



**Washington State
Department of Transportation**

Construction Traffic Mitigation Demand Management 2009

Public Transportation Division

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2009 Construction Traffic Mitigation Demand Management

Throughout 2009, construction on I-405, including the NE 8th Street to SR 520 Braided Ramps Project in Bellevue and Renton Stage 2 Widening & SR 515 Interchange Project was visible to drivers with narrowed lanes and reduced shoulders. Besides these ongoing I-405 construction projects, the I-90 floating bridge repair project required around-the-clock lane closures in May and July. Traffic engineers predicted the combination of these projects would severely affect traffic throughout the region.

Avoiding the lane closures on the I-90 floating bridge in May and July required travel on I-405 to the north and south of I-90, forcing many travelers through the ongoing construction on I-405 in Bellevue and Renton. To keep people and goods moving, WSDOT's construction mitigation program approached the 2009 construction season in two ways:

- Implemented strategies to reduce trips on I-405 and surrounding highways throughout 2009 construction.
- Leveraged existing carpool and vanpool programs and reached out through existing employer networks to reduce trips during the intense I-90 construction in May and July.

WSDOT's Public Transportation Division worked with project teams and local agencies to design a plan to help keep people and goods moving during construction by:

- Building on established commute trip reduction baseline services and activities
- Coordinating and minimizing traffic impacts through construction methods and scheduling
- Developing trip reduction targets
- Leveraging WSDOT's and other partners' resources
- Measuring performance and documenting lessons learned about transportation demand management (TDM) implementation for future construction projects

Implementation of the resulting TDM plan helped keep traffic moving while crews continued I-405 construction and completed the I-90 floating bridge repairs.

Investment Strategy	Total Cost	Vehicle trip reduction daily round trips		Implementation Timeline	Total one-way vehicle trips reduced during project	Average daily cost per one-way trip reduced
		Target	Actual			
I-405 Construction TDM						
Outreach to downtown Bellevue employers	\$74,845	170	82	3/2009 - 12/2009 ¹	34,167	~\$2.2
Outreach to south King County employers	\$40,000	135	10	3/2009 - 12/2009 ¹	4,167	~\$9.6
SUBTOTAL	\$114,845	305	92	-	38,334	\$3.0 ⁴
I-90 Construction TDM						
Produce employer network outreach materials	\$3,258	-	124	5/2009 - 7/2009 ²	15,500	~\$0.2
Incentives for vanpooling	\$18,171	200	43	5/2009 - 7/2009 ⁵	5,375	~\$3.4
Incentives for carpooling	\$44,296	2,000	-	5/2009 - 7/2009 ³	-	-
SUBTOTAL	\$65,725	2,200	167	-	20,875	\$3.1 ⁴
Ongoing TDM Program						
Vanpool program	-	-	-	-	-	-
Commute trip reduction (I-405)	-	-	1,286	3/2009 - 12/2009	535,833	-
Commute trip reduction (I-90)	-	-	3,901	3/2009 - 12/2009	1,625,417	-
SUBTOTAL	-	-	5,187	-	2,161,250	-
TOTAL		-	5,446	-	2,220,459	-

¹ Outreach to downtown Bellevue employers and south King County employers included FlexPass sales. FlexPasses are valid for one year so the benefits of the program extend beyond the contract. Daily cost is based on the contract period ending December 2009. Historically the retention of FlexPass programs by employers is high.

² Outreach materials produced for employer networks included FlexPass sales. FlexPasses are valid for one year so the benefits of the program extend beyond the contract. Daily cost is based on the contract period ending July 2009. Outreach was implemented from between April 2009 and July 2009 due to the major I-90 construction. Historically the retention of FlexPass programs by employers is high.

³ Actual trips based on the incentives for carpooling could not be measured because of limited resources and compressed timeline.

⁴ Average cost per trip for activities directly funded for construction mitigation.

⁵ Benefits continued because of vanpool retention.

