SR 167 HOT Lanes Pilot Project
Operations Summary
May 3, 2008 – July 31, 2008

Project information

The state's first-ever high occupancy toll (HOT) lanes opened to State Route 167 drivers on Saturday, May 3, 2008. This four-year pilot project located in south King County, provides a new option for solo drivers on SR 167 and evaluates how HOT lanes and variable tolling can improve traffic flow and ease congestion.

A single HOT lane runs in each direction of SR 167 for approximately nine miles between Renton and Auburn. The highway's two general purpose (GP) lanes in each direction remain toll-free and open to all vehicles.

Carpools of two or more people, vanpools, transit and motorcycles use HOT lanes toll-free just like standard HOV (high occupancy vehicle) lanes, and they do not need a transponder. HOT lanes operate daily 5 a.m. to 7 p.m.

Toll rates automatically increase and decrease with the level of congestion to ensure that traffic in the HOT lane always flows smoothly and that buses and carpools enjoy the same fast and reliable trip they depended on in SR 167's HOV lanes before the lanes were converted to HOT lanes.

This summary includes data from the first three months of HOT lanes operations, May 3 through July 31, 2008.

To learn more, please visit the project Web site:
http://www.wsdot.wa.gov/Projects/SR167/HOTLanes

Performance highlights

- Drivers paid an average of $1 to save 10 minutes of travel-time during the peak-hour commutes.
- Travel times for carpools and transit have been maintained.
- There is room in the HOT lane for additional carpool vehicles, transit or toll-paying solo drivers.
- Collisions did not measurably increase or decrease.
- The average number of peak-hour toll transactions has increased each month.

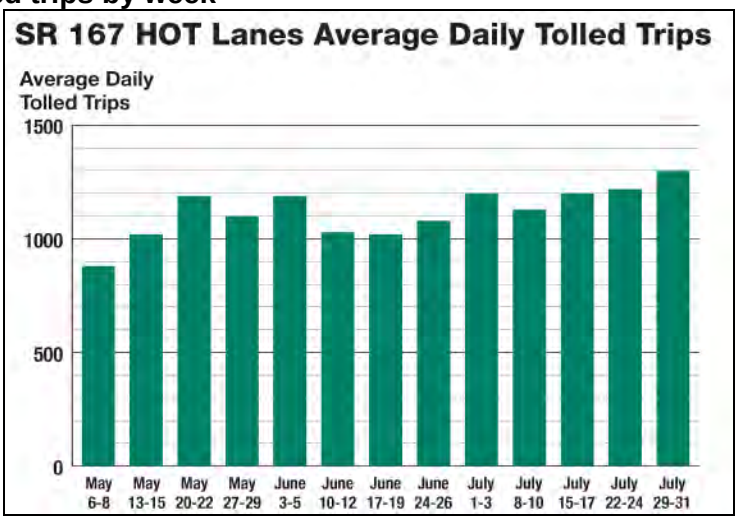
Performance summary

The charts below summarize performance measures on the SR 167 HOT lanes.

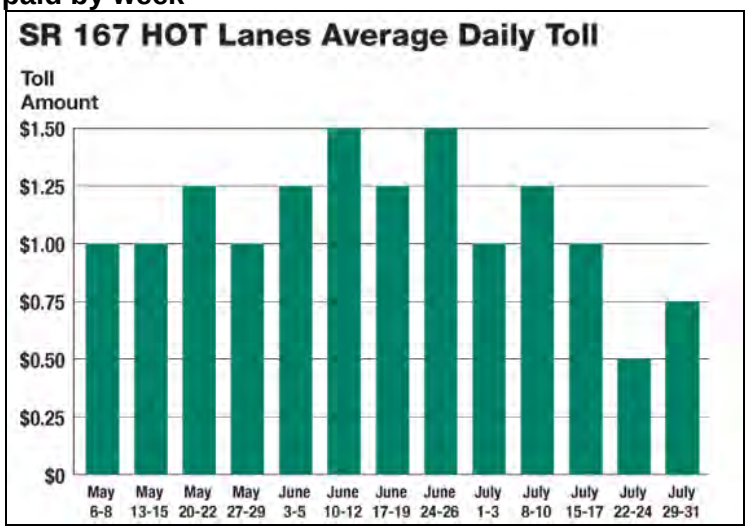
Performance averages by month

	May 2008	June 2008	July 2008
Average toll paid	$1	$1.25	$1
Highest toll paid	$5.75	$9	$9
Average number of daily toll trips	1,050	1,080	1,210
Highest number of daily toll trips	1,220	1,260	1,390
Average peak-hour toll trips	100	140	160
Highest number of peak-hour toll trips	170	210	180

Average daily tolled trips by week



Average daily toll paid by week



Note: These graphics only include data from Tuesday through Thursday due to price and volume volatility associated with holiday and weekend travel.

