



King County

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MEMORANDUM

DATE: April 13, 2009

TO: King County Council Government Accountability and Oversight Committee

FROM: Cheryle A. Broom, County Auditor

SUBJECT: Brightwater Project Quarterly Oversight Report

Attached is the seventh Brightwater Project Construction Phase Oversight Monitoring Consultant Report prepared by R.W. Beck, the Oversight Monitoring Consultant (OMC), issued under the Council-mandated Capital Projects Oversight Program. This report provides an updated review of the Brightwater Project cost, schedule, and risks based on the Wastewater Treatment Division's (WTD) progress as of December 2008. Emerging issues that have recently surfaced are also highlighted in the report along with implementation status of past OMC recommendations.

The OMC maintains their position that the Brightwater Project costs are more likely to be in the \$1.843 to \$1.849 billion range, or \$41 to \$47 million higher than the WTD 2008 trend report estimate. WTD plans to update its cost estimate in the 2009 Trend Report that will be available at the end of April. The OMC and the Brightwater Project Oversight Work Group have discussed several components of the estimate update during the past quarter.

The concerns about conveyance schedule delays continue since the last quarterly report. WTD's most recent schedule report (January 31, 2009) shows a 189-day delay in the overall critical path. This is 26 days longer than reported in the previous quarter, and extends the projected date for commencing wastewater treatment to September 12, 2011.

The critical path has shifted from the western segment, known as BT-3, of the Central Tunnel, to the eastern segment, BT-2. Oversight efforts will continue to be focused on WTD's mitigation strategies to address this delay on the primary critical path and efforts to quantify the risks and mitigate the impacts of schedule delay.

The OMC report also documents WTD's ongoing efforts to address previous recommendations made to better manage cost and schedule risks on the project. In addition, the OMC makes one new oversight recommendation:

WTD should make additional change order documentation available to the OMC per existing communication protocols. Documentation should show how change orders and issues likely to become change orders are categorized and should compare the contractor's original requested change order amount versus negotiated amount once change orders are executed.

No formal presentation of this quarterly report has been scheduled for the Government Oversight and Accountability Committee. We have tentatively scheduled a briefing of the committee on May 19 for the OMC report on WTD's upcoming 2009 Trend Report. Please contact Tina Rogers, the Capital Projects Oversight Manager, or me should you have questions or comments on the report.

CB:TR:SB:jl

Attachments: Brightwater Project Construction Phase Oversight Monitoring Consultant Report, R.W. Beck, (Quarter Ending December 31, 2008)

cc: Metropolitan King County Councilmembers
Ron Sims, County Executive
Theresa Jennings, Director, Department of Natural Resources and Parks (DNRP)
Christie True, Division Director, Wastewater Treatment Division, DNRP
Bob Cowan, Budget Director, Office of Management & Budget (OMB)
Dan Lawson, Internal Audit, Executive Audit Services, OMB
David Jochim, Vice President, R.W. Beck, Inc.
Tom Jacobs, Senior Management Consultant, R.W. Beck, Inc.
Saroja Reddy, King County Council Policy Staff Director
Mike Alvine, Principal Legislative Analyst, King County Council, Government Accountability and Oversight Committee
Mark Melroy, Senior Principal Legislative Analyst, King County Council Budget and Fiscal Management Committee
Beth Mountsier, Senior Principal Legislative Analyst, King County Council Regional Water Quality Committee

Brightwater Project Construction Phase
Oversight Monitoring Consultant Report
(Quarter Ending December 31, 2008)

King County
Brightwater Project Oversight Services
Contract No. P43024



In association with:



Hatch Mott
MacDonald

Brightwater Project Construction Phase
Oversight Monitoring Consultant Report
(Quarter Ending December 31, 2008)

King County
Brightwater Project Oversight Services
Contract No. P43024



In association with:



Hatch Mott
MacDonald

Brightwater Project Construction Phase Oversight Monitoring Consultant Report

Quarter Ending December 31, 2008

Final as of April 8, 2009

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Brightwater Project Construction Phase Oversight Monitoring Consultant Report Quarter Ending December 31, 2008

Final as of April 8, 2009

Executive Summary

This Executive Summary presents highlights of the Oversight Monitoring Consultant's (OMC's) quarterly briefing on the Brightwater Project. This report is based on information through December 31, 2008, and is supplemented by more recent cost and schedule information where available.