The goal was to reduce 2,200 daily vehicle round trips through TDM projects implemented to support I-405 and I-90 construction traffic mitigation. A total of 259 daily round trips were reduced by the implemented programs. Furthermore, ongoing statewide CTR programs reduced an additional 5,187 daily round trips on the I-405 and I-90 corridors, totaling 5,446 trips removed.

Estimating Construction Traffic Impacts

To estimate construction traffic impacts, WSDOT reviewed the 2009 construction plans for the I-405 Corridor Program and the I-90 floating bridge repair project with King County; King County Metro Transit; and the cities of Bellevue, Issaquah, Mercer Island, Renton, Tukwila, Kent and Seattle.

I-405 construction traffic analysis

Traffic analysis of I-405 before construction showed the NE 8th Street to SR 520 Braided Ramps Project in Bellevue and the Renton Stage 2 Widening & SR 515 Interchange Project would affect traffic because they had narrowed lanes, reduced shoulders and caused visual distractions. These projects were ongoing throughout 2009 and were under construction at the same time as the I-90 floating bridge repair project in May and July.

I-90 construction traffic analysis

The I-90 floating bridge repair schedule and its potential effects on traffic were available only a few weeks prior to construction. The pre-construction configuration of I-90 included three mainline lanes in each direction with two reversible express lanes that are open for westbound peak traffic in the morning (6 – 9 a.m.) and eastbound peak traffic in the evening (3 – 7 p.m.), for a total of five lanes available for the peak direction of travel. Traffic counts showed about 133,000 vehicles used the I-90 floating bridge on an average weekday.

The I-90 floating bridge repairs were scheduled in two phases. During phase one construction in May 2009, the express lanes were closed and traffic was shifted to the mainline. Engineers predicted the 12-minute travel times across the bridge would double or triple with reduced capacity in the peak direction (westbound 6 – 9 a.m., eastbound 3 – 7 p.m.).

Phase two in July was expected to have a much greater effect on traffic with delays of one hour or more. All westbound I-90 traffic was funneled through an access point into the two express lanes around the clock while crews repaired that part of the bridge. This limited westbound a.m. travel to just two of the typical five lanes. Eastbound in the p.m. was limited to three of the typical five lanes as it had been during the May work. Engineers determined during phase two at least 40 percent of peak period drivers needed to eliminate, divert or change their time of travel to keep traffic moving and minimize delay. Many of those drivers were expected to avoid the I-90 floating bridge altogether and divert to I-405 where other construction activities were ongoing.

WSDOT felt the increased travel times were acceptable because:

- The project was limited in duration.
- Demand was expected to decrease as discretionary travelers made adjustments over the short duration (shopping closer to home, delaying recreational activities/appointments or changing the time they traveled).
- Public messaging would encourage drivers to consider their options such as altering their travel plans, using alternate routes like I-405, using more efficient modes such as vanpooling or carpooling, changing their time of travel, taking a vacation or working from home.
- Programs were going to be available to encourage drivers to carpool, vanpool, telework or flex work schedules.

Selecting Mitigation Projects

WSDOT's construction mitigation program developed demand management projects to keep people and goods moving during the I-405 construction and the I-90 floating bridge repair projects with these strategies in mind:

- Consider broad and targeted programs: The 2009 construction season had TDM projects throughout the year on I-405 and during the intense I-90 construction in May and July.
- Build upon baseline commute trip reduction services: The 2009 construction mitigation TDM projects were possible due to established baseline CTR services.
- Target alternate routes and cumulative impacts: During the I-90 construction, reducing trips on surrounding highways like I-405 where travelers were expected to divert could help support efforts to keep traffic moving throughout the region.
- Determine which projects could be implemented with little lead time: We had a very short timeline to develop and implement TDM projects in time for the I-90 construction. We worked with project partners to assess TDM activities and determine which ones made sense to implement.
- Build on the momentum of proven construction mitigation programs: To prepare for 2009, we selectively continued effective 2008 I-405 TDM mitigation projects. It made sense to continue these projects because they were effective at reducing trips on I-405. It was also easier to continue projects than to stop and start them because of the lead time and startup costs
- Leverage and bolster existing employer networks and partners' outreach activities: Using existing employer networks, trip reduction and public outreach programs, we were able to communicate the *Know Before You Go* construction message and encourage commuters to leave earlier, ride a bike, carpool or vanpool, telework or flex their schedules.
- Consider what worked in the past: We reviewed what worked with project partners to assess which past construction mitigation programs would be most effective given the specific construction impacts and the characteristics of the surrounding areas.