Performance details

Traffic volumes

Traffic volumes on SR 167 declined roughly three percent in 2008 compared to the same month in 2007 (see chart below). This rate of change is consistent with both regional and national trends and is likely related to the increased price of gasoline and the slowing economy. Average daily trips (ADT) were measured just south of S. 277th Street.

Average ADT	May	June	July
2007	122,000	122,000	124,000
2008	118,000	119,000	121,000
Percent Change	-3.4%	-2.5%	-2.5%

The tables below provide weekday (Tuesday through Thursday) daily and peak hour volumes by direction for the first three months of tolling operations. HOT and GP volumes were measured just south of S. 277th Street.

Average May volumes, Tuesday-Thursday	Toll trips	HOT lane Total	GP lanes total
Northbound peak hour, 7-8am	140	930	3,060
Northbound daily	580	8,400	53,010
Southbound peak hour, 4-5pm	100	910	3,100
Southbound daily	470	8,120	48,820

Average June volumes, Tuesday-Thursday	Toll trips	HOT lane total	GP lanes total
Northbound peak hour, 7-8am	140	950	3,070
Northbound daily	590	8,900	53,300
Southbound peak hour, 4-5pm	100	970	2,920
Southbound daily	490	8,810	48,300

Average July volumes, Tuesday-Thursday	Toll trips	HOT lane total	GP lanes total
Northbound peak hour, 7-8am	160	960	3,230
Northbound daily	680	9,500	53,800
Southbound peak hour, 4-5pm	120	980	2,780
Southbound daily	570	9,530	48,150

The data indicate that HOT lanes still have capacity for additional vehicles; just short of 1,000 total vehicles per hour are using each HOT lane during the peak hour. Because each lane has the capacity to move more than 1,400 vehicles per hour without becoming congested, roadway space exits for transit, carpool vehicles and toll-paying solo drivers.

Travel times

We measured travel times in the three-month period for the HOT and GP lanes throughout the HOT lane corridor (11 miles northbound, eight miles southbound).

HOT lane travel times

HOT lane traffic consistently flowed freely during all hours. Free-flow travel times in the HOT lanes are 12 minutes northbound and eight minutes southbound.

GP lane travel times

- The weekday northbound travel time typically peaked at 20 minutes, occasionally reaching 30 minutes (95th percentile).
- The weekday southbound travel time typically peaked at 14 minutes, occasionally reaching 25 to 28 minutes (95th percentile).

HOT lane travel time savings

- The weekday northbound HOT lane provided drivers with an average of eight to 10 minutes time savings.
- The weekday southbound HOT lane provided drivers with an average of seven to eight minutes time savings.

Collisions
An average of 49 collisions per month was reported on SR 167 within the HOT lanes project limits during the first three months of tolling operations. The Washington State Patrol (WSP) reports that on average 60 collisions occur on SR 167 each month within the HOT lanes project limits. In addition to the opening of the HOT lane, other factors may be responsible for the decrease in collisions, such as recent reductions in traffic volumes and the seasonal impacts of dry pavement and improved visibility.

Corridor performance
One anticipated benefit of HOT lanes was an increase in the overall efficiency of the SR 167 corridor. The results so far do not include a long enough period of time to make definitive conclusions about the overall corridor performance. However, noteworthy results exist.

- During the morning peak-hour for the first three months of operation, northbound toll customers accounted for nearly four percent of the SR 167 traffic. Toll customers accounted for three percent of the afternoon peak-hour commuters.
- Transit and carpool vehicles continue to operate at free-flow speeds greater than 90 percent of the time.
- Wilbur Smith and Associates began an evaluation of the corridor performance. This work is expected to be completed in fall 2008.

Customer use
During the first three months of HOT lane operations, toll-paying customer usage increased. The table below shows weekday and peak-hour tolled trips by direction for the three months of tolling operations.

