February 2, 2004

TO: Recipients of Brightwater Final EIS

FM: Environmental Planning, Wastewater Treatment Division

RE: Addendum No. 1 to Brightwater Final EIS

The King County Wastewater Treatment Division has issued an addendum to the Final Environmental Impact Statement (EIS) for the Brightwater Regional Wastewater Treatment System. A copy of Addendum No. 1 is attached for your review. Please note that consistent with the State Environmental Policy Act (WAC 197-11-625), King County is sending the addendum to recipients of the Final EIS. However, King County did not circulate a draft addendum, and there is no comment period for the addendum.

Addendum No. 1 provides the following:

- An updated analysis of traffic impacts and mitigation measures using alternative assumptions related to background traffic growth rates for the eastern portion of the project area

- Additional information about potential improvements to and use of the existing barge dock at the Chevron Richmond Beach Asphalt Terminal for transporting materials and spoils during construction of the conveyance pipeline and the marine outfall at Point Wells

As other addenda are prepared, you will receive copies. If you have questions, please contact the Brightwater Project Team at (206) 684-6799, toll-free 1-888-707-8571, or 711 TTY.

Attachment

KING COUNTY DEPARTMENT OF NATURAL RESOURCES
Brightwater Regional Wastewater Treatment System
Addendum No. 1 to Brightwater Environmental Impact Statement

On November 19, 2003, King County issued a Final Environmental Impact Statement ("Brightwater EIS") analyzing the probable significant adverse environmental impacts of alternative combinations and configurations of facilities that would constitute the proposed Brightwater Regional Wastewater Treatment System ("Brightwater"). King County and other jurisdictions will take actions on the proposal in coming months after considering the information and analysis in the Brightwater EIS. Under the State Environmental Policy Act ("SEPA"), issuance of an Addendum is appropriate to provide additional information or analysis that does not substantially change the analysis of significant impacts and alternatives in an existing environmental document (WAC 197-11-600[4][c], -706). Since issuance of the Brightwater EIS, additional information has become available in the two areas set forth below, which may assist regulatory agencies, provide useful information to other agencies and the public, and does not substantially change the analysis of significant impacts and alternatives in the EIS.

On December 1, 2003, King County Executive Ron Sims identified the locations of proposed Brightwater facilities and authorized King County staff to proceed to work with host jurisdictions and regulatory agencies to secure permits and commence construction and operation of Brightwater facilities. The planning and analysis associated with the pre-design of proposed Brightwater facilities has continued, following issuance of the Brightwater EIS, as part of the ongoing project implementation and permit application processes. Included as part of that overall work are two areas of environmental analysis that add information to the Brightwater EIS and are appropriately included in this Addendum No. 1.

Updated Traffic Analysis. The Brightwater Final EIS addressed transportation impacts at Chapter 16 and in Appendix No. 16-B. Since the EIS was issued, King County has reviewed additional information related to projected background traffic growth rates in the project area. In order to ensure a complete evaluation of both background traffic and the impact of Brightwater construction and operation, King County prepared the attached evaluation using alternative assumptions relating to background traffic growth rates. The attached analysis contains an updated assessment of traffic impacts and mitigation measures, which does not substantially change the overall evaluation of significant impacts of the proposal. It also does not change King County's mitigation commitments set forth in the EIS. The additional traffic analysis is set forth at Attachment A, and included as part of this Addendum. The technical backup documentation to this traffic analysis is incorporated by reference, and can be reviewed at King County Wastewater Treatment Division, King Street Center, 201 South Jackson, Seattle. To arrange for review of this documentation, please contact (206) 684-6799, toll-free 1-888-707-8571, or 711 TTY.

Environmental Impacts and Possible Mitigation Measures Associated With Portal No. 19 Construction. The Brightwater EIS identified at page 16-76 of the Final EIS that one of the many possible mitigation options associated with construction of Portal No. 19 would be the possible use of a construction barge hauling facility at the existing Chevron Richmond Beach Asphalt Terminal dock ("Chevron dock"), as one alternative to transporting construction materials and spoils by truck on roadways in the area. The potential use of the construction barge and related improvements to the Chevron dock is one of many possible mitigation measures described in the Brightwater EIS to address transportation impacts of portal construction. The use of barges as a mitigation measure also is identified in the EIS at Chapter 16, including pp. 16-53, 16-54, 16-76, and 16-81. Potential use of a construction barge hauling facility at the Chevron dock is not included as part of the Brightwater proposal outlined in the EIS. If King County at any time in the future determines to use a construction barge hauling facility at the Chevron dock to assist in construction of Portal No. 19, a determination of whether additional environmental review is required by SEPA would be made and applicable local, state and federal permits and approvals would be secured by King County. Any such proposal would be subject to and mitigated by applicable regulations and laws, including state regulations associated with issuance of a Washington State Department of Ecology Section 401 certification, Section 402 NPDES permit, and a Washington State Hydraulic Project Approval permit.