Mitigation strategies

Investment strategy	Target market	Timing	Why this strategy?	Anticipated outcome
Outreach to employers to offer FlexPasses and other incentives to encourage more efficient commuting to employees	Outreach to downtown Bellevue employers to target commuters on I-405	Outreach projects were implemented for the entire 2009 construction season, and were continued from the 2008 construction season.	The popular FlexPass program offers transit benefits to commuters. Data shows incentives can help attract new businesses to provide the passes and that those who join continue the program even after the incentives diminish. With FlexPasses, commuters incorporate non-SOV modes into their routine workday, reducing trips during rush hours.	Reduce 170 daily workday roundtrips by working with employers to encourage employees (commuters) to bus, carpool, vanpool, bike or walk to work.
	Outreach to south King County employers to target commuters on I-405 and SR 167			Reduce 135 daily workday roundtrips by working with employers to encourage employees (commuters) to bus, carpool, vanpool, bike or walk to work.
Produce and disseminate outreach materials to existing employer networks	Commuters throughout King County	Project targeted intense I-90 bridge construction. Materials produced and disseminated April through July.	Using existing employer networks Metro produced and disseminated materials making it easier to reach commuters about the I-90 construction and make them aware of travel options. Providing this information gave them more reason to try an option other than driving alone.	Reduce the number of daily workday roundtrips through outreach and education.
Promote and offer carpool incentives	Commuters on I-90 and I-405	Project targeted to intense I-90 bridge construction. Incentives promoted May and July 2009.	Research shows that commuters in east King County are receptive to the idea of carpooling, and traffic data indicates that there are a lot of empty seats in vehicles on the I-405 corridor. Also, CTR data showed that many I-405 commuters had common origins and destinations in numbers significant enough to support carpools.	Reduce trips by offering incentives to commuters that joined a carpool.
Promote and offer vanpool incentives	Commuters on I-90 and I-405	Project targeted to intense I-90 bridge construction. Incentives promoted May and July 2009.	This was a proven program that could be implemented to meet the tight timeline of the construction.	Reduce 200 daily workday roundtrips by offering reduced prices for new vanpools and vanshares that formed.

Establishing Mitigation Targets

Trip reduction targets

Trip reduction targets were set in early 2009 for the I-405 corridor TDM projects by factoring in King County's 6 percent unemployment rate and performance measurements of the same programs in 2008.

Trip reduction targets were set for the I-90 bridge repair project knowing that the construction mitigation efforts would need to:

- Divert at least 40 percent of drivers to keep people and goods moving in the region.
- Be in place for only a few months while the bridge was being repaired.

Lessons learned

1. Global issues, such as the recession, can affect TDM strategies

During 2009, bus, carpool and vanpool growth flattened due to the recession. Transit agencies reported fewer bus riders, vanpools and carpools due to layoffs and reductions in employer-provided fare subsidies. Additionally, agencies felt the pinch of less-than-expected tax revenues and associated budget cuts. Demands for the bus, vanpools and carpools are expected to rebound when our economy recovers, gas prices increase and/or traffic congestion grows.

2. Changes in products can affect measuring performance

We continue to learn and understand the affects of new technology on measuring performance. During 2009, Puget Sound area transit providers, including King County Metro, replaced FlexPass fare payment system with a new system, the One Regional Card for All — or ORCA. This entailed converting all transit fare pass products to new products.