OVERALL PROGRAM COSTS

We continue to be of the opinion, expressed in our previous quarterly reports¹ that project costs are more likely to be in the \$1.843 to \$1.849 billion range, or about \$41 to \$47 million higher than WTD's 2008 *Trend Report* estimate. (see Table ES-1, which is unchanged from our previous quarterly report). Our opinion in part reflected our concern that WTD's project contingencies² were low and had been reduced from projections WTD had made in 2007.

Table ES-1. Estimated Project Costs (nominal \$million)

	WTD 2004 Baseline 3% Infl. 5% Infl.	WTD 2007 Trend	WTD 2008 Trend	OMC Estimate Based on Review of 2007 Trend	OMC Estimate Based on Review of 2008 Trend
Conveyance	\$1,021 - \$1,106	\$928	\$927	\$946 - \$952	\$942 - \$944
Treatment Plant	\$640 - \$684	\$840	\$875	\$882 - \$911	\$901 - \$905
Total	\$1,660 - \$1,790	\$1,767	\$1,802	\$1,827 - \$1,862	\$1,843 - \$1,849

Our opinion continues to be reinforced by newer cost and schedule information. This newer cost information includes recent change order data and total 2008 construction

¹ Previous quarterly report is the Oversight Monitoring Consulting Report for the quarter ending September 30, 2008, prepared in December 2008.

² For the Brightwater project, WTD maintains both construction contingencies and project contingencies. The construction contingencies are applied to each construction contract and cover the typical risks associated with construction, such as changed subsurface contingencies. In our opinion, WTD's construction contingencies for Conveyance (\$68.6 million) and the Treatment Plant (\$33.1 million) are generally appropriate. However, we believe the project contingencies, which cover additional risks such as those associated with coordination of multiple construction contracts, are low.

management costs. Newer schedule information includes the lengthening delays (discussed below) which increase the likelihood of additional expenditures into 2011 or 2012.

WTD's 2009 Trend Report is expected to be published in April 2009. OMC will review WTD's 2009 Trend Report when it is available and will offer a revised estimate of total project cost in our next quarterly report.

SCHEDULE

WTD's most recent schedule report (dated January 31, 2009) shows the estimated hydraulic completion date for the project as June 13, 2011 and that the treatment system will start accepting wastewater for treatment on September 12, 2011. These dates represent a 189-day delay in the overall critical path (compared with the original contractor's baseline schedule), which is 108 days longer than the delay reported as of September 30, 2008. Events during February 2009 have increased the delay beyond 189 days, but the specific amount is not yet available from WTD.

The overall critical path runs through the Central Tunnel. As of December 2008, the critical path was through the BT-3 tunnel (mining starting at the North Kenmore portal and proceeding westerly to the Ballinger Way portal). In January 2009, the critical path had shifted to the BT-2 tunnel (mining starting at the North Kenmore portal and proceeding easterly to the North Creek portal). This shift in the critical path was the result of continued BT-3 mining progress while BT-2 mining was largely stopped to address significant maintenance needs.

OMC continues to await WTD's more detailed contingency and risk analysis associated with Central Tunnel, which continues to be under preparation.

Progress at the treatment plant remains on schedule. As of January 31, 2009, key substantial completion milestones for the liquids and solids contracts are in late January or early February 2011. This is approximately 14 weeks ahead of the conveyance system substantial completion, indicating the increasing risk of schedule divergence between the conveyance system and the treatment plant. WTD's startup planning will address this risk, and a significant interim startup planning work product is expected in the first quarter of 2009.