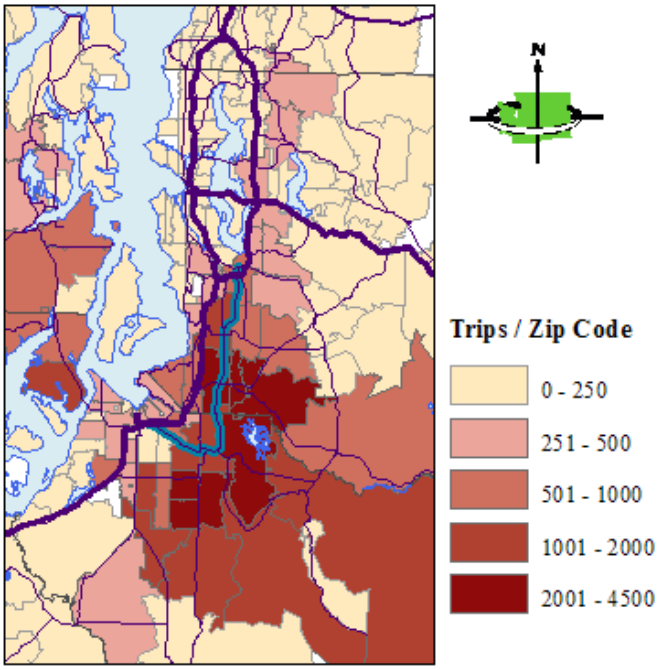
Average number of toll trips	May	June	July
Daily	1050	1080	1210
Daily northbound	580	590	680
Daily southbound	470	490	570
Northbound peak hour	140	140	160
Southbound peak hour	100	100	120

Number of trips per customer

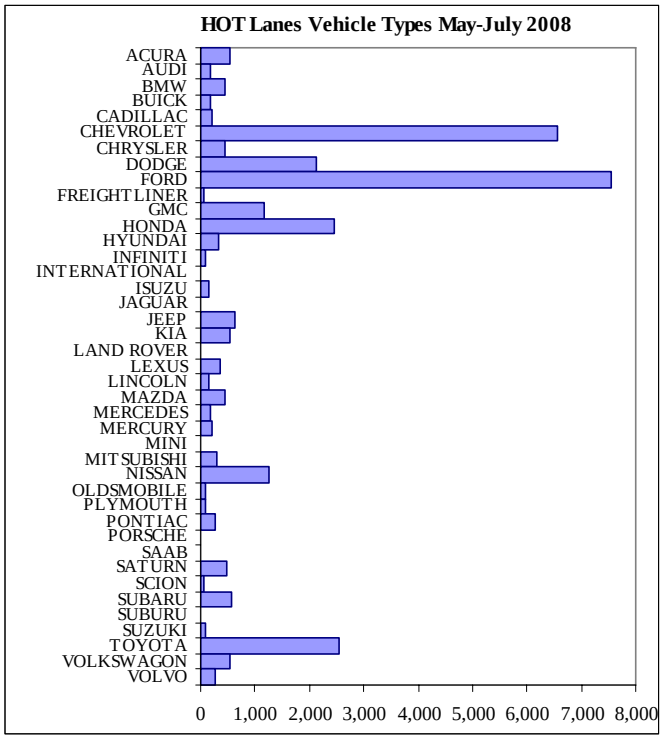
- More than 3,800 customer accounts have used the lanes more than three times.
- More than 6,000 customer accounts have used the lane one or two times.
- In a recent survey of HOT lane users, 67 percent stated they would likely pay to use the HOT lane again.

Infrequent use by a broad population suggests that many drivers are benefiting from the choice of a reliable and congestion-free commute. As mentioned above, traffic volumes on SR 167 are lower than last year, which improved the relative condition in the general purpose lanes.

Customers by location
The map below contains the number of trips taken by toll-paying drivers from each zip code. These results could be skewed by the tolling requirements and marketing for the new Narrows Bridge in Tacoma, where all vehicles must pay a toll to cross the bridge eastbound and electronic tolling is popular. Of note is the majority of trips to the east and southeast of SR 167.



Makes of customer cars



A common criticism of HOT lanes is that they favor wealthy drivers, who can more easily afford to pay a toll. Throughout the country, in fact, HOT lanes often are called "*Lexus lanes*." Studies from other HOT lanes facilities show support from customers representing all income groups. While the make of car doesn't always represent a driver's income, the chart above examined the number of trips taken by each vehicle make. In the first three months of operation, Ford was the most common make of vehicle that paying customers drove in the HOT lane. Chevrolet was second, followed by Toyota, Dodge and Honda as the third, forth and fifth most common. Drivers of Lexus and other luxury vehicles paid to drive in the HOT lanes on only a few occasions.