ORCA is different (with different costs associated with it) than the former FlexPass because it includes access to six transit agencies rather than two (King County and Sound Transit), and 100 percent subsidy of vanpool fares. The transition period from FlexPass to ORCA required extensive effort and outreach by King County Metro to explain and sell ORCA to both new and existing customers. ORCA's technology to account for fares and transfers is different than it was for FlexPass. This made it difficult to measure performance during 2009 as employers transitioned from FlexPass to ORCA's program technology. We expect measuring performance with ORCA technology to become easier for future projects once the transition of technology is complete which should be in 2011.

3. Coordinate with region project engineers early

We must continue engaging with engineers earlier in the planning process for projects that have large scale construction traffic impacts, such as the I-90 bridge repair project. In late 2008, WSDOT compiled information for all of its 2009 highway construction projects in the Central Puget Sound region. Project offices coordinated construction schedules to resolve conflicts. More detailed traffic analysis was done once the construction season began, but the timing limited the mitigation program's ability to respond to the needs of the construction projects.

We've improved estimating construction traffic impacts by working with project teams from the state, county and cities earlier in the process by gathering more detailed project information and conducting some basic traffic analysis. For example, we worked with project engineers from WSDOT and local jurisdictions to assess 2010 construction traffic impacts and develop construction hot spots maps and charts with estimated construction closures to help WSDOT mitigate traffic impacts through a combination of scheduling, construction methods and trip reduction programs. We are doing the same for 2011 and beyond.

4. A TDM master agreement would give us more flexibility

Developing TDM agreements with other agencies can take months. WSDOT is in the process of developing a TDM master agreement with King County Metro. This will make WSDOT more nimble by having Metro contracted to implement TDM projects when the need arises. We could develop task orders in a matter of days to implement TDM projects instead of the months it takes to develop, review and obtain signatures for a standard agreement.

Performance measurement

The objectives of the 2009 broad I-405 and targeted I-90 construction mitigation demand management investments were to reduce vehicle trips during construction projects. Performance measurements showed that the 2009 I-405 TDM program provided benefits during construction as it did during 2008.

Assessing Effects of Strategies

Employer outreach in Bellevue and south King County

As a part of the broad construction TDM program, we contracted with King County Metro to continue the 2008 I-405 employer outreach project through 2009. Metro conducted employer outreach in Bellevue and south King County, offering FlexPasses and other incentives to encourage more efficient commuting among employees.

Results

Bellevue and South King County outreach reduced a combined total of 92 single occupant vehicle daily roundtrips.

Produce employer outreach materials for I-90 bridge construction

Between April through July, Metro produced and disseminated outreach materials to employers about the I-90 construction and promoted carpooling, vanpooling, teleworking, riding the bus and bicycling. Metro worked with existing employer networks, transportation management associations, South King County Transportation Network, WSDOT communications and other resources to disseminate the materials.

Results

We estimate that 124 daily vehicle round trips were removed. A trip reduction target was not set for this project. The trip reductions were calculated by taking the difference in mode share (data provided by Metro) and multiplying it by the number of FlexPasses issued between April and July.

Lessons learned

5. Leverage existing resources

Leveraging existing resources saves time and money. In addition to the ongoing, broader I-405 construction mitigation outreach in Bellevue and South King County, Metro used existing transportation networks to reach thousands of commuters, their employers and bus riders about the 2009 construction activities, including the I-90 bridge construction. Existing networks such as employer networks, transportation management associations (TMAs) and the South King County Transportation Network can help WSDOT target transportation information to communities affected by construction projects. Outreach targeted to affected groups with focused messaging can be effective and relatively inexpensive.

Promote vanpool for I-90 bridge construction

WSDOT contracted with King County Metro to promote and offer reduced costs for up to 40 new vanpools within east King County/I-405 during the I-90 bridge repair project to reduce congestion on I-90 and the I-405 corridor. Promoting vanpooling and offering incentives also worked well during the I-405 Bellevue and Renton Stage 1 Widening projects.