Additional developments since our previous quarterly report include substantial completion of the Marine Outfall project, the East Tunnel contractor's demobilization from the Influent Pump Station (IPS) site, beginning of construction work at the IPS by the IPS contractor, and continued progress at or ahead of schedule on the West Tunnel and at the treatment plant site.

RISKS

Looking forward, major risk issues include: unforeseen conditions during tunneling; delay risk associated with BT-2 and BT-3 mining; coordination at the IPS site between the East Tunnel, Central Tunnel, and IPS Contractors; coordination and integration of work under two different prime contractors at the Treatment Plant; and delays in Treatment Plant startup caused by Conveyance delays. There continues to be increasing optimism that the WTD's ongoing work on startup planning should help manage and mitigate some of the risk of schedule divergence between the Treatment Plant and Conveyance.

PROGRESS ON PREVIOUS OMC RECOMMENDATIONS

Outstanding OMC recommendations are related to revising contingencies in WTD's upcoming *2009 Trend Report*, the implications of a substantial Central Tunnel delay, and WTD's ongoing efforts to manage the impacts of potential delays.

In the past few months, WTD has aggressively worked to address Central Tunnel schedule delays, but OMC feels that WTD's schedule mitigation and contingency planning efforts could be more robust and should be completed earlier. In the next quarterly report, OMC will offer additional observations and recommendations about WTD's approach to risk management and OMC will comment on WTD's *2009 Trend Report*.

NEW OMC RECOMMENDATION

OMC offers one new recommendation.

1. WTD should make additional change order documentation available to the OMC per existing communication protocols. Documentation should show how change orders and issues likely to become change orders are categorized and should compare the contractor's original requested change order amount versus negotiated amount once change orders are executed.

Brightwater Quarterly Report

BACKGROUND

This report is a briefing on the Brightwater Project provided by the Project's Oversight Monitoring Consultant (OMC). Overall, this quarterly report relies on information provided through WTD's *January 2009 Monthly Report*, *Conveyance Construction*, and *Treatment Plant Construction Reports*. However, where available, we have used more recently available information to prepare this report. Specifically, this includes additional tunneling data through February 28, 2009, and information gathered through additional phone conversations and meetings with WTD.

The OMC's previous quarterly report was dated December 29, 2008, and covered the period through September 30, 2008. Since our previous quarterly report, work has progressed on both Conveyance and the Treatment Plant as described below.

Conveyance

- Work on the Marine Outfall contract is substantially complete.
- Mining for the West Tunnel (BT-4) continues to be on or slightly ahead of plan. As of March 14, 2009, approximately 29 percent of the mining is complete. In approximately one month, the tunnel boring machine (TBM) is expected to encounter high water pressures, which is expected to be the most challenging portion of the mining under this contract.
- The westbound Central Tunnel BT-3 mining remains behind plan. However, mining progress has improved substantially over the past few months as January and February production has approximately equaled plan. As of March 14, 2009, approximately 42 percent of the mining is complete. BT-3 is no longer the primary critical path, but remains a secondary critical path.
- The eastbound Central Tunnel BT-2 mining has been essentially stopped since mid-December 2008. BT-2 mining is now the primary critical path. After replacement of the TBM cutter heads and other maintenance, some mining has resumed as of mid-March. As of March 14, 2009, approximately 57 percent of the mining is complete.
- The East Tunnel contractor met a major contract milestone on January 13, 2009, when demobilization from the Influent Pump Station (IPS) site was complete. Currently, the East Tunnel contractor is beginning the installation of piping from the conveyance portal (Portal 46) located at the treatment plant site.
- Kiewit Pacific Company, the IPS contractor, has initiated construction on the IPS.

Treatment Plant

- Hoffman (liquids GC/CM contract) continues to perform concrete placement work on the head-works, grit removal system, primary treatment, and foundations for the aeration tanks and membranes. Work on pipe encasements and concrete

coatings is beginning. Also ductwork and cable tray installation has begun in the primary gallery area. Pipe installation has also begun in the Headworks, Grit and Primaries areas.