Following issuance of the Brightwater EIS, work was completed in conjunction with a draft Biological Assessment for the Brightwater Treatment System, which included additional environmental analysis associated with the potential Chevron dock barge proposal and associated improvements to the existing dock at the Chevron Richmond Beach Asphalt Terminal adjacent to the Point Wells Portal No. 19 site. The possible impacts of use of a barge are already addressed in the Brightwater Draft EIS at pp. 3-4, 3-21, 3-29, 3-63, 3-78, 3-79, 3-80, 3-103, 3-112, 3-122, 3-134, 3-135, 4-32, 5-36, 5-38, 6-23, 6-25, 6-47, 6-48, 7-60, 7-89, 7-90, 7-120, 7-121, 10-13, 10-18, 10-19, 10-21, 11-53, 12-11, 14-11, 14-12, 14-24, 16-48, 16-49, 16-52, 16-56, and 16-58 and in the FEIS at pp. 1-41, 3-7, 16-76, 16-92, 16-103, and 16-127. King County has not determined at this point whether or not this potential mitigation measure will be utilized as the Brightwater permitting and decision-making process goes forward. The additional environmental information relating to the impacts of a construction barge hauling facility at the Chevron dock set forth in the January 5, 2004, draft Biological Assessment for the Brightwater System is incorporated herein in its entirety. Specific references to the use of a construction barge at the Chevron dock and associated improvements to the Chevron dock can be found at the following pages: 3-37, 3-39, pp. 3-43 to 3-45, 3-50, 5-7, 6-12, 6-17, 6-19, 6-21, 6-24, 6-26, 6-53, 6-54, and 7-5. Copies of the Biological Assessment can be inspected at King County Wastewater Treatment Division, King Street Center, 201 South Jackson, Seattle. To arrange for a review of the Biological Assessment, please contact (206) 684-6799, toll-free 1-888-707-8571, or 711 TTY.

Dated January 27, 2004.

Don Theiler
King County Department of Natural Resources
SEPA Responsible Official

Comparison of FEIS and Alternate Background Traffic Growth Rates in Chapter 16, Transportation

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DATE: January 27, 2004

Introduction

This addendum discusses the effect of using alternative assumptions about background traffic growth to those used in the Brightwater Regional Wastewater Treatment System Final Environmental Impact Statement (Brightwater FEIS or FEIS). Both the FEIS and this alternative analysis represent a "worst case" construction period scenario because neither the planned improvements to SR-9 were assumed to be complete nor was an alternate construction access point assumed to be in place. WSDOT plans to complete the SR-9 Improvement project by January 2007. If completed on schedule, the roadway improvements would materially reduce construction related traffic impacts. An alternate project access point at the SR-9/SR-522 Westbound Ramps intersection would also reduce construction trips and traffic congestion on SR-9 north of SR-522.

The background traffic growth factor for the FEIS analysis was derived using the Puget Sound Regional Council (PSRC) model. Roadways west of I-5 and along the conveyance corridors was found to average 1 percent. A background traffic growth rate of 1% was also used for the Route 9 site study area, consistent with historical traffic volumes based upon traffic counts around the Route 9 site.

The Washington State Department of Transportation (WSDOT) completed an update to its previous traffic study for their SR-9 Improvement project in August 2003 that used a background traffic growth rate of 4 percent. The updated traffic study was not made public and distributed until November 2003, within one week of the release of the Brightwater FEIS. This rate is higher than the traffic growth assumed in the Brightwater FEIS analysis, historical traffic volume trends in the project vicinity, and the previous WSDOT traffic study. Therefore, to address the differences in assumptions between these two studies, an additional analysis was performed to evaluate the Brightwater impacts with an alternate background traffic growth rates.

This alternative analysis results in somewhat lower background traffic growth rates on roadways west of I-5 than was used in the FEIS. It produces almost identical growth rates on roadways serving Primary Portals 7, 11 and 44. In the vicinity of the Route 9 site,

itresults in a somewhat higher background growth rate to that used in the FEIS. The alternate rates happened to closely align with the updated WSDOT traffic growth rate up to Year 2010 for the Route 9 site area. Only those areas where somewhat higher overall background traffic growth resulted from the alternate method than was assumed in the Brightwater FEIS were re-analyzed using the higher growth rate.

Findings

For the re-analysis, the alternative methodology used to calculate background traffic growth rates utilizes four Puget Sound Regional Council (PSRC) model forecast years. Growth rates were derived for three time periods, resulting in the use of three different rates, versus the single 1 percent annual rate used for the entire study period assumed in the FEIS. The results showed that, generally, a higher rate of growth is forecasted in the initial years, and a lower rate is forecast for the later years.

