

**BRIGHTWATER PROJECT OVERSIGHT REPORT FOR QUARTERS
 ENDING DECEMBER 31, 2009 AND MARCH 31, 2010**



CURRENT RISK RATING ◆ Corrective action is needed to address the schedule delay, risk of increased cost, and other issues described below. Four new recommendations are included.

PROJECT DESCRIPTION

The Brightwater wastewater treatment system is being constructed to meet the capacity needs outlined in the Regional Wastewater Services Plan. The new treatment plant is designed to provide 36-million gallons per day capacity with membrane bioreactor secondary treatment systems, Class B biosolids and reclaimed water production. The conveyance system includes an influent pump station and 14 miles of large diameter tunnel connecting the plant near SR522 and SR9 to a marine outfall. The Wastewater Treatment Division (WTD) is the project manager. It is currently in the construction phase with multiple contracts using GC/CM, Design-Bid-Build, Design-Build, and recently added Cost-Reimbursable Fixed-Fee delivery methods. The combined quarterly report from R.W. Beck, the Oversight Monitoring Consultant (OMC) is attached.

PROJECT STATUS ● = No Current Concerns ▼ = Attention Needed ◆ = Corrective Action Needed

● **Scope**

The scope of the final project has not changed, but WTD plans to start up the treatment plant prior to completion of the conveyance system to mitigate some of the risk of schedule delay. Plant commissioning and operation decisions will be informed by an alternatives analysis of cost, schedule, and risk implications.

◆ **Schedule**

Milestone	Approved Schedule	Current Forecast	Comment
Treatment Plant substantial completion	Jan. 2011	Feb. 2011	weather delays
Conveyance System commissioning start	Jan. 2011	June 29, 2012	year and a half delay
Accept wastewater for treatment	Mar. 2011	Aug. 15, 2011	without new conveyance system

▼ **Budget¹**: Cost updates show estimated costs at completion exceeding the baseline budget.

Project	Adopted 2004 Baseline		WTD 2010 Cost Update		OMC 2010 Estimate ³		LTD Expenses	LTD %
	3% Inflation	5% Inflation	Low ²	High	Low	High	Thru Mar 2010	Expended
Conveyance	1,021	1,106	932	963	919	951	708	76%
Treatment Plant	640	684	884	894	895	905	712	81%
Total	\$1,660	\$1,790	\$1,816	\$1,857	\$1,821	\$1,856	\$1,421	78%

¹ All costs are shown in \$ millions. ² Assumes receipt of tax exemption. Used for Life to Date (LTD) % calculation.

³ Does not include completion of BT-3 mining or other disputed costs. Not directly comparable to WTD cost update.

▼ **Issues and Risks:** Mitigation strategies are in place but may not be adequate to address the following:

- Completion of the BT-3 mining poses several technical challenges.
- Forecasts for cost and schedule for the completion of BT-3 mining have considerable uncertainty.
- Favorable resolution of the \$41 million sales tax exemption and disputed costs of central tunnel delay is needed to deliver Brightwater at the forecast cost of 1.4% above the highest baseline cost estimate.

For detailed information including recommendations, see the following report.

King County Auditor's Office – Cheryle Broom, County Auditor

The King County Auditor's Office was created in 1969 by the King County Home Rule Charter as an independent agency within the legislative branch of county government. Its mission is to promote and improve performance, accountability and transparency in King County government through conducting objective and independent audits and services.

Capital Projects Oversight Program – Tina Rogers, Manager

The Capital Projects Oversight Program (CPO) was established within the Auditor's Office by the Metropolitan King County Council through Ordinance 15652 in 2006. Its goal is to promote the delivery of capital projects in accordance with the council approved scope, schedule, and budget and to provide timely and accurate capital project reporting.

CPO oversight reports are available on the Auditor's Web site (www.kingcounty.gov/operations/auditor/reports) under the year of publication. Copies of reports can also be requested by mail at 516 Third Avenue, Rm. W-1033, Seattle, WA 98104, or by phone at 206-296-1655.

**ALTERNATIVE FORMATS AVAILABLE UPON REQUEST
CONTACT 206-296-1655 OR TTY 206-296-1024**

INTRODUCTION

Attached is the eleventh quarterly *Brightwater Project Construction Phase Oversight Monitoring Consultant Report* prepared by R.W. Beck, the Oversight Monitoring Consultant (OMC), which is prepared and issued under the council-mandated Capital Projects Oversight (CPO) Program in the King County Auditor's Office. This transmittal to the Metropolitan King County Council (council) Government Accountability and Oversight Committee is to provide timely information on the status of the scope, schedule, budget, and risk for the Brightwater project.

We continue to show the risk level for the Brightwater project as red, indicating that corrective action is needed to address the schedule delay, risk of cost increases, and other issues on the project. Included herein are four new recommendations which we offer to more fully address the issues on the project.

This report and the attached OMC report cover the fourth quarter of 2009 and the first quarter of 2010, ending March 31. Where more current information is available, it has been included.