Traffic analysis showed that a significant number of vehicles would divert from I-90 to I-405 to avoid the bridge repair project. To attract new vanpools and help keep traffic moving, we strategically marketed reduced vanpooling rates at the same time as the bridge closures. Data shows that once a vanpool forms, it can last up to three years.

Results

During the summer construction, seven vanpools with 50 new riders formed. This was less than the target of 40 new vanpools. This was likely due to the recession and people's inability or unwillingness to commit to vanpool schedules. Transit agencies throughout Washington report that vanpools were struggling to maintain minimum occupancy due to layoffs and reduced employer-provided vanpool fare subsidies. The biggest vanpool (12 riders) formed in this program traveled between Renton and Everett, about 80 miles round trip.

Lessons learned

6. Global issues, such as the recession, can affect TDM strategies

Due to the recession, fewer people were working and commuting. We believe this is another reason fewer vanpools formed.

Promote carpooling for I-90 bridge construction

WSDOT contracted with King County Metro to promote carpooling by offering a \$20 gift card to the first 3,000 new members of RideshareOnline.com who joined or established a carpool.

Traffic analysis showed that a significant number of vehicles would divert from I-90 to I-405 to avoid the bridge repair project. To attract new carpoolers and help keep traffic moving, Metro strategically marketed incentives to new members of RideshareOnline.com who formed carpools.

Results

During the construction project, there were 1,807 new RideshareOnline.com members. A trip reduction target was not set for this project. At that time, there wasn't a tracking system in place, nor was there another feasible method to track performance. This made measurement difficult and likely expensive.

Lessons learned

7. Continue to improve traveler information and rideshare matching systems

The next generation of traveler information systems will integrate traffic information, travel options and rideshare matching. These systems will allow more targeted marketing, incentives and messages for travelers on specific corridors. In addition, the systems can be used to measure performance. A new generation of RideshareOnline.com launched February 2010, and further enhancements are under way.

Commute Trip Reduction

Washington State's Commute Trip Reduction (CTR) Law was adopted by the 1991 Legislature and incorporated into the Washington Clean Air Act as RCW 70.94.521-551. The intent of the CTR program is to improve air quality, reduce traffic congestion and reduce the consumption of petroleum fuels by working with major employers to encourage employees to commute without driving alone. Employers with 100 or more full-time employees at a single worksite who begin their workday between 6 a.m. and 9 a.m. must develop a program to reduce their employees' drive-alone trips. CTR benefits such as transit fare subsidies, flexible work schedules, telework opportunities and more are offered by employers. Worksites may or may not be required to participate in the CTR program based on their changing number of employees.

Results

To estimate the number of vehicle trips removed through WSDOT's ongoing CTR program, we compared general drive-alone rates¹ for areas affected by construction (which includes both CTR and non-CTR worksites) to CTR worksites within the area. This is a conservative estimate, since the general drive-alone rates include CTR² and non-CTR worksites².

I-405 Corridor Construction:

We estimate an additional 1,286 daily vehicle roundtrips were removed on average at CTR worksites during I-405 project construction in 2009.

I-90 Bridge Construction:

We estimate an additional 3,901 daily vehicle roundtrips were removed on average at CTR worksites west (Seattle) and east (Mercer Island/Bellevue) of the I-90 Bridge during the bridge repair project.

¹Source: PSRC 2006 Household Travel Survey drive-alone rate for work trips for east or south King County and trips into downtown Seattle. This rate includes CTR and non-CTR worksites.

²WSDOT Commute Trip Reduction Program

Appendix

Outreach to Bellevue employers

King County Metro provided data on the number of FlexPasses issued through the outreach efforts and on the alternate mode share of FlexPass sites and non-FlexPass sites within the area. The difference between the mode share of FlexPass and non-FlexPass sites is attributed to the introduction of a FlexPass program. The trip reductions are calculated by taking the difference in mode share and multiplying it by the number of FlexPasses issued.