Throughout the majority of the study area, the increased growth in the initial years using the alternate methodology was minimal, and the new methodology produced very similar traffic growth rates to those used in the FEIS. However, the eastern portion of the study area, surrounding the Route 9 site and Primary Portals 14, 33, 39 and 41, was characterized by somewhat higher background traffic growth. In order to evaluate an alternative assumption for growth rates, the traffic analysis for roadway segments and intersections immediately surrounding the Route 9 site and the specified portals was conducted. This analysis using an alternative growth rate results in more congested conditions for the "no action alternative" than presented in the FEIS. Increased delays resulted when Brightwater construction-related traffic was added for 2007 Construction conditions.

When Brightwater project related construction traffic is added to the higher background traffic volumes derived by the alternate methodology, the overall conclusions and mitigation presented in the Brightwater FEIS do not change, with the exception of the SR-9/SR-522 Westbound Ramps intersection. To ensure to the extent feasible that the traffic levels at this one intersection remain the same as the No Action level, mitigation is proposed by King County in the form of acceleration of the signal installation. WSDOT has already planned to signalize this intersection as part of the SR-9 Improvement project.

Other than this one exception, the conclusions regarding potential impacts and the proposed mitigation for the project would not change for the following reasons.

- The traffic impacts and mitigation were based on the effects that the project related traffic would have on the transportation system. The project related trips generally comprise only a small portion of the total traffic, and the relative effects remain the same with both of the background traffic growth assumptions.
- Based upon the analysis using higher growth rates, the recommended mitigation measures identified in the FEIS would not be different. In many instances, the mitigation measures already in the FEIS are sufficient and provide more mitigation than needed to mitigate the impacts identified in the FEIS. King County is committed to all of the mitigation measures stated in the FEIS, as needed and feasible.
- Using the mitigation and the Transportation Management Plan strategies as identified in the FEIS, Brightwater construction traffic will be mitigated at Route 9 to result in no

greater delay than exists under a No Action condition. This is attainable under the analysis in this study, using the mitigation strategies identified in the FEIS, as noted above. At one location an additional mitigation measure, not identified in the FEIS is required. King County commits to work with WSDOT to accelerate the timing of that one signalized intersection.

Additionally, the issue of traffic growth rates would not affect the Snohomish County concurrency analysis presented in Appendix 16-A of the FEIS, as the analysis was based on actual development data provided by the County rather than forecasted traffic volumes from the PSRC.

Background Traffic Growth Rates

The background traffic growth rate used for the Brightwater FEIS traffic impact analysis was 1 percent per year, from existing conditions through the year 2040. The rate was derived by using the PSRC model for two different forecast years, then computing the average annual growth rate by taking the total percent growth and dividing by the number of years. Traffic forecast modeling experts employed by CH2M HILL utilized the PSRC EMME-2 model to plot the highway network and list the computed annual growth rate for each roadway in the Brightwater project area. The results of that plot indicated that the annual growth rates averaged approximately 1 percent per year.

WSDOT historical traffic counts on SR-9, for the years 1993 through 2002, confirmed the FEIS traffic growth rate assumptions were consistent with historical trends. The counts showed the historical traffic growth rate on SR-9 to be an average of 1.1 percent per year. During the public comment period for the Brightwater Draft EIS, WSDOT did not take issue with the appropriateness of the 1 percent traffic growth rate.

To account for major potential and/or concurrent developments, an additional analysis was conducted in the FEIS. Cumulative analyses accounted for concurrent development trips by adding those trips to the background traffic volumes, i.e. the SR-9 improvements and the Costco Warehouse projects.

After the Brightwater FEIS traffic analysis was completed, WSDOT completed an updated traffic analysis for the SR-9 Improvement project. The WSDOT analysis included a near term background traffic growth projection of nearly 4 percent, also based on a PSRC traffic forecast model.

Although the FEIS traffic growth rate methodology was derived by the PSRC model output and validated with historical traffic data, an alternative methodology was tested and is set forth below to verify the Brightwater FEIS analysis, impacts and mitigation recommendations. The alternative methodology produced a traffic growth rate similar to the recent WSDOT study in the vicinity of the Route 9 Treatment Plant site. The alternate methodology assumed a varied traffic growth rate for different time periods. Four PSRC model years, 1998, 2010, 2020 and 2030 were used to derive growth rates for three time periods.

The alternative traffic growth rates calculated from the PSRC model for the three study area regions are shown below in Table 1**.** When comparing rates for different periods, the initial

period (1998 to 2010) represents the highest growth, while the other two periods show a much lower traffic growth rate.

TABLE 1
Average Annual Traffic Growth Rate by PSRC Time Period and Study Area Region

Study Area Region	FEIS	PSRC (EMME-2 Model) Time Period		
		1998 to 2010	2010 to 2020	2020 to 2030
Unocal Site; Portals 3, 5, 19 and 26	1.0%	1.1%	0.5%	0.7%
Portals 7, 11 and 44	1.0%	1.2%	0.5%	1.1%
Route 9 Site; Portals 14, 33, 39 and 41	1.0%	4.0%	1.9%	0.9%

Note: The 2020 to 2030 annual rate was projected to continue to 2040 for the Final EIS.