- Work by Kiewit Pacific (solids contract) continues including concrete work on the digesters, solids storage tank, and energy gallery, energy building walls, and foundations for the truck load out area. Pipe installation in the solids building continues. Cable tray and pipe supports are being installed in the Solids Building and HVAC duct is being installed in the Energy Gallery.

ANALYSIS AND FINDINGS

Cost

OMC Continues to Believe Project Costs Will be Higher than Projected by WTD

Table 1 summarizes OMC's most recent projection of project costs.

Table 1. Estimated Project Costs (nominal \$million)

	WTD 2004 Baseline 3% Infl. 5% Infl.	WTD 2007 Trend	WTD 2008 Trend	OMC Estimate Based on Review of 2007 Trend	OMC Estimate Based on Review of 2008 Trend
Conveyance	\$1,021 - \$1,106	\$928	\$927	\$946 - \$952	\$942 - \$944
Treatment Plant	\$640 - \$684	\$840	\$875	\$882 - \$911	\$901 - \$905
Total	\$1,660 - \$1,790	\$1,767	\$1,802	\$1,827 - \$1,862	\$1,843 - \$1,849

This projection was completed in our Quarterly Report for the quarter ending March 30, 2008. In that report, we provided an opinion that WTD's *Brightwater Cost Update, Current Conditions and Trends, January 2008 (2008 Trend Report)* likely underestimated costs by about \$41 to \$47 million.³ Based on ongoing developments since our previous quarterly report, we continue to believe that WTD's costs in its *2008 Trend Report* are understated.

Treatment Plant Buyout Savings Have Not Changed Substantially Since the Previous Quarterly Report

Buyout Savings are part of the GC/CM contract for the liquid stream at the treatment plant, and they represent the cumulative difference between the negotiated Maximum Allowable Construction Cost (MACC) and the actual bids awarded to subcontractors.

³ This in part reflected our concern that WTD had reduced project contingencies from the levels in its *2007 Trend Report* (i.e., for Conveyance the project contingency was reduced from \$18.2 to \$6.2 million and for the Treatment Plant the project contingency was reduced from \$4 million to \$2 million. Further, in our review of the 2007 Trend Report we also provided an opinion that we believed the \$4 million contingency for the Treatment Plant was low.) In addition, we stated our concern that some of WTD's cost projections (i.e. for Treatment Plant buyout savings and end of job "soft costs") were based on optimistic assumptions.

Thus, the amount of buyout savings can fluctuate up and down depending on the outcome of each subcontract bidding process. In addition, Buyout Savings can be used to cover certain items set forth in the GC/CM contract (described in our previous quarterly report.) WTD's GC/CM contract with Hoffman includes provisions for returning much of the buyout savings to WTD.

As of January 31, 2009, cumulative Buyout Savings were approximately \$24.9 million. This is only slightly less than the \$25.1 million value reported in our previous quarterly report (as of November 20, 2008).

Subcontractor bidding for the EECC and landscaping is expected to be completed in the second quarter of 2009.

Change Order Status

The most recent claim and change order data is from WTD's January 31, 2009 construction reports, and is as follows:

- Conveyance construction progress is approximately 56 percent, measured as percent of contract value earned by construction contractors, while executed Conveyance change orders are approximately 21 percent of WTD's conveyance construction contingency. Including pending (costs negotiated but not executed) and estimates of potential (costs not yet negotiated) change orders could increase this to a maximum of about 57 percent.

In the fourth quarter of 2008, several large potential change orders have surfaced. WTD is in discussions with the Central Tunnel contractor regarding issues related to ongoing tunneling difficulties. The West Tunnel contractor has submitted a significant change order request related to testing of the TBM prior to its delivery. WTD is currently evaluating this request.

- Treatment Plant construction progress is approximately 35 percent, measured as percent of contract value earned by construction contractors, while executed Treatment Plant change orders are approximately 7 percent of WTD's construction contingency. Including pending and estimates of potential change orders could increase this up to a maximum of about 13 percent.

