ATTACHMENT 1

May 2, 2008

The Honorable Julia Patterson
Chair, King County Council
Room 1200
COURTHOUSE

Dear Councilmember Patterson:

I am pleased to present the January 2008 Brightwater Cost Update Report which is the seventh in a series of annual reports to inform the King County Council and its committees about trends and conditions that may impact the cost of the Brightwater project. This report presents the lifetime cost estimate for the project as of January 2008, reviews the project's scope and accomplishments, explains the cost changes since last year, and describes remaining uncertainties that may impact the project.

The Department of Natural Resources and Parks (DNRP) and its consultants and contractors accomplished a significant amount of work on the Brightwater project in 2007:

- Completed negotiations of the Guaranteed Construction Cost with Hoffman Construction to construct the liquids facilities at the treatment plant
- Awarded contract to Kiewit-Pacific for the solids/odor control facilities
- Launched a tunnel boring machine (TBM) from North Creek to the Brightwater Treatment Plant (East Tunnel)
- Launched a TBM from Kenmore to North Creek (Central Tunnel)
- Completed mobilization and began TBM fabrication for the West Tunnel
- Awarded a contract and notice to proceed for procurement for the Influent Pump Station
- Signed a land transfer agreement with the City of Kenmore to create 26 acres of public park land
- Obtained all building permits from Snohomish county for the treatment plant site and made a mitigation payment of $17.5 million

As a result of these and other accomplishments, the Brightwater project is scheduled to become operational in early 2011. As of January 2008, the estimated lifetime cost of Brightwater is $1.8 billion. This amount represents an increase of about $34.9 million, or about two percent, over the estimate presented in January 2007.

This cost estimate reflects the award of over 98 percent of the construction work for the project. Now that the majority of construction costs are fixed, we can estimate the total cost of the Brightwater project with much greater certainty than was possible a year ago. However, the uncertainties facing the project now shift from inflation and contractor bid prices to unforeseen circumstances during construction, such as the discovery of contaminated soil or geotechnical constraints during tunneling. These and other risks carry the potential for cost increases above the original contract prices. The Department of Natural Resources and Parks has a comprehensive strategy to mitigate risks and contingencies to cover cost increases, but it is important to recognize that unexpected events could increase the time and cost of completing the work under each contract.

Please note that the report is dated January 2008, because that is the month cost numbers are locked down so that the annual wastewater budget and rate can be prepared. This process lasts until early April, which is when this report was completed. If you have any questions, please feel free to contact Christie True, Division Director of the Wastewater Treatment Division of the Department of Natural Resources and Parks, at 206-684-1236.

Thank you for your review of this annual report. I look forward to continuing to work together on this critically important project.

Sincerely,

Ron Sims
King County Executive

Enclosure

cc: King County Councilmembers
ATTN: Ross Baker, Chief of Staff
Saroja Reddy, Policy Staff Director
Anne Noris, Clerk of the Council
Frank Abe, Communications Director
Regional Water Quality Committee Members
Bob Cowan, Director, Office of Management and Budget
Theresa Jennings, Director, Department of Natural Resources and Parks (DNRP)
Christie True, Division Director, Wastewater Treatment Division, DNRP

Brightwater Cost Update

Current Conditions and Trends

January 2008

King County
Department of
Natural Resources and Parks
Wastewater Treatment Division

This information is available in alternative formats upon request by calling 206-684-1280 (voice) or Relay Service 711 (TTY).

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Executive Summary

The Brightwater Cost Update is part of an ongoing effort by the King County Department of Natural Resources and Parks (DNRP) to inform decision makers and stakeholders about trends and conditions that may impact the cost of the Brightwater project. This report describes current trends through January 2008, identifies the costs associated with these trends, and compares costs to those presented in the *January 2007 Update*. This report concludes with a discussion of the remaining uncertainties facing the Brightwater project through the end of construction and their potential affect on final project costs.

Cost Estimates to Date

To date, King County DNRP has prepared seven cost estimates for the Brightwater project, each at key points in the project's lifecycle. The first estimate was a conceptual estimate developed in 2001 as part of the Brightwater siting analysis. The second and third estimates were released in 2002 and 2003 as part of the Draft and Final Environmental Impact Statements, respectively. These two estimates were based on the current Brightwater system configuration and included preliminary design information for the treatment plant and conveyance system. The fourth estimate was presented in October 2004 at the completion of 30 percent design. This estimate was subsequently adopted by the Council as the project's baseline budget. The fifth estimate, prepared in December 2005, reflected the completion of 60 percent design for the treatment plant and 100 percent design for much of the conveyance system. The sixth cost estimate, prepared in January 2007, described the project's transition from design to construction, a change that also necessitated a shift from constant (base year) dollars to nominal (inflated) dollars as a significant portion of the project's construction costs were established by contracts that included inflation. The seventh and current cost estimate reflects the project's near complete transition to construction, with over 98 percent of the construction contracts awarded. It also includes actual costs incurred through 2007.