Over the entire study period, use of the FEIS rate slightly overstates estimated traffic volumes on the roadways west of I-5 as compared to the alternative analysis. The FEIS and alternative analysis of traffic growth rates produce nearly identical estimates of traffic volumes on the area roadways serving Primary Portals 7, 11 and 44. However, under this alternative analysis, the eastern portion of the study area has projected overall higher background growth than assumed in the FEIS. Thus, based upon these results the traffic analysis for only the eastern region of the study area were re-analyzed using the alternative traffic growth rate.[1]

The separate analysis contained in Appendix 16-A, Transportation Concurrency: Route 9 Plant Site, formally identified and referenced in Chapter 16 of the FEIS on p. 16-2, computes the traffic volumes for the Route 9 site using the Snohomish County method for concurrency analysis (pp. 16-61 to 16-62). The concurrency method uses traffic data from permitted developments and adds that data to existing traffic counts. When using this method, background traffic growth is already factored in so this discussion is not relevant to that analysis. Therefore, the concurrency analysis in the FEIS was not re-evaluated.

Traffic Analysis

The following sections restate the LOS results of the FEIS roadway segments and intersections that are affected by the alternative growth rate methodology. They then show the revised analysis that depicts the project impacts that would occur assuming the alternative higher traffic growth rate.

The mitigation measures presented in Chapter 16 of the FEIS remain applicable to the following analysis. These measures are not reiterated, but are contained in their entirety in Chapter 16 of the Brightwater FEIS as follows:

- SR-9 Mitigation – pp. 16-65 and 66
- Route 9 Site/195th Street Alternative – Table 16-33 on p. 16-65

[1] For analysis and supporting background data for intersections and roadways please see Chapter 16 of the Brightwater FEIS and the Alternate Background Traffic Growth, which are incorporated herein by this reference.

- Route 9 Site/228th Street Alternative – Table 16-34 on p. 16-65
- Primary Portals along the 195th Street Corridor – Table 16-42 on p. 16-75
- Primary Portals along the 228th Street Corridor – Table 16-48 on p. 16-82
- Primary Portals along the Unocal Corridor – Table 16-64 on p. 16-101

Roadway Segment Analysis

Table 2 presents the results of the traffic analysis for roadway segments in the area of the Route 9 site and Primary Portals 14, 33, 39, and 41 that were characterized by the alternate traffic growth rate of 4 percent from the PSRC time period 1998 to 2010.

TABLE 2
2007 and 2010 PM Peak Hour - Roadway Segment LOS for FEIS and Alternative Background Traffic Growth Rates

Route/Segment	2007 No Action	2007[b] Construction	2010 No Action	2010 Operation (36 mgd)
FEIS Background Growth Rate (1%)				
NE 195th Street, east of Interstate 405	E	E	E	E
228th Street SE, west of SR-9	C	C	C	C
228th Street SE, east of SR-527	B	B	B	B
SR-9, north of SR-522[a]	F	F	F	F
Alternate Background Growth Rate (4%)				
NE 195th Street, east of Interstate 405	E	E	E	E
228th Street SE, west of SR-9	C	C	C	C
228th Street SE, east of SR-527	B	B	B	B
SR-9, north of SR-522[a]	F	F	F	F

[a] Does not assume WSDOT SR-9 widening project improvements are in place.
[b] Does not assume concurrent construction of the treatment plant with SR-9 road improvements and Costco.

After adding peak construction and operations traffic to the higher baseline, all roadway segments are characterized by the same LOS as forecasted for the FEIS. No additional mitigation is required along roadway segments with the higher traffic growth rates.

Cumulative Roadway Segment Analysis

The analysis indicated that all levels of service would remain the same as shown in Table 2, for the cumulative condition of concurrent construction of the Route 9 plant, the SR-9 improvement project, and the Costco warehouse development.

With the SR-9 improvements completed, the SR-9 roadway segment would operate at LOS C under both the FEIS 1 percent growth assumption and the alternative 4 percent growth rate.

Intersection Analysis

Tables 3 and 4 present the results of the traffic analysis for intersections surrounding the Route 9 site, using both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent. Table 3 represents conditions for the treatment plant study intersections assuming the 195th Street conveyance alignment and Table 4 represents the 228th Street alignment.