Table 2 shows additional change order information through January 31, 2009, focusing on the amount of change order activity compared with construction progress to date. This data provides an early indication, should the current trends continue, of the change order activity at the end of each contract. The further along a contract is toward completion, the closer the fourth column is to the final change order record.

Table 2. Change Order Information for Major Construction Contracts (1/31/09)

Contract	Percent Construction Complete	Number of Executed and Pending Change Orders	No. of Pending Change Items (1)	Executed, Pending and Requested Change Orders As % of Amount Paid to Date	Most Significant Change Orders
East Tunnel	77%	19	15	7%	
Central Tunnel	57%	11	12	13%	Anticipated: Tunneling Conditions
West Tunnel	54%	8	6	18%	Executed: Hydraulic Changes; Requested: TBM Testing
Marine Outfall	97%	Not Available	Not Available	7%	
Influent Pump Station	5%	4	66	132%	Requested: Impact of Central Tunnel
Liquids Stream	37%	42	51	1%	
Solids Stream	17%	3	74	4%	

Note:

(1) Change items include requested change orders (contractor proposed) or request for change proposal (owner initiated). Pending change orders are those where the contractor and WTD have agreed on costs but the change order is not yet executed.

The amount of Treatment Plant change orders to date represents relatively low use of the construction contingency. The number of pending change items on the solids contract is high relative to construction completed to date.

Executed Conveyance change orders are still of a reasonable magnitude compared with construction progress to date. A recent trend, however, is an increasing number and dollar amount of pending change items compared with construction progress to date. In particular, OMC is tracking pending change item activity at the IPS, which is very high compared with construction progress to date. Implementation of our new recommendation will help verify the impact of WTD's early Notice to Proceed on the IPS, which could potentially result in an earlier submission of change orders. Central and West Tunnel contracts are also starting to display a trend that suggests change item activity is increasing.

As stated in the last OMC quarterly report, a significant amount of the tunneling remains to be completed, and thus WTD's exposure cannot yet be fully known. In general, for the overall Project progress to date, change order activity to date (measured as percent of construction contingency used) continues to support our opinion WTD's construction contingencies are generally reasonable. However, the possibility exists, and is increasing, that WTD's construction contingencies will be insufficient. OMC will reassess this opinion in our next quarterly report after WTD's *2009 Trend Report* is available.

The EECC and Landscaping MACC Has Been Negotiated

The MACC for the remaining phase of the treatment plant liquids stream was negotiated in January. This work includes the Environmental Education and Community Center (EECC) and landscaping work at the treatment plant site. Combined, the MACC for the EECC and landscaping is approximately \$15.2 million. This value is within two percent of WTD's projection in its 2008 Trend Report, provided that buyout savings for this work are approximately the historical average for the remainder of the liquids stream project.

Schedule

East Tunnel Milestone 1 Was Reached

A major construction milestone was reached on January 13, 2009, when the East Tunnel Contractor demobilized from the IPS site. East Tunnel construction activities are now focused on installing piping in the East Tunnel, which is being done from Portal 46 on the Treatment Plant site. East Tunnel construction activities are no longer a critical path item.

Estimated Project Completion is Now 189 Days Behind Plan Due to Continued Difficulties with BT-2 Mining

Delays at the Central Tunnel have increased since our previous quarterly report. As of the most recent WTD schedule report, the critical path is now the eastbound BT-2 tunnel, where mining was essentially stopped between mid-December 2008 and mid-March 2009. The overall project delay is now 189 days compared with the contractor's original baseline schedule, which is 102 days more than the 81-day delay reported in our previous quarterly report.

The BT-2 TBM was shut down for major maintenance activities. This maintenance proceeded slowly because the high pressure conditions created by the mining operation

limit the amount of time divers can spend completing maintenance activities at any one time. As of March 14, 2009, mining was approximately 57 percent complete. WTD has held numerous partnering sessions with the Central Tunnel contractor, and there have been some changes that are intended to increase production rates when mining resumes. These changes include:

- Change in the Contractor's project manager
- Initiation of 24 hour / 7 day mining
- TBM modifications to change cutting tools to better match soil conditions
- Design modifications to the slurry separation plant.