Current Cost Estimate

As of January 2008, the current lifetime cost estimate for the Brightwater project is $1.8 billion, which is $34.9 million, or about 2 percent, above the cost estimate presented in the *January 2007 Update*, as shown in Table 1.

Table 1
Comparison of Brightwater Cost Estimates since January 2007 (millions)[a]

Brightwater Component	Jan. 2007 Inflated	Jan. 2008 Inflated	Change Jan. 07–Jan. 08	Percent Change	January 2007 Inflated OMC Estimate
Treatment Plant	$839.8	$875.3	$35.5	4.22%	$882–$911
Conveyance	$927.5	$926.9	$(0.5)	-0.06%	$ 946–$953
Total	**$1,767.3**	**$1,802.2**	**$34.9**	**1.98%**	**$1,827–$1,862**

[a]Totals may not add due to rounding.

Table 1 also shows the range of lifetime costs estimated by R.W. Beck, the Brightwater project's independent Oversight Monitoring Consultant (OMC), following their review of the *January 2007 Update*. Note that the January 2008 estimate is below the costs estimated by the OMC, which may suggest that DNRP's estimates are less conservative. In fact, the cost estimates reflect the level of certainty available at the time of the estimate, and DNRP aggressively manages the project to meet those estimates. And while current uncertainties may result in future cost increases to the project, DNRP does not reflect the possible cost to mitigate these uncertainties in the Brightwater estimates. This practice is consistent with county policy to set the lowest reasonable wastewater monthly rate and capacity charge, and the Brightwater cost estimates have a significant impact on these charges.

Current Estimate Compared to the Baseline Budget

The October 2004 Brightwater cost estimate of $1.483 billion (2004 dollars) was used to develop the baseline budget for the Brightwater project. Table 2 shows the baseline budget forecasts in October 2004, with inflation at 3 and 5 percent per year, and the current Brightwater estimate of $1.8 billion projected with inflation; Figure 1 compares the Brightwater estimates to date against the baseline budget with 5 percent inflation.

Table 2

Brightwater Baseline Costs Compared to the January 2008 Estimate (millions)[a]

Brightwater Component	Baseline Cost (2004$)	Baseline Cost with 3% inflation	Baseline Cost with 5% inflation	January 2008 Inflated
Treatment Plant	$578.4	$639.6	$684.4	$875.3
Conveyance	$904.7	$1,020.5	$1,105.5	$926.9
Total	**$1,483.1**	**$1,660.1**	**$1,789.9**	**$1,802.2**

[a]Totals may not add due to rounding.

Figure 1

Brightwater Cost Estimates (Inflated): 2001–2008

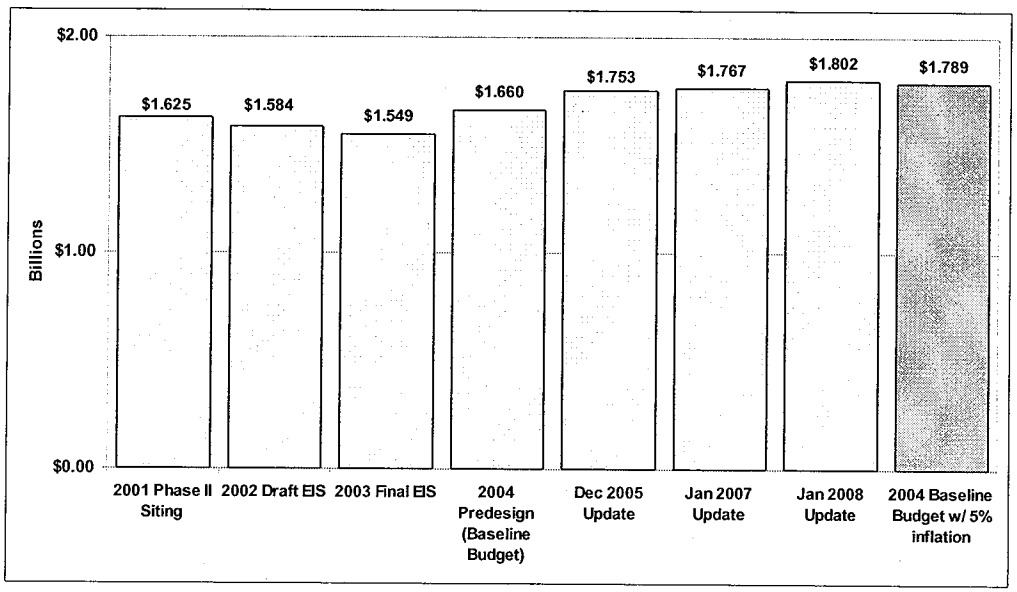

Figure 1 shows that the current cost estimate is slightly above the baseline budget forecasted in 2004 with 5 percent inflation. This is consistent with a prediction made in the October 2004 predesign cost estimate, which suggested that, given the significant increases in commodity prices at that time, an inflation assumption of 5 percent might better reflect future conditions.[1] This prediction was borne out by actual inflation experienced over the last two years in construction-related markets. A comparison of cash flows for the current cost estimate and the approved Brightwater baseline budget is provided in Appendix A.