FlexPass Sales and Mode Shares Data provided by King County Metro	
FlexPasses Issued	325
Alternate Mode Share for FlexPass Sites	32.0%
Alternate Mode Share for Non-FlexPass Sites	6.8%

WSDOT Analysis	
Daily Round Trips Reduced by FlexPass Sales	
$\left(\left(\text{Mode Share for FlexPass Sites} \right) - \left(\text{Mode Share for Non - FlexPass Sites} \right) \right) * \left(\begin{matrix} \# \text{ of FlexPasses} \\ \text{Issued} \end{matrix} \right)$	
$= ((32.0\%) - (6.8\%)) * (325) =$	
82	

Outreach to South King County employers

King County Metro provided data on the number of FlexPasses issued through the outreach efforts and on the alternate mode share of FlexPass sites and non-FlexPass sites within the area. The difference between the mode share of FlexPass and non-FlexPass sites is attributed to the introduction of a FlexPass program. The trip reductions are calculated by taking the difference in mode share and multiplying it by the number of FlexPasses issued.

FlexPass Sales and Mode Shares Data provided by King County Metro	
FlexPasses Issued	403
Alternate Mode Share for FlexPass Sites	5.5%
Alternate Mode Share for Non-FlexPass Sites	3.0%

WSDOT Analysis	
Daily Round Trips Reduced by FlexPass Sales	
$\left(\left(\text{Mode Share for FlexPass Sites} \right) - \left(\text{Mode Share for Non - FlexPass Sites} \right) \right) * \left(\begin{matrix} \# \text{ of FlexPasses} \\ \text{Issued} \end{matrix} \right)$	
$= ((5.5\%) - (3.0\%)) * (403) =$	
10	

Produce outreach materials for I-90 bridge construction

King County Metro provided data on the number of FlexPasses issued during the production and dissemination of the I-90 outreach materials between April and July. Metro also provided data on the alternate mode share of FlexPass sites and non-FlexPass sites within the area. The difference between the mode share of FlexPass and non-FlexPass sites is attributed to the introduction of a FlexPass program. The trip reductions are calculated by taking the difference in mode share and multiplying it by the number of FlexPasses issued.

The area targeted through this outreach included seven neighborhoods with differing characteristics that affect their mode shares. Metro provided data for the seven individual neighborhoods. The table below shows data for outreach to the Belltown neighborhood, which was one of the seven neighborhoods targeted through outreach to existing employers.

Example calculation for trips reduced in Belltown

FlexPass Sales and Mode Shares	
Data provided by King County Metro	
FlexPasses Issued	213
Alternate Mode Share for FlexPass Sites	42.5%
Alternate Mode Share for Non-FlexPass Sites	37.6%

WSDOT Analysis
Daily Round Trips Reduced by FlexPass Sales
$\left(\left(\begin{matrix} \text{Mode Share for} \\ \text{FlexPass Sites} \end{matrix} \right) - \left(\begin{matrix} \text{Mode Share for} \\ \text{Non - FlexPass Sites} \end{matrix} \right) \right) * \left(\begin{matrix} \# \text{ of FlexPasses} \\ \text{Issued} \end{matrix} \right)$
$= ((42.5\%) - (37.6\%)) * (213) = 10$

The methodology used in the Belltown example above was applied to each of the neighborhoods.

Commuter Trip Reduction

To estimate the number of vehicle trips removed through WSDOT's ongoing CTR program, we compared general drive-alone rates for areas affected by construction (which includes both CTR and non-CTR worksites) to the CTR worksites within the area. This provides a conservative estimate since the general drive-alone rates include CTR and non-CTR worksites.

I-405 Corridor Construction

To estimate the vehicle trips removed for the I-405 construction, we took the difference between the east King County drive alone rate (includes both CTR and non-CTR worksites) and the drive-alone rate for CTR sites in Bellevue and Renton and multiplied it by the number of employees at the Bellevue and Renton CTR sites. To ensure consistency, we compared the same worksites from before (as baseline) and during construction.