PROJECT STATUS UPDATE WITH RECOMMENDATIONS

Scope

The scope of the final project has not changed; however, as previously reported, WTD is planning to startup the treatment plant in mid August 2011 prior to the completion of the conveyance system, forecast to be completed in late June 2012. This is planned to mitigate risks and costs associated with having the plant sit idle for such a long period of time before final testing and commissioning is conducted. By starting up the treatment plant, as proposed, wastewater will leave the treatment plant using portions of the existing conveyance system and will be treated again at either the south or west point treatment plants. This increases some operation and capital costs.

WTD prepared an analysis of the costs and risks of several treatment plant commissioning alternatives, as required by council proviso, to use as a basis for their decision-making. This analysis was prepared in consultation with the OMC. The OMC reports that the analysis provides feasible alternatives and a timeline and basis for future decisions regarding start up and commissioning. As recommended in this proviso report¹ WTD must make some decisions, beginning in October. WTD will continue to assess the alternatives as the schedule for completion of the conveyance system becomes more certain. We will monitor and provide input as appropriate. The new OMC recommendation below addresses one of the first implementation actions WTD will need to take.

If change orders related to the interval between treatment plant substantial completion and commissioning are required, WTD should consider the effects of conveyance system schedule uncertainty in its negotiations strategies.

Schedule

Although most of the Brightwater Program construction is proceeding well and the date for the hydraulic completion of the treatment plant is just one month behind schedule, delays on the Central Tunnel portion of the conveyance system have caused a significant delay in the completion date for the project. This was caused by the slow progress of mining on BT-2 and BT-3 by the central tunnel contractor, VPFK. In response to VPFK's inability to present an acceptable plan for completion of the BT-3 work, the

¹ Commissioning Alternatives Brightwater Wastewater Treatment Plant, March 2010

County Executive declared an emergency, waiving certain procurement requirements so that Brightwater could be completed in a timely manner. This allowed WTD to proceed to contract with a different contractor, JayDee Coluccio (JDC), who will use the tunnel boring machine (TBM) from the west tunnel (BT-4) to complete the BT-3 mining. WTD based this decision on an assessment that JDC would be able to complete BT-3 more quickly and at lower cost than VPFK. WTD also negotiated with VPFK to complete BT-2 mining with incentives for meeting a mutually agreeable schedule, and resolved some outstanding change orders, effectively reducing some of the county's cost risk on the BT-2 portion of the work. Mining of the BT-2 tunnel is now complete.

With these actions, the projected date for commissioning of the conveyance system to begin is in late June 2012, a one and a half year delay from the approved schedule completion date shown on page one of this report. The schedule delay has caused additional costs, many of which are in dispute as described below. There are two outstanding past OMC recommendations that deserve WTD's continued consideration to manage the remaining schedule risks on the project. The OMC makes the new recommendation below to address the need for WTD to effectively monitor and plan for schedule delays beyond what was anticipated with the new JDC contract.

WTD should continue to assess JDC's progress refurbishing the TBM and mining progress (once it resumes) and proactively develop contingency plans. Contingency plans should include thresholds for taking action. WTD should also ensure that its ongoing BT-3C² completion planning include the timing of remaining VPFK work, and define the responsibility for connection between the tunneling segments completed by VPFK and JDC.

Budget

To date, the delays in mining of the central tunnel have resulted in \$178 million in disputed costs on the Brightwater Project. This includes the contract amount for completion of BT-3 mining by JDC, by cost reimbursable, fixed fee contract. This type of contract provides less cost certainty than the other types of contracts used on this project. The remaining mining for BT-3 is through some of the highest pressure and most challenging soil conditions anticipated on the project, and using a different type of boring machine poses different technical issues, all of this adding further uncertainty to the costs of this contract work. Some of the disputed costs will increase cash flow demands on the project as the county has already paid or undertaken a contractual obligation to pay. The county is taking legal action to recover these costs from VPFK and their surety. The disputed costs also include claims by VPFK that the county has rejected. The ultimate responsibility for and final tally of all disputed costs will not be known for some time. WTD may need to request appropriation for additional expenditure authority at some future point, that is beyond what was anticipated with the 2010 budget request and capital improvement program. Attachment A summarizes the appropriations and expenditures on the project through March.³

WTD will conduct ongoing monitoring of the contract costs for the BT-3 completion to forecast whether costs are likely to exceed the \$68.9 million contract amount. BT-3C contract costs are one component of the disputed costs; the ultimate responsibility for all disputed costs will likely be determined through legal action. Only then will the total project cost and how it compares to the baseline cost estimate be known. There are two outstanding past OMC recommendations that deserve continued consideration to manage

² BT-3C refers to the new BT-3 mining contract with the JayDee/Coluccio joint venture.

³ Additional expenditures in April and May total \$62.7 million.

these remaining risks on the project. In addition the OMC makes another new recommendation below for additional risk management activities related to the new BT-3 completion contract.