***Good to Go!*™**

The *Good to Go!* program is providing all customer services related to transponder accounts. New *Good to Go!* accounts continue to be opened at a rate of about 500 per week. The number of monthly customer inquires relating to HOT lanes has decreased.

The following table contains information regarding both SR 167 and the new Narrows Bridge, as the accounts, shields and transponders are interoperable between the two facilities.

	May 2008	June 2008	July 2008
New accounts opened	2,060	1,851	2,175
Transponders purchased	5,832	5,607	5,641
Transponder shields purchased	4,576	2,537	2,429
HOT lane related calls	1,182	350	118

Revenue

The average monthly revenue for the first three months of HOT lane operations was $25,000. The revenue in May was $20,000; June was $30,000; and July was $24,000. Engineers expect these revenue oscillations to continue throughout the ramp-up phase as we complete final system testing, drivers become increasingly comfortable with tolling operations and regular commuting patterns resume in fall 2008.

HERO

The HERO program was included as an element of the HOT lanes project to provide drivers an opportunity to report incorrect use of the HOT lanes; just as the HERO program is used for HOV lanes.

During May the HERO program received 104 reports of violations in the SR 167 HOT lanes. In June the number of reports decreased to 71 before dropping even further in July to 27. During the same three-month period in 2007, the HERO program received an average of 338 HOV violation reports for SR 167.

Transit Performance

Sound Transit records indicate that travel times for buses within the corridor, during peak and non-peak periods, have not changed significantly when comparing the same months in 2007 and 2008. Ridership on Sound Transit's service (routes 564 and 565), however, has increased over 25 percent, from 2,800 to 3,600 average weekday boardings over the same time period.

While other factors are likely contributing to the increase in ridership, the only service change precipitated solely by the HOT lanes has been the slight modification of two routes (564 and 565). Transit officials fine-tuned the route alignments so that buses enter SR 167 at SR 516 instead of 84th Avenue. This adjustment allows the buses to take better advantage of the HOT lanes' ingress and egress locations.

Enforcement

As part of the SR 167 HOT Lanes Pilot Project, Washington State Patrol (WSP) is providing additional enforcement on SR 167. This emphasis is paid for with HOT lanes operations funding.

Since opening day, WSP has maintained a visible presence in the project corridor. Troopers logged 550 hours in May, 364 hours in June and 223 hours in July specifically emphasizing the enforcement of HOT lane. This effort has resulted in nearly 1,500 traffic stops, yielding 263 citations for HOV / HOT violations and 150 citations for crossing the double white line that separates the HOT lanes from the GP lanes. An increase in HOT emphasis patrols is planned for fall 2008 to correspond with the anticipated increase in traffic volumes.

WSP's presence also has increased the number of incidents reported to WSDOT's incident response team (IRT). During the three months prior to opening, troopers reported 113 incidents. During the first three months of operation, the reported incidents rose to 176, an increase of 56 percent.

Incident response

An important component of the HOT lanes operations is additional IRT vehicles along SR 167 to help address and clear traffic-blocking vehicles. During the three months prior to HOT lanes opening, IRT responded to 385 incidents along SR 167. During the first three months of operation, IRT responded to 684 incidents along SR 167, an increase of 78 percent.

Another measure of effectiveness was the reduction in average response time from three minutes to two minutes. Related to the response times were the number of incidents that the IRT drivers independently discovered while roving the corridor: 498 during the first three months of operation compared to 268 during the previous three months, an increase of 86 percent.

Citizen correspondence

The HOT lanes project team witnessed a steady decline in public comments, receiving and responding to 341 in May, 103 in June and 21 in July. The five most frequently received comments were:

1. HOV's/motorcycles/transit should not have to use the access points to enter and exit the HOT lanes.
2. HOT lanes access zones are too short, inconvenient, or poorly located.
3. HOT lanes are a bad idea, an extra tax or do not help congestion.
4. Can I cross the double white lines to avoid a collision in the HOT lanes or let an emergency vehicles pass?
5. Please post real-time HOT lane toll rates on your Web site.

An on-line survey was sent to all drivers with a *Good To Go!* account that had been used on the SR 167 HOT lanes. The survey, sent on Aug. 1, 2008, revealed that over half of those surveyed were satisfied with the HOT lanes. Over two-thirds of the respondents indicated that they will use the lanes again. Specific comments included:

- "It is wonderful! Saves time and stress."
- "If you don't get out when you should, you miss your exit!"
- "Please extend this to all of our freeways!"
- "How do I use the HOV lane with a second passenger and NOT get charged?"