I-405 CTR Worksites*					
		Number of Employees	Drive Alone Rate	Drive Alone Round Trips	((General East King Cty Drive Alone Rate) - (CTR Site Drive Alone Rate)) * Number of Employees
I-405 CTR Worksites present in both 2007 and 2009	2007	50,078	73.5%	36,807	1,753
	2009	49,814	70.9%	35,318	3,039
	Change from 2007 to 2009				1,286

General Eastside Drive Alone Rate** 77.0%

The data in the shaded cells was provided by the Commuter Trip Reduction program.

*CTR Database: ~2 miles on either side of I-405 from 208th St. in Bothell to 118th Ave. SE in Bellevue. ~2 miles on either side of I-405, SR-518, and I-5. For I-405/SR-518 from Newcastle on I-405 to Sea-Tac airport on SR-518; for I-5 from I-5/I-405 Interchange to SR-516

**Source: PSRC 2006 Household Travel Survey drive alone rate for work trips for east or south King County and trips into downtown Seattle. This rate includes CTR and non-CTR worksites.

I-90 Corridor Construction

To estimate the vehicle trips removed in the I-90 corridor, we calculated it in two parts to account for the different drive-alone rates in west King County and east King County. The first calculation shows the Seattle area, where we took the difference between the west King County drive alone rate and the drive-alone rate for CTR sites in Seattle and multiplied it by the number of employees at the Seattle CTR sites. To ensure consistency, we compared the same worksites from before (as baseline) and during construction.

Seattle Area*					
		Number of Employees	Drive Alone Rate	Drive Alone Round Trips	((General West King Cty Drive Alone Rate) - (CTR Site Drive Alone Rate)) * Number of Employees
Westside Secondary Broader CTR Worksites present in both 2007/2008 and 2009/2010	2007/2008	72,054	35.9%	25,867	3,026
	2009/2010	73,923	31.8%	23,508	6,136
	Change from 2007/2008 to 2009/2010				3,110

General Westside Drive Alone Rate** 40.1%

The data in the shaded cells was provided by the Commute Trip Reduction program.

*CTR Database: East and west King County boundary consist of areas in Seattle, Bellevue and Mercer Island along the I-90 corridor

**Source: PSRC 2006 Household Travel Survey drive alone rate for work trips for east or south King County and trips into downtown Seattle. This rate includes CTR and non-CTR worksites.

The second calculation shows the Bellevue and Mercer Island area where we took the difference between the east King County drive alone rate and the drive alone rate for CTR sites in Bellevue and Mercer Island and multiplied it by the number of employees at the Bellevue and Mercer Island CTR sites. To ensure consistency, we compared the same worksites before (as baseline) and during construction.

Bellevue and Mercer Island Area*					
		Number of Employees	Drive Alone Rate	Drive Alone Round Trips	((General East King Cty Drive Alone Rate) - (CTR Site Drive Alone Rate)) * Number of Employees
Secondary Broader CTR Worksites present in both 2007/2008 and 2009/2010	2007/2008	14,379	60.8%	8,738	2,329
	2009/2010	15,524	56.9%	8,833	3,120
	Change from 2007/2008 to 2009/2010				791

General Eastside Drive Alone Rate** 77.0%

The data in the shaded cells was provided by the Commute Trip Reduction program.

*CTR Database: East and west King County boundary consist of areas in Seattle, Bellevue and Mercer Island along the I-90 corridor

**Source: PSRC 2006 Household Travel Survey drive alone rate for work trips for east or south King County and trips into downtown Seattle. This rate includes CTR and non-CTR worksites.

The commute trip reduction calculation for the east and west King County boundary is the sum of the commute trips reduced in the I-90 corridor for Seattle, Bellevue and Mercer Island.

I-90 Seattle, Bellevue and Mercer Island*	
Seattle Area	3,110
Bellevue and Mercer Island Area	791
Total daily round trips reduced =	3,901