A key project milestone occurs at the interface between the Influent Pump Station (IPS) contractor and the Central Tunnel contractor at the Influent Structure (IS). The IPS contractor will have access to the IS (a portion of the IPS site) after BT-2 mining is complete and the Central Tunnel contractor has demobilized from the IS. The IPS contractor's work at the IS is on the critical path, and the remainder of the critical path includes clean water testing and startup.

BT-3 is Still Behind Schedule But Mining Production is Improving

The westbound BT-3 tunnel remains a secondary critical path, but recent tunneling progress has been approximately equal to plan. The weekly average production rates are shown in Table 3, which show improving production in January, February, and early March.

Table 3. BT-3 Mining Production

Month	Average Mining Production, Feet Per Week (1)	Time Period Covered in Table
Aug 2008	212	Five Weeks Ending 8/30
Sept 2008	100	Four Weeks Ending 9/27
Oct 2008	107	Five Weeks Ending 11/1
Nov 2008	141	Four Weeks Ending 11/29
Dec 2008	199	Four Weeks Ending 12/27
Jan 2009	269	Five Weeks Ending 1/31
Feb 2009	271	Four Weeks Ending 2/28
Mar 2009 (1 st Half)	380	Two Weeks Ending 3/14

(1) Tunneling data is reported weekly.

BT-3 mining is part of a secondary critical path that includes BT-3 mining, BT-3 piping installation, North Kenmore Portal piping and site restoration, clean water testing, and startup. As of January 31, 2009, the overall secondary critical path delay is 139 days. This is an increase of 58 days since September 30, 2008.

OVERALL MANAGEMENT ISSUES

Risk Management Update

Throughout the project, WTD has used risk registers for the Treatment Plant and Conveyance as one tool to identify, address, and manage risks. The risk registers identify risks, and identify potential risk mitigation actions. Many of the County's risk management actions are covered in the construction contracts and construction management procedures and directed at avoiding the risks. There is limited mitigation planning directed at managing a potential emerging risk or a risk event that has already occurred.

During planning and design, risk categories were relatively generic. (For example, "tunneling delay due to change in ground conditions.") As construction has proceeded, the specific risks that are likely to be encountered have become more defined. (For example, specific reasons and amounts of delay have been assessed for certain tunnel contracts.) Thus, during construction, while the risk registers generally capture major project risks in broad terms, they do not necessarily detail the particular risks being encountered nor do they describe the possible consequences or potential cost or schedule impacts of those risks.

Outside the summary-level risk register format, WTD has completed separate more detailed analysis and contingency planning to address specific risks outside of the more summary-level risk register format. Examples of these analyses were reported in our previous quarterly report.

We continue to be of the opinion that WTD should update these risk registers on a more frequent and regular basis.

We also believe that it is appropriate for WTD to continue conducting additional risk analyses to address emerging issues outside the risk register format.

To the maximum extent allowable per confidentiality protocols, this information should be shared with the OMC and County staff participating in the oversight function.

System Startup Planning

WTD continues with the development of detailed plans for start-up, testing and commissioning of the entire integrated Brightwater Project. Planning includes protocols for integrating operations staff, training, start-up and commissioning procedures as well as specific plans for running clean water and wastewater through the facilities to test various systems.

WTD completed a draft Startup Implementation Plan in February 2009 and provided it to OMC for its review in March 2009. This plan outlines the steps required to successfully transition the Brightwater Treatment System from construction to normal operation. It describes startup teams, the roles and responsibilities of King County staff and contractor and consultant staff, specific startup tasks and durations, general schedules, and risks.

The draft Startup Implementation Plan is based on the following assumptions:

- A 5-month gap exists between the completion of the internal Clean Water Liquid System testing at the Treatment Plant and the internal Clean Water Testing at the IPS.
- Internal Clean Water testing of both the IPS the treatment plant must be completed before the 90-day Clean Water Recirculation test (on the critical path) can begin.
- All equipment and component testing is completed on time to allow the 90-day Clean Water Recirculation testing to proceed as scheduled.
- During the 90-day Clean Water Recirculation testing, contractor and construction management will have lead responsibility,
- During wastewater testing, WTD and consulting engineers will have lead responsibility,
- Odor control systems testing is completed prior to wastewater testing for Treatment Plant and Conveyance.