The survey results reinforced comments received in early May, confirming the need for changes to the current lane configuration. One example is the lengthening of the northbound entry/exit location just south of 15th Street NW to provide better access to drivers.

Construction

The civil construction component of HOT lanes reached the substantial-completion milestone on May 31, 2008. The construction office is moving forward with the project closeout process.

Project cost

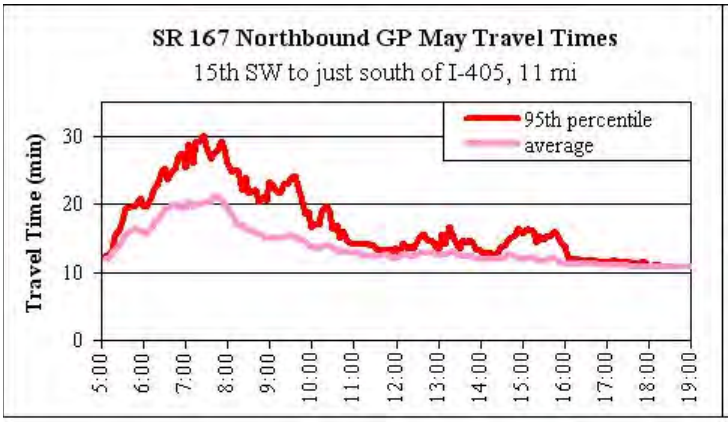
Project funding was provided for a total of $17.8 million. The final estimated cost of completion for HOT lanes is $18.7 million. The increase in cost was the result of civil-construction traffic control expenditures that were higher than expected.

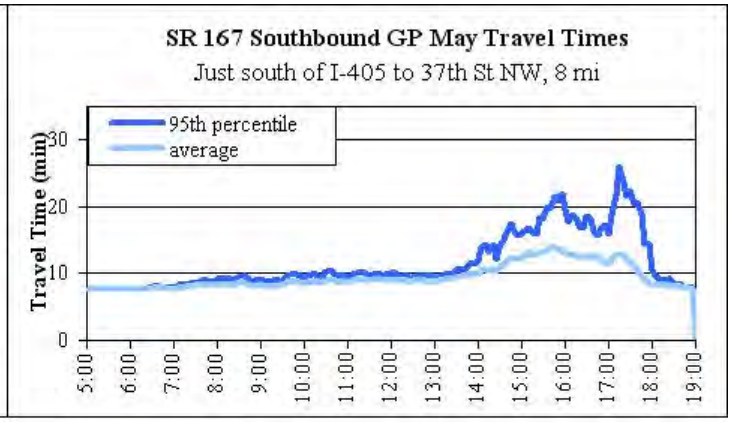
Planned system changes

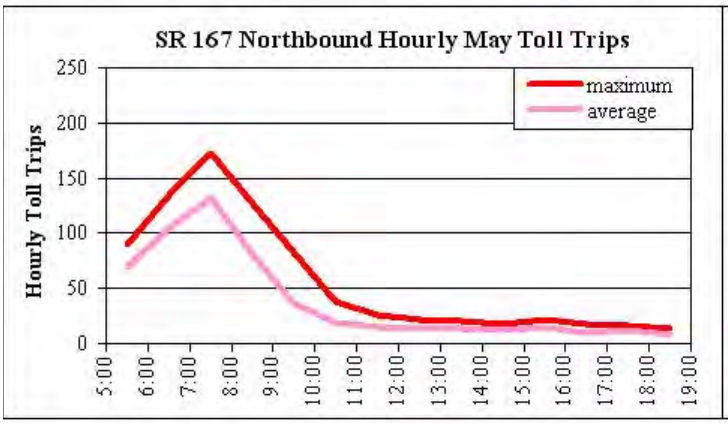
Drivers have complained about how they are now restricted to enter and exit the HOT lane. The previous design permitted access to the HOV lane at any point. The HOT lane redesign restricted access into and out of the lanes at six northbound and four southbound locations. To address some of the complaints, additional signs were added to alert drivers of the upcoming exits. Additionally, the northbound access location south of 15th Street NW will be increased in size to accommodate drivers entering at SR 18. Work is scheduled for fall 2008.

