; and managing demand.



Further analysis is underway to measure the effectiveness of WSDOT's strategies systemwide. Specific projects are showing substantial congestion relief benefits. For more information on such project results, please see the September 30, 2008 *Gray Notebook* edition.



Travel times during peak periods improved on six of seven key commute corridors surveyed.



Average commute times decreased by one to two minutes each way.



Overall, average daily traffic volumes declined slightly as gas prices hit historic highs.



Peak period traffic volumes climbed about 2-4% on most corridors, while off-peak volumes declined.



Statewide fuel consumption fell 3.9%, or 350,000 gallons a day.

The Gray Notebook

GNB 31 Excerpt

October 2008

Six of seven commuter corridors show improvement

While congestion remains heavy on several corridors, peak period travel times on six of seven key Puget Sound corridors either improved or remained level for the first half of 2008, compared to 2007. Four of seven major corridors saw increased traffic volumes during peak periods, while six experienced better travel times as traffic flow improved and disruptions declined.

The key trends:

- Reliability: Most drivers experienced substantially faster commutes against the 80th and 95th percent reliability rating (a savings of one to nine minutes depending on the route).
- More than half the 2008 peak travel times were better than in 2005, even after years of worsening commute travel times.
- Traffic volume on all corridors either declined or stayed the same during off-peak hours.
- On weekends, five of seven corridors experienced a decline in volume, compared to 2007, while one corridor showed no change and one corridor experienced a slight increase in volume.
- Overall weekday traffic volumes declined slightly in 2008 from volumes in 2006 and 2007 on four of seven corridors studied.

Six commute corridors experience improved travel times in 2008

Travel times improved on four round-trip daily commutes with higher volumes, and on two round trips with lower to steady volumes. Only the Tukwila to Bellevue I-405 round-trip daily commute experienced longer travel times with higher volumes.

I-5 Federal Way to Seattle

Commuting times improved by three minutes in the morning and two minutes in the afternoon. The 80% reliable travel times improved by five minutes in the morning and evening. Vehicle volumes increased by 4% in both peak periods.

I-405 Everett to Bellevue

Travel times improved by four minutes in the morning and two minutes in the evening. The 95% reliable travel time improved by seven minutes in the morning. Vehicle volumes increased by 4.5% in the morning and by 1.5% in the evening.

Changes in average and reliable travel times for peak period commutes

Comparing January through June data for 2008, 2007, and 2005

Average and reliable travel times in minutes.		Average Peak Period Travel Time		Peak Vol. ¹	95% Reliable Travel Time	80% Reliable Travel Time			
		Δ from 2008	Δ from 2007	Δ from 2007	Δ from 2008	Δ from 2007			
Peak Direction - Morning Commutes									
I-5	Federal Way - Seattle	22.7	-3	+2	+4.0%	24.1	-4	22.8	-5
I-5	Everett - Seattle	33.0	-4	-1	+5.5%	54.2	-9	39.0	-6
I-405	Everett - Bellevue	33.2	-4	-3	+1.5%	53.9	-7	40.4	-5
I-405	Tukwila - Bellevue	33.5	0	+5	+0.5%	55.2	+2	44.1	+1
SR 167	Auburn - Renton	14.4	-1	-1	-4.5% ²	21.6	-4	16.4	-2
I-90	Bellevue - Seattle	13.0	-1	-1	0%	18.2	-5	13.6	-2
SR 520	Bellevue - Seattle	13.6	-1	-2	+2.0%	20.0	-3	15.3	-3
I-90	Seattle - Bellevue	13.9	-1	0	N/A	21.2	-1	15.9	-2
SR 520	Seattle - Bellevue	16.5	-1	0	N/A	28.0	-1	21.4	-2
Peak Direction - Evening Commutes									
I-5	Seattle - Federal Way	28.0	-2	-2	+4.0%	42.7	-8	32.3	-5
I-5	Seattle - Everett	31.3	-2	-2	+1.0%	48.9	-3	37.7	-3
I-405	Bellevue - Everett	32.0	-2	0	+4.5%	49.2	-2	39.0	-2
I-405	Bellevue - Tukwila	28.1	+1	+3	+2.0%	45.2	+1	37.0	+3
SR 167	Renton - Auburn	13.4	-1	0	-2.0% ²	23.3	-6	16.5	-2
I-90	Bellevue - Seattle	18.1	-2	0	N/A	32.2	-6	23.7	-4
SR 520	Bellevue - Seattle	20.3	-1	-2	+4.0%	29.5	-3	25.6	-1
I-90	Seattle - Bellevue	12.2	-2	-2	0%	16.5	-6	12.6	-3
SR 520	Seattle - Bellevue	14.0	-1	-2	N/A	22.3	-3	16.9	-2

Source: Washington State Transportation Center (TRAC).