TABLE 3

2007 and 2010 PM Peak Hour - Route 9 Site, 195th Street Corridor Intersection LOS and Delay for FEIS and Alternative Background Traffic Growth Rates

Intersection	2007 No Action		2007 Construction[c]		2010 No Action		2010 Operation (36 mgd)	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
Route 9 Site, 195th Street Corridor—FEIS Background Growth Rate (1%)								
SR-9 at 228th Street SE[b]	D	43	F	90	D	44	D	42
SR-9 at SR-522 EB Ramps[b]	D	48	E	58	D	53	D	48
SR-9 at SR-522 Westbound Ramps[b] (Unsignalized)	C	21	C	24	C	22	C	22
SR-9 at SR-524[b]	E	80	E	73	F	88	E	78
Route 9 Site, 195th Street Corridor—Alternate Background Growth Rate (4%)								
SR-9 at 228th Street SE[b]	D	52	F	99	E	68	E	60
SR-9 at SR-522 EB Ramps[b]	E	74	F	84	F	101	F	91
SR-9 at SR-522 Westbound Ramps[b] (Unsignalized)	D	30	E	36	E	44	E	39
SR-9 at SR-524[b]	F	125	F	117	F	167	F	154

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.
[b] Does not assume WSDOT SR-9 widening project improvements are in place.
[c] Does not assume concurrent construction of the treatment plant with SR-9 road improvements and Costco.

TABLE 4
2007 and 2010 PM Peak Hour - Route 9 Site, 228th Street Corridor Intersection LOS and Delay for FEIS and Alternative Background Traffic Growth Rates

Intersection	2007 No Action		2007 Construction[c]		2010 No Action		2010 Operation (36 mgd)	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
Route 9 Site, 228th Street Corridor—FEIS Background Growth Rate (1%)								
SR-9 at 228th Street SE[b]	D	43	F	117	D	44	D	42
SR-9 at SR-522 EB Ramps[b]	D	48	E	62	D	53	D	48
SR-9 at SR-522 Westbound Ramps[b] (Unsignalized)	C	21	D	26	C	22	C	22
SR-9 at SR-524[b]	E	80	E	74	F	88	E	78
Route 9 Site, 228th Street Corridor—Alternate Background Growth Rate (4%)								
SR-9 at 228th Street SE[b]	D	52	F	127	E	68	E	60
SR-9 at SR-522 EB Ramps[b]	E	74	F	88	F	101	F	91
SR-9 at SR-522 Westbound Ramps[b] (Unsignalized)	D	30	E	40	E	44	E	39
SR-9 at SR-524[b]	F	125	F	118	F	167	F	154

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.
[b] Does not assume WSDOT SR-9 widening project improvements are in place.
[c] Does not assume concurrent construction of the treatment plant with SR-9 road improvements and Costco.

In the 2007 No Action condition, the SR-9/SR-522 Eastbound Ramps intersection operates at LOS E with the alternate higher traffic growth rate compared to LOS D in the FEIS. Using the mitigation tools in the FEIS in conjunction with local authorities, construction condition roadway operations can be brought back to No Action conditions.

Also in 2007 No Action, the SR-9/SR-522 Westbound Ramps intersection worsens from a LOS C to D with the alternate rate and then drops to LOS E with the Brightwater construction trips. Mitigation is proposed by King County in the form of acceleration of the signal installation for this intersection. Operations at this intersection would improve to LOS C levels with the proposed traffic signal.

All other mitigation proposed in the FEIS would still apply because the relative changes in LOS for the other intersections are similar to the FEIS.

As footnote 'b' to Tables 3 and 4 states, the 2010 No Action condition does not assume WSDOT's planned SR-9 improvements to be complete. Under this scenario, all the intersections would operate below the LOS threshold (LOS D) with the alternative traffic growth rate as compared to a range of LOS C to F in the FEIS. Because operation of the plant would generate fewer trips from the Route 9 site than under "No Action", the Brightwater project would not exacerbate this situation. However, the projected LOS E would require that potential mitigation be suggested for all of the Route 9 site study intersections. These potential mitigation measures would most likely include a signal installation at the SR-9/SR-522 Westbound Ramps intersection and signal optimization or capacity improvements at the other intersections. As shown in Table 6, operations along SR-9 would improve to LOS C or better conditions if the SR-9 improvements are completed.

Cumulative Intersection Analysis

Table 5 presents the results of the traffic analysis for intersections in the vicinity of the Route 9 site, assuming the concurrent construction of the SR-9 Improvement project, Brightwater project and Costco Warehouse operations. The WSDOT project is currently scheduled to be completed by 2007, but for this analysis peak construction traffic is assumed to occur simultaneously with the Brightwater construction in January 2007. A comparison of both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent are shown.