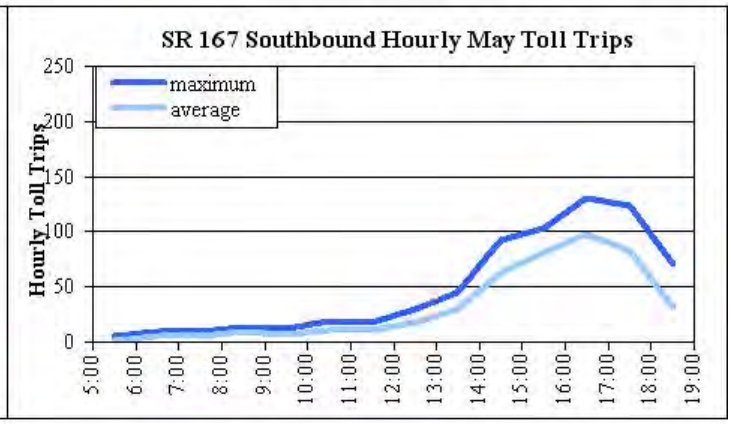
Supplemental Information
Below are travel time, usage and toll rate charts for Tuesday through Thursday during the first three months of operation.

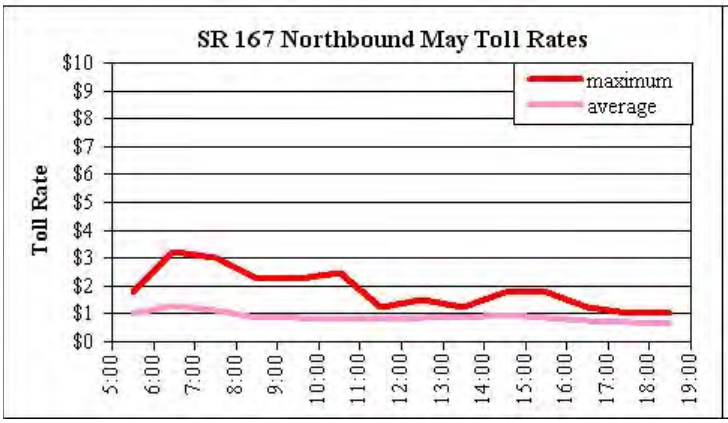
May 2008:

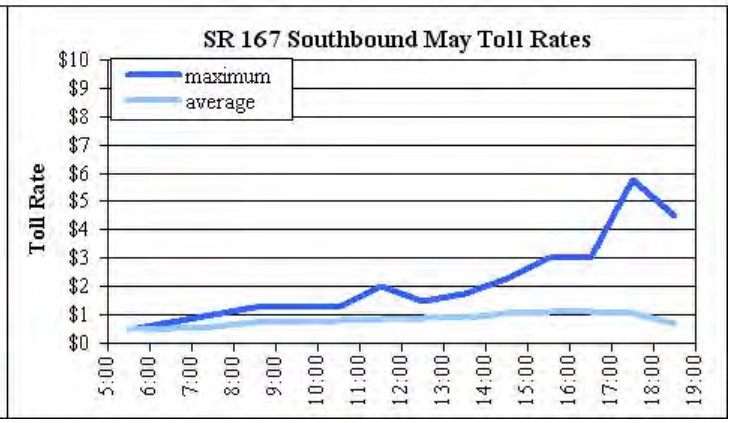




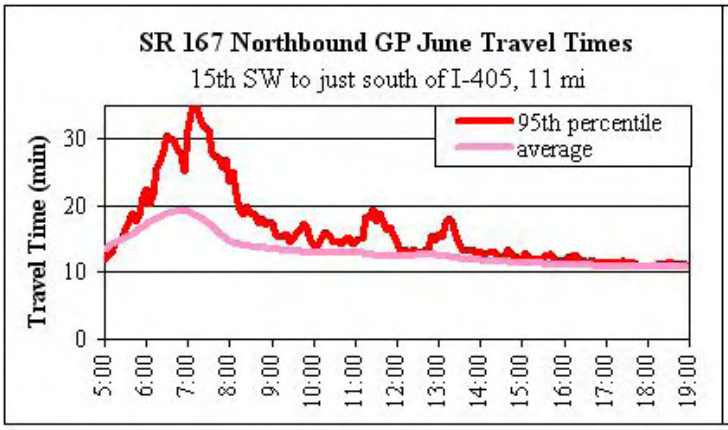








June 2008:


SR 167 Northbound GP June Travel Times
15th SW to just south of I-405, 11 mi
95th percentile
average
Travel Time (min)
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10
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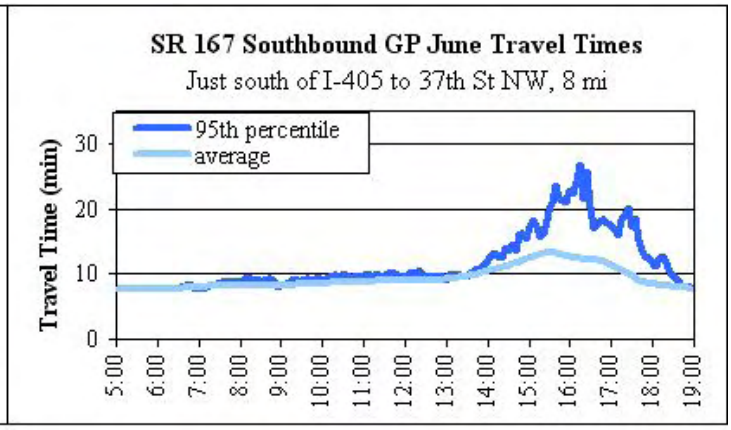
SR 167 Southbound GP June Travel Times
Just south of I-405 to 37th St NW, 8 mi
95th percentile
average
Travel Time (min)
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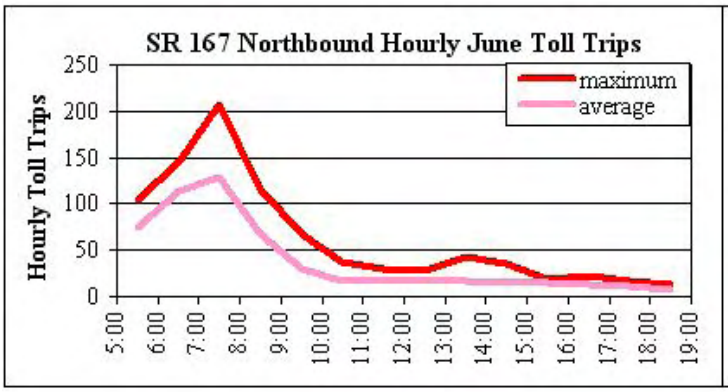
SR 167 Northbound Hourly June Toll Trips
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Hourly Toll Trips