WTD should ensure that proper and complete quality assurance/quality control efforts are documented as part of the project's review of Lovat's BT-3C TBM modification designs by staff and/or consultants with TBM design expertise.

The updated Trend Report from WTD shows a forecast project cost at completion ranging from \$1.816 to \$1.857 billion. This represents an increase in project costs of \$16 million and continued uncertainty about \$41 million related to a potential sales tax exemption. OMC's Trend Report review has a cost estimate in a similar range but does not include the costs of completing the central tunnel and other disputed costs on the project discussed above. Therefore, the two estimates are not directly comparable. The reasons for the increase in WTD's cost estimate over the previous estimate are predominately non-construction cost increases due to schedule revisions and longer project duration and a correction to include previously omitted costs of some owner-furnished materials. The total project cost is now forecast to exceed the baseline cost estimate's high range (based on a 5% inflation rate) even with favorable outcomes on the sales tax exemption and disputed costs. The OMC Trend Report review included an assessment of the demand on contingency funds. They estimate that up to \$25 million of the remaining contingency could be unspent at the completion of the project.

To avoid spending the entire construction contingency and to keep the project cost as close to the baseline estimate as possible, it will be important for WTD to continue to focus project management attention to controlling all remaining project costs. There are two outstanding past OMC recommendations that deserve WTD's continued consideration to manage remaining cost risk. In addition, the OMC makes a new recommendation below to address this area of concern.

WTD should dedicate sufficient resources to pursue all ways to manage other project issues that could reduce costs compared with estimates, including: resolution of other outstanding change orders and claims; avoiding delays on other contracts that influence cost, successful start up and commissioning of the treatment plant; an assessment of whether any cost recovery opportunities are available; completing mitigation project commitments; ramp down of project staff and consultant work as construction contracts are closed out; and securing the M&E sales tax exemption.

Issues and Risks

The issues and risks on the Brightwater project of greatest concern at this time are listed on the cover page of this transmittal and discussed in greater detail in the attached OMC report. Concern over the significant schedule delay and the potential cost impacts resulting from these risks remains. Oversight is focused on these main risk areas.

ACKNOWLEDGEMENTS

We appreciate the collaborative efforts of WTD, DNRP, DES and OMB in providing for effective oversight of the Brightwater Treatment System consistent with council intent. Their responsiveness and willingness to provide improved access to information for the OMC is commendable. Oversight is being conducted, and this report was prepared by a team from the King County Auditor's Office, including Tina Rogers, Susan Baugh, and Cheryle Broom. The attached report was prepared by R.W. Beck who is under contract with the auditor's office to provide oversight monitoring consulting services.

We are scheduled to give a presentation of this quarterly report to the Government Accountability and Oversight Committee on July 6. Should you have questions or comments on the report, please contact Tina Rogers, the Capital Projects Oversight Manager, or Cheryle Broom, County Auditor.

DISTRIBUTION

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ATTACHMENTS

Attachment A - Brightwater Budget Summary through March 2010

Brightwater Project Construction Phase Oversight Monitoring Consultant Report – Combined Quarterly Reports for Quarters Ending December 31, 2009 and March 31, 2010, R.W. Beck

ATTACHMENT A

**BRIGHTWATER BUDGET SUMMARY THROUGH MARCH 2010
APPROPRIATION / EXPENDITURE HISTORY**

Year	Appropriation	Expenditures*			Cumulative Balance
		Conveyance System	Treatment Plant	Total	
1998	195,842	122,611	73,231	195,842	-
1999	1,521,938	996,094	525,844	1,521,938	-
2000	3,672,816	1,657,382	2,015,434	3,672,816	-
2001	8,422,017	2,739,756	5,440,754	8,180,510	241,507
2002	38,266,455	1,762,691	9,674,916	11,437,608	27,070,354
2003	80,834,249	15,928,950	46,818,655	62,747,605	45,156,998
2004	178,569,564	40,922,914	33,118,446	74,041,360	149,685,202
2005	432,633,315	36,971,596	63,257,313	100,228,909	482,089,608
2006	298,704,845	74,651,114	94,683,302	169,334,416	611,460,037
2007	528,410,201	153,321,358	62,339,610	215,660,969	924,209,269
2008	117,988,737	204,232,705	165,534,653	369,767,358	672,430,648
2009	70,669,725	158,880,957	201,690,664	360,571,621	382,528,752
2010**	28,044,005	19,490,310	27,416,054	46,906,364	363,666,393
Life-To-Date	\$1,787,933,709	\$711,678,438	\$712,588,877	\$1,424,267,316	\$363,666,393
CIP*** 2011-2015	12,404,830				
Appropriations to date plus CIP	\$1,800,338,539				

*Includes Expenditures per IBIS Accounting System for project numbers 423457, 423484, and 423575

** 2010 shows year to date expenditures through March

*** CIP is Capital Improvement Program submitted with the executive's 2010 capital budget request