TABLE 5
2007 PM Peak Hour - Route 9 Site, SR-9 Improvement Construction, Brightwater Construction and Costco Operations Intersection LOS and Delay for FEIS and Alternative Background Traffic Growth Rates

Intersection	2007 No Action[e]		2007 No Action with SR-9 Roadway Construction Only[b]		2007 Cumulative 195th Corridor[b,c]		2007 Cumulative 228th Corridor[b,d]	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
FEIS Background Growth Rate (1%)								
SR-9 at 228th Street SE	D	43	D	54	F	123	F	157
SR-9 at SR-522 EB Ramps	D	48	D	48	E	59	E	61
SR-9 at SR-522 Westbound Ramps (Unsignalized)	C	21	C	21	E	40	E	46
SR-9 at SR-524	E	80	F	117	F	113	F	114
Alternate Background Growth Rate (4%)								
SR-9 at 228th Street SE	D	52	E	74	F	146	F	182
SR-9 at SR-522 EB Ramps	E	74	E	74	F	85	F	89
SR-9 at SR-522 Westbound Ramps (Unsignalized)	D	30	D	30	F	80	F	92
SR-9 at SR-524	F	125	F	174	F	169	F	169

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.
[b] Assumes roadway capacity constraint during the construction of SR-9 Improvement project.
[c] Assumes concurrent SR-9 Improvement project construction, Brightwater with 195th Street conveyance alignment and Costco operations.
[d] Assumes concurrent SR-9 Improvement project construction, Brightwater with 228th Street conveyance alignment and Costco operations.
[e] Does not include Brightwater treatment plant, SR-9 Improvement and Costco development. Roadway capacity remains as existing condition.

The results of the 2007 No Action with SR-9 roadway construction using the higher traffic growth rate show that the SR-9/228th Street SE intersection would decline from a true "No-Action" LOS D to LOS E condition. Mitigation for the proportional construction impact of Brightwater would be implemented with the WSDOT SR-9 Improvement project. During the permitting phase, King County will work with WSDOT to identify appropriate mitigation measures for improvement.

As with the FEIS analysis, the revised growth rate also shows that the SR-9/SR-522 Westbound Ramps intersection would operate at LOS F with the cumulative Brightwater,

Costco and SR-9 Improvement project trips. Potential mitigation measures for Brightwater's proportional component for this impact is included in the FEIS.

Table 6 presents the results of the traffic analysis for intersections along Route 9, assuming completion of the WSDOT SR-9 Improvement project, using both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent from the PSRC time period 1998 to 2010. Costco Warehouse operations are not included.

TABLE 6
2010 PM Peak Hour – SR-9 Improvements Completed Intersection LOS and Delay for FEIS and Alternative Background Traffic Growth Rates

Intersection	2010 No Action		2010 Operation (36 mgd)	
	LOS	Delay[a]	LOS	Delay[a]
Route 9 Site—FEIS Background Growth Rate (1%)				
SR-9 at 228th Street SE	C	21	C	21
SR-9 at SR-522 EB Ramps	C	28	C	28
SR-9 at SR-522 Westbound Ramps	B	16	B	15
SR-9 at SR-524	C	25	C	25
Route 9 Site—Alternate Background Growth Rate (4%)				
SR-9 at 228th Street SE	C	26	C	25
SR-9 at SR-522 EB Ramps	C	30	C	30
SR-9 at SR-522 Westbound Ramps	B	18	B	17
SR-9 at SR-524	C	26	C	26

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.

All intersections in Year 2010 will operate at LOS C conditions or better if the SR-9 improvements are completed.

Portal 14, Unocal Corridor

Table 7 presents the results of the traffic analysis for the Portal 14 study intersections, using both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent to calculate the impacts during the 2007 Construction.

TABLE 7
Unocal Corridor, Portal 14 Estimated 2007 Intersection Delay and LOS for FEIS and Alternative Background Traffic Growth Rates – During Construction

Intersection	No Action		Site A		Site B		Site D	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
FEIS Background Growth Rate (1%)								
I-405 NB Ramps/NE 195th Street	D	36	D	38	D	38	D	38
I-405 SB Ramps/NE 195th Street	C	24	C	25	C	25	C	25
NE 195th Street/North Creek Parkway	D	51	D	51	D	51	D	51
120th Avenue NE/ North Creek Pkwy	C	15	C	16	C	16	C	16
NE 180th Street/132nd Avenue NE	F	116	F	116	F	116	F	116
132nd Avenue NE/SR-522 WB Ramps	C	27	C	28	C	28	C	28
Alternate Background Growth Rate (4%)								
I-405 NB Ramps/NE 195th Street	D	46	D	48	D	48	D	48
I-405 SB Ramps/NE 195th Street	C	26	C	27	C	27	C	27
NE 195th Street/North Creek Parkway	E	59	E	59	E	59	E	59
120th Avenue NE/ North Creek Pkwy	C	18	C	18	C	18	C	18
NE 180th Street/132nd Avenue NE	F	211	F	211	F	211	F	211
132nd Avenue NE/SR-522 WB Ramps	C	31	C	32	C	32	C	32

[a] Average delay, measured in seconds per vehicle, includes deceleration time, stopped time, and acceleration time due to intersection controls.