¹ Volumes based on spot locations.

² Volumes prior to the opening of SR 167 HOT lane pilot project, construction may have accounted for drop in volumes.

Note: Travel times are calculated in a different manner than in the 2005-07 travel time analysis in the Congestion Report. This uses the average travel times during the entire peak period. The 2005-07 analysis examines travel times for the five busiest minutes each morning and evening.

Understanding Reliable Travel Times

- 80% reliable travel time = A measure of the 80th percentile longest travel time out of a sample of 130 weekdays, this travel time translates to an 80% likelihood (16 out of 20 trips) you will arrive at a destination on time.
- 95% reliable travel time = A measure of the 95th percentile longest travel time out of a sample of 130 weekdays, this travel time translates to a 95% likelihood (19 out of 20 trips) you will arrive at a destination on time.



Traffic flow improves, transit ridership increases

SR 520 Bellevue to Seattle and Seattle to Bellevue

Travel times improved by one minute in both directions during morning and evening peak periods. Bellevue area employment growth likely explains the 2-4% increase in traffic volumes.

SR 167 Auburn to Renton

Morning and evening travel times improved by one minute as volumes declined between 2-4%. While volumes declined, some drivers may have moved to I-5 northbound, where volumes increased by 4%. The 95% reliable travel times improved by four minutes in the morning and six minutes in the evening.

I-5 Everett to Seattle and return

Travel times improved by three minutes in the morning and two minutes in the evening. The 80% reliable travel times improved by five minutes in the morning and evening. Vehicle volumes increased by 5.5% in the morning and 1% in the evening.

I-90 Bellevue to Seattle and Seattle to Bellevue

Morning travel times improved by one minute in both directions and the evening travel times improved by two minutes in both directions. The 95% reliable travel time improved by five minutes. Volumes remained relatively flat during peak periods.

I-405 Tukwila to Bellevue

Travel times remained steady in the morning and increased by one minute in the evening compared to 2007. The route experienced 1% growth. Normal traffic flow was constricted by a major construction project near the I-405/I-90 interchange.

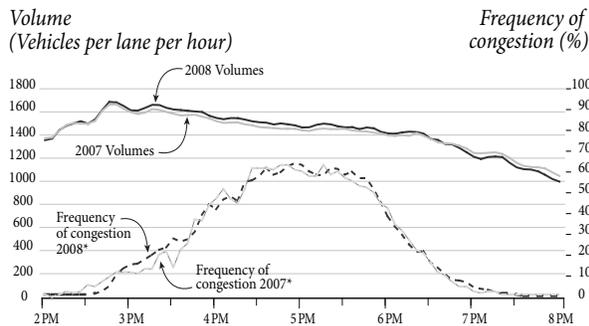
Transit ridership rises

Transit agencies serving Seattle-area communities reported rising passenger boardings tied to record fuel prices. Buses, trains, and vanpools experienced greater demand as commuters sought alternatives for reaching job sites.

Nearly 9,000 more people rode Sound Transit *Express* commuter buses daily in July 2008, compared to July 2007, an increase of 23%, with three of 19 routes experiencing surges of at least 50%.

Frequency of traffic congestion and average weekday traffic volumes—single corridor example

*I-5 at NE 97th St, General Purpose Lanes, Northbound
January-June 2007 vs. January-June 2008*



Data Source: Washington State Transportation Center (TRAC)
*Frequency of congestion refers to the percentage of days when speeds fell below 70% of posted speeds (42 mph)—the threshold for congestion.

The Puget Sound region experienced two distinct trends on four key routes— travel times improved from 2007 to 2008, while more vehicles used the roads.

The graph above, focusing on the I-5 evening commute northbound close to Northgate, shows a slight increase in volume while the frequency of congested conditions (when speeds drop below 42 miles per hour) remained steady and travel times improved by two minutes.

A variety of factors, including a slight decline in the number of cars trying to enter the freeway at key times, helped the corridor move vehicles more efficiently, thus allowing cars to travel at marginally higher speeds.

Enhanced incident response efforts, newly completed projects, declining fatality and serious injury collisions, and rising transit use also contributed to the improvement.

Sound Transit ridership for first halves of 2007 & 2008

Number of boardings	2007	2008	% Δ
ST Express Bus	5,179,487	5,882,975	14%
Souder Commuter Rail	973,582	1,260,110	29%
Average Weekday Boardings ¹	46,038	53,063	15%
Total Boardings	6,153,069	7,143,085	16%

Source: Sound Transit

¹ Includes Tacoma Link boardings.

Increased transit ridership in the Puget Sound is part of a national trend related to higher gas prices. The American Public Transportation Association reported ridership increases of 3.4% and 5.2% in the first and second quarters of 2008 compared to 2007.