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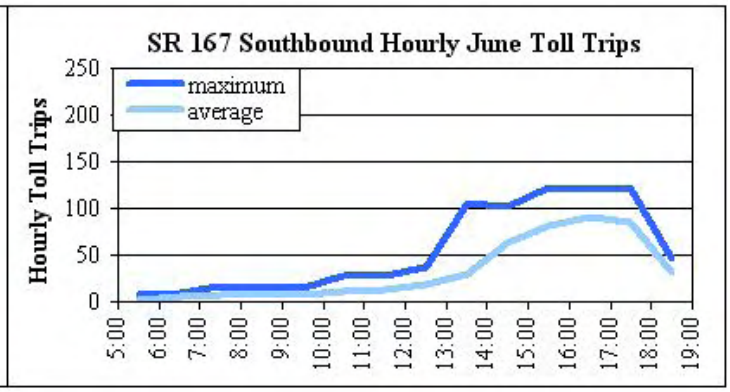
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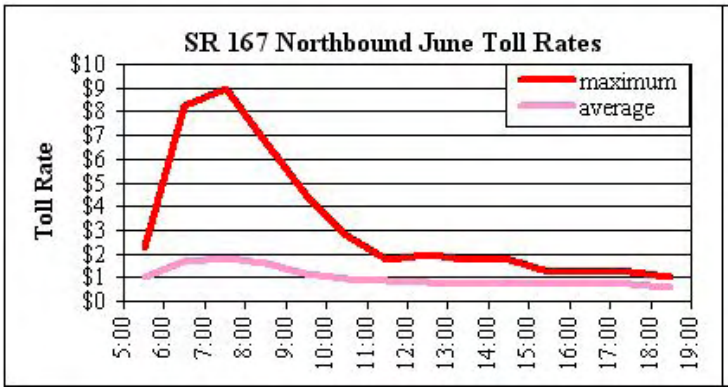
SR 167 Northbound June Toll Rates
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average
Toll Rate
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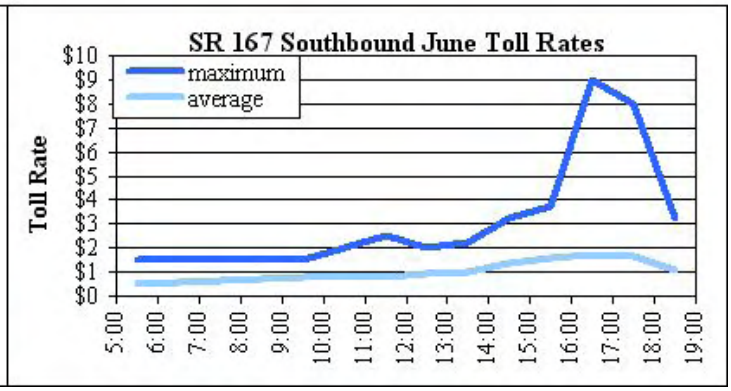
SR 167 Southbound June Toll Rates
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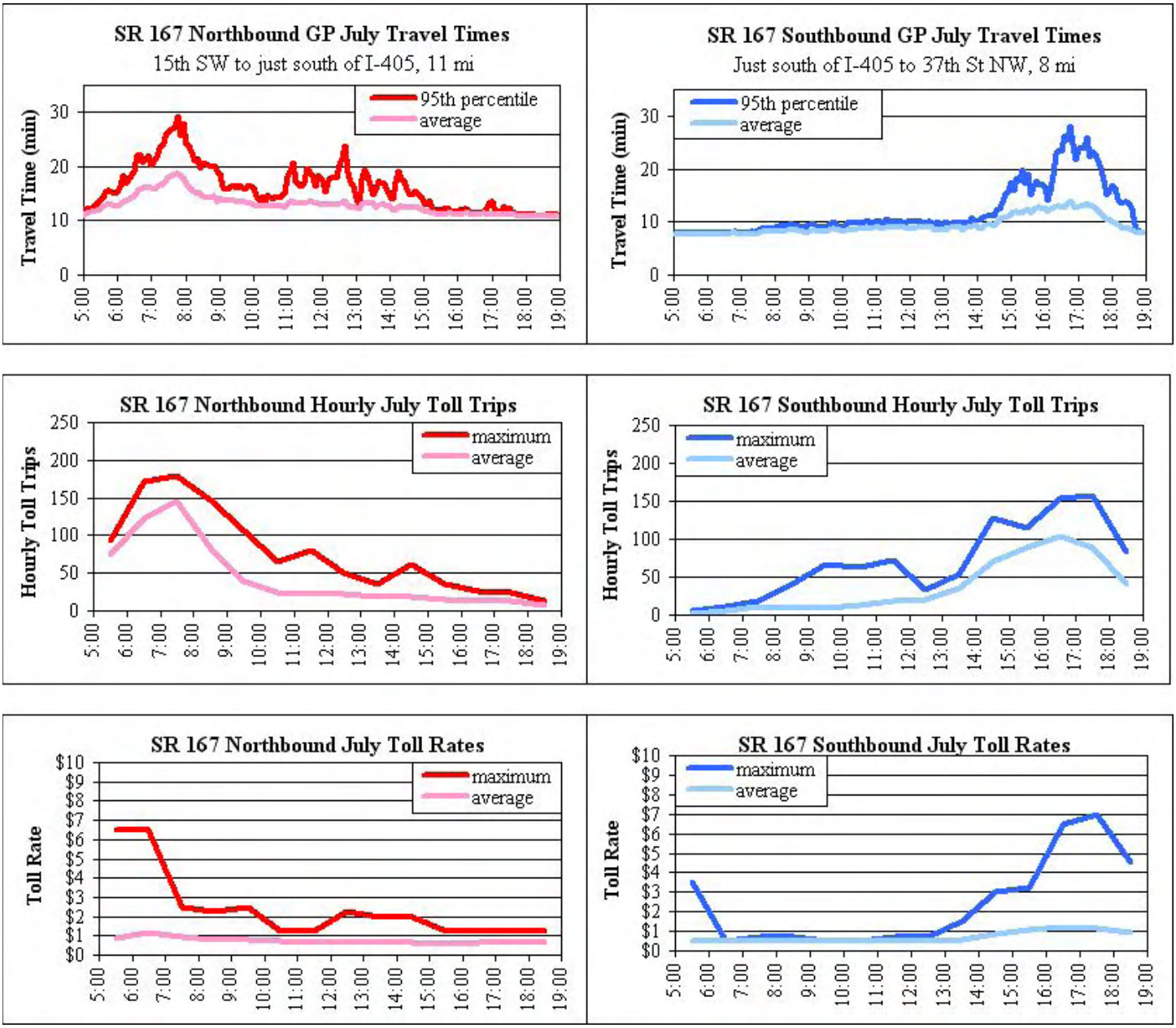
July 2008:



Note: The highest toll in July, $9.00, occurred on Saturday, July 12th.