All intersections are characterized by the same No Action LOS as reported in the FEIS except for the NE 195th Street/North Creek Parkway intersection (LOS D to E). During the permitting phase, King County will work with each jurisdiction to identify appropriate mitigation measures for traffic improvement, using the mitigation measures identified in the FEIS. No additional mitigation is required for the study intersections with the higher traffic growth rates.

Portal 41, Route 9-195th Street Corridor

Table 8 presents the results of the traffic analysis for the Portal 41 study intersections, using both the FEIS background growth rate of 1 percent and the alternate growth rate of 4 percent to calculate the impacts during the 2007 Construction.

TABLE 8

Portal 41, Route 9-195th Street Corridor Estimated 2007 Intersection Delay and LOS for FEIS and Alternative Background Traffic Growth Rates – During Construction [c]

Intersection	No Action		Sites A/J		Site C		Site D		Site W		Site X	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
FEIS Background Growth Rate (1%)												
I-405 NB Ramps at NE 195th Street	D	36	D	41	D	41	D	41	D	37	D	41
I-405 SB Ramps at NE 195th Street	C	24	C	25	C	25	C	25	C	26	C	25
NE 195th Street at North Creek Parkway	D	51	D	52	D	52	D	52	D	51	E	66
NE 195th Street at 120th Avenue NE	F	91	F	91	F	111	F	97	F	91	F	91
Beardslee Blvd at Ross Road	C	21	C	21	C	21	C	21	F	416	C	21
Alternate Background Growth Rate (4%)												
I-405 NB Ramps at NE 195th Street	D	46	D	53	D	53	D	53	D	48	D	53
I-405 SB Ramps at NE 195th Street	C	26	C	27	C	27	C	27	C	28	C	27
NE 195th Street at North Creek Parkway	E	59	E	62	E	62	E	62	E	59	E	76
NE 195th Street at 120th Avenue NE	F	112	F	112	F	132	F	119	F	112	F	112
Beardslee Blvd at Ross Road	C	24	C	24	C	24	C	24	F	565	C	24

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.

[b] Cumulative impacts with Microtunnel construction assumed for analysis.

[c] Cumulative impacts for Optional IPS at Portal 41 not assumed for this analysis, however the additional trips from the IPS would have little effect on these results.

All intersections are characterized by the same No Action LOS as reported in the FEIS except for the NE 195th Street/North Creek Parkway intersection (LOS D to E). During the permitting phase, King County will work with each jurisdiction to identify appropriate mitigation measures for traffic improvement, using the mitigation measures identified in the FEIS. No additional mitigation is required for the study intersections with the higher traffic growth rates.

Portal 33, Route 9-228th Street Corridor

Table 9 presents the results of the traffic analysis for the Portal 33 study intersections, using both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent to calculate the impacts during the 2007 Construction.

TABLE 9

Portal 33, Route 9-228th Street Corridor Estimated 2007 Intersection Delay and LOS for FEIS and Alternative Background Traffic Growth Rates – During Construction [c]

Intersection	No Action		Site A		Site C		Site D	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
FEIS Background Growth Rate (1%)								
I-405 NB Ramps at SR-527	D	46	D	46	D	46	D	46
I-405 SB Ramps at SR-527	C	24	C	24	C	24	C	24
228th Street SW at SR-527	E	58	E	64	E	64	E	64
228th St SW at 14th Ave W	B	16	B	18	B	18	B	18
228th St SW at Locust Way	B	12	B	12	B	12	B	12
Alternate Background Growth Rate (4%)								
I-405 NB Ramps at SR-527	E	61	E	63	E	63	E	63
I-405 SB Ramps at SR-527	C	26	C	26	C	26	C	26
228th Street SW at SR-527	E	72	E	79	E	79	E	79
228th St SW at 14th Ave W	C	21	C	21	C	21	C	21
228th St SW at Locust Way	B	13	B	13	B	13	B	13

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.

All intersections are characterized by the same No Action LOS as reported in the FEIS except for the I-405 Northbound Ramps/SR-527 (LOS D to E) and 228th Street SW/14th Avenue West (LOS B to C) intersections. During the permitting phase, King County will work with each jurisdiction to identify appropriate mitigation measures for traffic improvement, using the mitigation measures identified in the FEIS. No additional mitigation is required for the study intersections with the higher traffic growth rates.

Portal 39, Route 9-228th Street Corridor

Table 10 presents the results of the traffic analysis for the Portal 39 study intersections, using both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent to calculate the impacts during the 2007 Construction.

TABLE 10
Portal 39, Route 9-228th Street Corridor Estimated 2007 Intersection Delay and LOS for FEIS and Alternative Background Traffic Growth Rates – During Construction

Intersection	No Action		Site B		Site C		Site D	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
FEIS Background Growth Rate (1%)								
I-405 NB Ramps at SR-527	D	46	D	46	D	46	D	46
I-405 SB Ramps at SR-527	C	24	C	24	C	24	C	24
228th Street SW at SR-527	E	58	E	64	E	64	E	64
Alternate Background Growth Rate (4%)								
I-405 NB Ramps at SR-527	E	61	E	63	E	63	E	63
I-405 SB Ramps at SR-527	C	26	C	26	C	26	C	26
228th Street SW at SR-527	E	72	E	79	E	79	E	79

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.