Inflation

Inflation is an increase in the level of prices over time that results in a decrease in purchasing power compared to today's dollars. Since 2004, inflation has significantly affected projects across the country including Brightwater, adding approximately $263 million to project costs between 2004 and 2006. Overall, construction inflation has averaged 4.5 percent per year from 2004 through 2007 as measured by the Engineering News Record's Construction Cost Index (CCI). This average masks a volatile period in which annual price increases ranged from 6.3 percent in 2004 (an annual average that included double-digit increases for several commodities important to Brightwater) to 2.8 percent in 2007. Construction prices moderated in 2006 and 2007, though the effects of such volatility can extend beyond the actual inflationary episode manifested as higher contractor bids, particularly for contracting methods where contractors are bound by guaranteed construction costs.

Cost Changes since January 2007

Compared to the *January 2007 Update* there was an overall increase of about $35.5 million in treatment plant costs and an overall decrease of about $0.5 million in conveyance costs. These changes result in a net increase in Brightwater costs of about $34.9 million. Several factors contributed to the cost changes as summarized below and explained in more detail in the section titled *"Cost Changes since January 2007."*

Treatment Plant

Table 3 lists the significant cost changes for the treatment plant since January 2007. In terms of construction costs, the table shows that the results from two separate bidding processes contributed to the majority of the treatment plant cost increases over the previous year: the bids for the Solids Contract came in higher by about $11.5 million and the subcontractor bids for the Liquids Contract came in higher than estimated by about $7.8 million. These increases reflected the impacts of inflation on the local construction market as well as the very heated bidding environment created by the abundance of available construction work in the region. The increases in bid costs were accompanied by an associated increase in sales tax of $5.2 million. An additional increase of $2.2 million was attributed to costs incurred by Snohomish County Public Utility District in upgrading the substation being built to serve the Brightwater Treatment Plant.

[1] King County Department of Natural Resources and Parks. Brightwater Facilities: Addendum to August 23 Report: Brightwater Predesign Cost Estimates. October 2004. p. 20.

Table 3

Brightwater Treatment Plant Cost Changes since January 2007 (millions)[a]

Treatment Plant Element	January 2007 Inflated	January 2008 Inflated	Change Jan. 07–Jan. 08
Construction Costs			
Liquids Contract	$215.3	$223.1	$7.8
Solids Contract	154.9	166.5	11.5
Construction Contingency	38.3	33.1	(5.2)
Sales Taxes	30.2	35.4	5.2
Owner Furnished Equipment	31.2	28.5	(2.6)
Outside Agency Costs	4.6	6.8	2.2
All Other Construction Costs	56.3	57.5	1.2
Non-Construction Costs			
Engineering Services	66.2	76.5	10.2
Project Contingency	4.0	2.0	(2.0)
Credits and Revenues	(10.6)	(3.2)	7.4
All other changes	249.5	249.1	(0.4)
Total	**$839.8**	**$875.3**	**$35.5**

[a]Totals may not add due to rounding.

Non-construction costs also contributed to treatment plant increases but to a lesser degree. Engineering services needs were further refined over the first year of actual construction and resulted in a $10.2 million increase that reflected the need for additional engineering services during construction, construction management staffing, and materials testing. Finally, the amount of the anticipated revenues to be received from the sale of salvaged Stockpot company equipment was less than expected.

Conveyance System

Cost changes for the conveyance system are shown in Table 4. Construction costs were impacted primarily by higher-than-expected bids for the Influent Pump Station (IPS), with the low bid coming in about $20 million above the estimate presented in the *January 2007 Update*. This increase is largely attributable to the same inflationary pressure affecting the treatment plant bids. The increase in IPS costs was offset somewhat by a favorable bid for the Marine Outfall, which came in $4.4 million below expectations. The primary change in non-construction costs was a reduction of $12 million in project contingency, which largely offset the conveyance cost increases experienced during 2007. King County DNRP believes that the remaining project risks are sufficiently reduced at this point to justify a reduction in project contingency. The remaining project contingency combined with the available construction contingency should provide sufficient reserves to address any anticipated risks that may arise during construction.