The OMC feels that the draft Startup Implementation Plan is well structured and addresses the key points that need to be addressed at this point in time. Durations on the activities appear reasonable for planning purposes. We do acknowledge that the Plan is a living document and will adjust over time as better information becomes

available and WTD's consultants and contractors review the Plan further. We would anticipate that future modifications and refinements to the Plan would address:

- Establishing predecessor ties between the various activities in the Plan in order to establish a critical path for Startup.
- Incorporate Startup Implementation Plan schedule to the master integrated schedule.
- A mitigation section describing adjustments to the Plan that would be necessary if the gap between completion of the Liquid System testing at the Treatment Plant and the Clean Water Testing at the IPS significantly diverges from the current assumption in the Plan.
- Contingency planning in the event tasks take longer than anticipated.
- Odor control testing assumptions, including an assessment of startups at other facilities to identify specific risk elements and "lessons learned".
- Cost implications should WTD and consultant effort in 2012 be necessary.

FOLLOW-UP ON PREVIOUS OMC RECOMMENDATIONS

Our previous quarterly reports have included recommendations to help WTD better manage cost and schedule risks on the Brightwater Project. The following discussions report on the status of recommendations from our last quarterly report and on any ongoing issues from previous reports.

- **WTD should continue to update and refine its mitigation plans and strategies to manage the impacts of potential delays. Per existing confidentiality protocols, this information should be shared with the OMC as early as possible and promptly thereafter whenever updated.** WTD and OMC have met several times to discuss mitigation plans and strategies, and WTD refines its mitigation plans on an ongoing basis. Based on our review of available risk analyses, we believe that these analyses should generally be more comprehensive than those made available to the OMC to date.
- **WTD should continue to develop the Master Integrated Schedule, keep it up to date, and evaluate it on an ongoing basis.** All Contractor baseline schedules have been accepted as was reported last quarter; however, the OMC is continuing to monitor the Master Integrated Schedule on an ongoing basis.
- **Ensure coordination of the GC/CM and Solids package contractors at the Treatment Plant site by closely reviewing schedules and mandating communication protocols between WTD and those contractors.** Weekly coordination meetings are being held between the GC/CM and Solids contractors. These meetings now also include the East Tunnel contractor as the East Tunnel contractor shares part of the Treatment Plant site to install pipe in BT-1. WTD continues to report that contractors are working cooperatively to resolve any potential schedule and site access conflicts.

- In its upcoming 2009 Trend Report, we recommend that WTD pay particular attention to budgeting contingencies in light of: 1) actual 2008 costs for consultants and staff; 2) ability to actually ramp down staffing and consultant efforts at the end of job; 3) the potential for delay of individual contracts and the overall project; 4) actual status of buyout savings; and 5) other major potential risks such as the potential for the Treatment Plant to be ready for clean-water testing and ultimately for treating wastewater before Conveyance is completed. To the extent possible, major specific risks should be quantified in terms of costs and probabilities of occurrence and evaluated to inform the proposed project contingencies. This work should be completed early enough to allow for a review from the OMC and to inform the cost projections in the WTD's upcoming *2009 Trend Report*. WTD's *2009 Trend Report* is expected to be available in the second quarter of 2009. WTD has provided their preliminary estimates for item 1 to the OMC for early review. OMC will evaluate the contingencies when the *2009 Trend Report* is published.

FINDINGS AND NEW RECOMMENDATION

Based on the evaluations included in this quarterly report, the OMC make the following new recommendation:

1. WTD should make additional change order documentation available to the OMC per existing communication protocols. Documentation should show how change orders and issues likely to become change orders are categorized and should compare the contractor's original requested change order amount versus negotiated amount once change orders are executed.