All intersections are characterized by the same No Action LOS as reported in the FEIS except for the I-405 Northbound Ramps/SR-527 (LOS D to E) intersection. During the permitting phase, King County will work with each jurisdiction to identify appropriate mitigation measures for traffic improvement, using the mitigation measures identified in the FEIS. No additional mitigation is required for the study intersections with the higher traffic growth rates.

Portal 41, Route 9-228th Street Corridor

Table 11 presents the results of the traffic analysis for the Portal 41 study intersections, using both the FEIS background traffic growth rate of 1 percent and the alternate growth rate of 4 percent to calculate the impacts during the 2007 Construction.

TABLE 11

Portal 41, Route 9-228th Street Corridor Estimated 2007 Intersection Delay and LOS for FEIS and Alternative Background Traffic Growth Rates – During Construction [b,c]

Intersection	No Action		Sites A/J		Site C		Site D		Site W		Site X	
	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]
FEIS Background Growth Rate (1%)												
I-405 NB Ramp at NE 195th Street	D	36	D	37	D	37	D	37	D	36	D	37
I-405 SB Ramp at NE 195th Street	C	24	C	25	C	25	C	25	C	24	C	25
NE 195th Street at North Creek Parkway	D	51	D	51	D	51	D	51	D	51	E	57
NE 195th Street at 120th Avenue NE	F	91	F	91	F	99	F	92	F	91	F	91
Beardslee Blvd at Ross Road	C	21	C	21	C	21	C	21	F	114	C	21
Alternate Background Growth Rate (4%)												
I-405 NB Ramp at NE 195th Street	D	46	D	48	D	48	D	48	D	46	D	48
I-405 SB Ramp at NE 195th Street	C	26	C	27	C	27	C	27	C	27	C	27
NE 195th Street at North Creek Parkway	E	59	E	60	E	60	E	60	E	59	E	66
NE 195th Street at 120th Avenue NE	F	112	F	112	F	120	F	113	F	112	F	112
Beardslee Blvd at Ross Road	C	24	C	24	C	24	C	24	F	167	C	24

[a] Average delay, measured in seconds per vehicle (s/v), includes deceleration time, stopped time, and acceleration time due to intersection controls.

[b] Cumulative impacts with Microtunnel construction assumed for analysis.

[c] Cumulative impacts for Option IPS at Portal 41 not assumed for this analysis, however the additional trips from the IPS would have little affect on these results.

All intersections are characterized by the same No Action LOS as reported in the FEIS except for the NE 195th Street/North Creek Parkway intersection (LOS D to E). During the permitting phase, King County will work with each jurisdiction to identify appropriate mitigation measures for traffic improvement, using the mitigation measures identified in the FEIS. No additional mitigation is required for the study intersections with the higher traffic growth rates.

LOS Analysis During Operations at Portals

Intersection operations at the primary portal sites were not re-analyzed during the operation phase of the project. Brightwater primary portal operation traffic is comprised of a significantly smaller volume of traffic than the construction phase and would be limited to a few trips per day. Thus, the operational analysis would show minimal project impacts.

Conclusion

The methodology of deriving background traffic growth rates used in the FEIS was based on the approved PSRC forecast data and validated with historical traffic data. Using an alternate methodology, consistent with the methodology employed in the recent update of the WSDOT SR-9 Improvement project, results were applied to the Brightwater traffic analysis to verify project results.

The alternate methodology results in a similar background growth assumption for the majority of the study area. A higher growth rate characterized the area surrounding the Route 9 site and Primary Portals 14, 33, 39 and 41. Re-analysis of the study roadways and intersections surrounding these facilities show that the significant Brightwater project impacts, as mitigated, are similar to those documented in the FEIS.

- The SR-9 at SR-522 Westbound Ramps was the only intersection that was identified to require additional mitigation for the Brightwater project traffic utilizing the higher growth rate. The installation of a planned signal may need to be expedited by King County if the higher growth occurs.
- The SR-9/SR-522 Eastbound Ramps, NE 195th Street/North Creek Parkway and the I-405 Northbound Ramps/SR-527 intersections would operate at LOS E under the No Action conditions utilizing the alternative traffic growth rate assumptions.
- In all cases, King County will work with WSDOT and permitting agencies to identify appropriate mitigation measure for its proportional impacts using the mitigation measures identified in the FEIS.
- During the permitting process, the transportation impacts associated with construction and operation of Brightwater will be mitigated through the Transportation Management Plan developed in conjunction with applicable local, state, and federal regulatory requirements.