Table 4

Brightwater Conveyance Cost Changes since January 2007 (millions)[a]

Conveyance Element	January 2007 Inflated	January 2008 Inflated	Change Jan. 07–Jan. 08
Construction Costs			
East, Central, West, Ancillary Contracts	$450.7	$455.5	$4.8
Influent Pump Station (IPS) Contract	71.5	91.5	20.0
Marine Outfall Contract	27.8	23.4	(4.4)
Construction Contingency	72.7	68.6	(4.2)
Sales Taxes	55.8	57.2	1.4
All Other Construction Costs	29.1	27.3	(1.8)
Non-Construction Costs			
Engineering/Planning & Mgmt. Services	133.1	130.7	(2.5)
Project Contingency	18.2	6.2	(12.0)
All Other Non-Construction	68.5	66.6	(1.9)
Total	**$927.5**	**$926.9**	**($0.5)**

[a]Totals may not add due to rounding.

Uncertainties Potentially Affecting Cost

During the past year, DNRP and its consultants and contractors made significant progress on the Brightwater project. One important achievement was the award of over 98 percent of the construction work for the project. Because these construction costs are now fixed, DNRP can estimate the total cost of the Brightwater project with much greater certainty than was possible a year ago. However, the uncertainties facing the project now shift from concerns about inflation and contractor bids to risks during construction, such as large change orders and claims associated with as unforeseen ground conditions and in the completion of construction at interfaces between contractors. Another area of uncertainty is the necessary level of engineering services during construction, construction management staffing, and materials testing. Staffing needs will be assessed periodically as construction progresses to ensure that there is enough engineering support and field oversight to assure proper construction and documentation.

Format for Presenting Costs

The format for presenting the Brightwater cost estimates has changed over time to reflect the maturing of the project and to better address the needs of the report's end users. Prior to 2006, Brightwater cost estimates were presented in constant dollars; that is, dollars adjusted for inflation (deflated) to the year of the estimate. With the project's transition from design to construction in 2006, the cost format shifted to nominal (inflated) dollars to account for the fact that contractors included inflation as part of their bid packages. Following issuance of the *January 2007 Update,* the Brightwater Oversight Monitoring Consultant (OMC) recommended modifications to the cost format to insure costs could be compared year to year. Consequently, DNRP proposed using the Brightwater Monthly Report format adopted by the Council in 2005, which used nominal dollars to include inflation. The costs presented in this report reflect this revised format.

Introduction

This update is part of an ongoing effort by the King County Department of Natural Resources and Parks to inform decision makers and stakeholders about the effect of current conditions and trends on the costs associated with the Brightwater project. This report is organized in five sections. This *Introduction* provides a summary of the Brightwater facilities and the effort to mitigate Brightwater impacts. It also describes what was accomplished in 2007 and highlights what we expect to accomplish in 2008. The next section, *Developing the Brightwater Cost Estimates*, reviews each of the Brightwater cost estimates to date, including a summary of the major changes between estimates. This section also describes the impact of inflation on the cost estimates, the change in format for presenting the estimates, and the recommendations of the independent Oversight Management Consultant. The detailed Brightwater cost estimates are then presented in the section titled *Brightwater Cost Estimates.* The fourth section, *Cost Changes since January 2007,* describes the factors that contributed to cost changes since last year's estimate, and the final section, *Uncertainties Potentially Affecting Cost,* identifies issues that may affect Brightwater costs in the coming year.

The Brightwater Project

The 1999 Regional Wastewater Services Plan identified the need for a 36 million gallon per day (mgd) treatment plant and associated conveyance facilities to provide wastewater capacity for the north service area by the year 2010. These facilities, currently under construction and collectively termed Brightwater, are shown on Figure 2 and summarized below.

Treatment Plant

The treatment plant site is located in unincorporated Snohomish County east of State Highway SR-9, just north of the intersection of SR-9 and SR-522 and the City of Woodinville. When the treatment plant begins its start up and commissioning process in the winter of 2010, it will have a capacity to treat 36 million gallons per day of wastewater with a peak flow capacity of 130 mgd. This facility will be designed in such manner that it can be further expanded in 2040 to continue serving the region's needs. Its capacity at that time would be 54 million gallons per day with a peak capacity of 170 mgd. The treatment plant will provide secondary treatment using aeration and membrane bioreactor (MBR) facilities, which also allow the county to provide advanced treatment for up to 21 mgd of Class A reclaimed water for irrigation and industrial use.

The plant will recycle solids using anaerobic digestion and centrifuge dewatering to generate Class B biosolids that will be used for agricultural and forestland application, and compost production. Methane gas generated during the solids handling process will be used to fuel plant process heating. The Brightwater odor control system is designed to achieve the nation's most stringent odor control standards. To achieve these standards, the plant will employ a multiple-phase treatment system involving biological and chemical treatment followed by carbon polishing.

Figure 2

Major Components of the Brightwater Project