In Seattle, with commuter buses transporting many more people than a year ago, the sharp increases in transit ridership likely enabled HOV Lanes to move more commuters in fewer vehicles.

While a full year of data will be more precise, it appears some carpool users switched to transit, and others used general purpose lanes because of improved traffic flow. All but one of the major corridors reviewed showed higher vehicle volumes in general purpose lanes.

HOV lane vehicle volume declined at 13 of 17 checkpoints in the region at an average of about 20 to 30 cars per hour, or under 100 vehicles per peak period (2-5%).

Pump Pressure: Driving declines as gas prices rise

Drivers limit discretionary driving to save on fuel costs

The Puget Sound region appears to be experiencing the effects of drivers cutting back mileage to reduce spending on gas as the \$4.33 price of an average gallon of gas in June 2008 was 33% higher than in June 2007. Nationwide, the Federal Highway Administration estimated driving was down 2.9% over the first half of the year, or 42.9 billion vehicle miles traveled.

Driving levels experienced nearly universal declines in the Puget Sound region during non-peak periods and weekends.

Off-peak periods offer the best example of discretionary driving because travelers typically avoid some trips, combine trips, and change destinations to reduce driving costs.

On weekdays, overall traffic volumes declined at 12 of 18 checkpoints reviewed, due to non-peak declines. On weekends, traffic volumes declined at 13 of 16 local points measured.

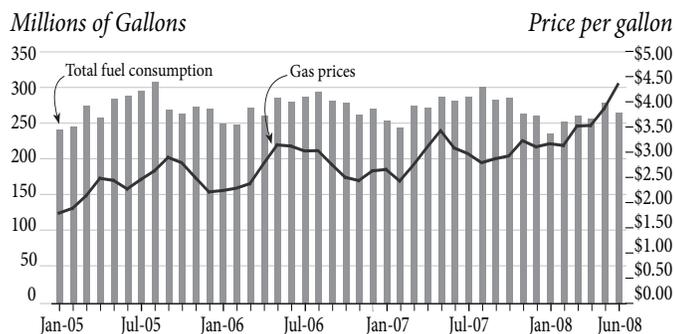
However, peak period volumes increased, following growth in the economy. King County employers added about 32,200 jobs in the first six months of 2008 compared to the same period in 2007 according to the Washington State Employment Security Department. The 2.7% increase likely drew more drivers to the freeways.

Statewide gas consumption declines

Washington State drivers purchased 63.4 million fewer gallons of gasoline in the first six months of 2008 than in 2007, according to preliminary data, for a decline of 3.9%.

While Puget Sound area data was not available, statewide fuel consumption fell approximately 350,000 gallons per day and declined in every month except February, when the extra day for Leap Year helped explain the increase. In other months, 2008 fuel use dropped to the lowest levels since at least 2004.

Gas prices and fuel consumption in Washington State January 2005 - June 2008



Data Source: WSDOT Financial Planning and Analysis.

Fatality and serious injury collisions decline

A drop in collisions, including fatal and serious collisions, is also likely improving travel time reliability. Preliminary data shows statewide fatal and serious injury collisions declined 4.8% in the first half of 2008, compared to the first half of 2007, including an 8.6% drop in King County. The decline in collisions reduced non-recurrent congestion.

Fatal and Serious Injury Collisions

January to June for each year, 2008 data is preliminary

First half of	State	% change from 2007	King County	% change from 2007
2005	21,780	-9.1%	361	-8.6%
2006	22,318	-10.6%	389	-15.2%
2007	20,969	-4.8%	361	-8.6%
2008	19,959		330	

Data Source: WSDOT Transportation Data Office and Traffic Office.

Moving Washington: Congestion relief strategies being implemented statewide

WSDOT utilizes the three balanced strategies of Moving Washington to fight congestion— add capacity strategically, operate efficiently, and manage demand. These strategies are working. Projects being implemented statewide are providing the congestion relief intended as these examples demonstrate:

- **Add capacity strategically:** A before and after analysis of 21 selected Nickel and TPA congestion relief projects statewide, determined that these projects save drivers an estimated 6,400 hours in travel times per day— a 10% improvement following project completion as compared to conditions prior to construction, saving nearly \$60 million each year.
- **Operating efficiently:** The Incident Response program has reduced average clearance times for 90+ minute incidents on key Puget Sound corridors by 7% during the second quarter of 2008 as compared to the same quarter in 2007.
- **Managing demand:** Commute Trip Reduction program in the region reduced approximately 19,200 vehicle trips each weekday morning in 2007 than when these work sites entered the program, reducing delay by an estimated 19% during the peak travel period on average mornings.

For more information on the benefits of WSDOT's congestion relief projects please see: <http://www.wsdot.wa.gov/Accountability/GrayNotebook/SubjectIndex.htm#congestion>

