



**STAFF REPORT  
ACTION REQUIRED**

**Amendment to Purchase Order 6012548  
Humber Treatment Plant - Upgrade of Waste Activated  
Sludge Thickening Facility**

<b>Date:</b>	July 28, 2010
<b>To:</b>	Public Works & Infrastructure Committee
<b>From:</b>	Executive Director, Technical Services Director, Purchasing and Materials Management Division
<b>Wards:</b>	Ward 5 – (Etobicoke Lakeshore)
<b>Reference Number:</b>	P:\2010\Cluster B\TEC\PW10046

**SUMMARY**

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The purpose of this report is to request authority to amend Purchase Order No. 6012548 for professional engineering services during construction related to the Humber Treatment Plant – upgrade of waste activated sludge thickening facility. The total amount being requested is \$665,015.96 net of all taxes (\$673,794.17 net of GST and HST Recoveries) increasing the current contract value from \$1,256,081.04 to \$1,921,097.00 net of all taxes (\$1,929,875.21 net of GST and HST Recoveries).

A portion of the extra work requested in this report was completed prior to the HST implementation date of July 1, 2010. Therefore, GST and HST recoveries are applicable.

This increase is as a result of additional engineering contract administration services during construction related to delays caused by unforeseen site conditions requiring additional work and labour disruptions from industry and municipal work stoppages.

**RECOMMENDATIONS**

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**The Executive Director of Technical Services and the Director of Purchasing and Materials Managements recommend that City Council:**

1. authorize the reallocation of funds in the amount of \$673,794.17 net of GST and HST recoveries to CWW008-44 from CWW049-04 – Digester Cleaning and upgrades as indicated in the table contained in the Financial Impact section of this report.

2. grant authority to amend Purchase Order No. 6012548 for professional services with MacViro Consultants Inc., a Division of Genivar Ontario Inc. for the provision of general office administration and site supervision services during construction by an additional amount of \$665,015.96 net of all taxes (\$673,794.17 net of GST and HST Recoveries).

## **FINANCIAL IMPACT**

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The amendment for an additional \$665,015.96 net of all taxes (\$673,794.17 net of GST and HST Recoveries) increases the current contract value from \$1,256,081.04 to \$1,921,097.00 net of all taxes (\$1,929,875.21 net of GST and HST Recoveries).

There is insufficient funding currently available in WBS Element CWW008-44 – Sludge Thickening Building Upgrade for the purchase order amendment of \$673,794.17. As a result, the additional cash flow is to be reallocated from the approved 2010 Toronto Water Capital Budget and 2011-2019 Capital Plan.

The following table summarizes the cash flow requirements, for the purchase order amendment identified in this report, by year, net of GST and HST Recoveries:

Account	Description	2010 Cash Flow	2011 Cash Flow	Total
CWW 049-04	Digester Cleaning & Upgrades	\$335,434.05	\$338,360.12	\$673,794.17

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information. Toronto Water Capital Programming unit has been advised and concurs that funds are available.

## **BACKGROUND**

The Humber Treatment Plant is a wastewater treatment plant with a design capacity of 473 megalitres per day (ML/d). Currently, the plant has a separate facility for thickening of its waste activated sludge (WAS) prior to feeding to the sludge digestion tanks. The purpose of thickening the WAS is to provide a more concentrated feedstock to the sludge digestion process to optimize the treatment process. The existing WAS thickening facility was constructed in the early part of 1970 and needed extensive maintenance and repairs. Existing equipment was deemed to have reached the end of its service life and was in need of replacement.

MacViro Consultants Inc., a Division of Genivar Ontario Inc. (MacViro) was retained via a consultant selection process through Request for Proposal 9117-03-7037 for the provision of contracted professional services for the upgrade to the Waste Activate Sludge Thickening Facility at the Humber Treatment Plant. MacViro, as the successful proponent, was issued Purchase Order 6012548 for general office administration and site supervision services during construction, for which the original value was \$839,671.70 net of GST.

In accordance with staff's authority within the City's Financial Control By-Law, the purchase order was subsequently amended for an amount of \$416,409.34 net of GST for changes in design that impacted the contract administration services, and an additional 46 weeks construction period for a revised construction duration of 130 weeks based on the successful tendered bid. The engineering cost related to general office administration and site supervision during construction was therefore revised from \$839,671.70 to \$1,256,081.04.

## **COMMENTS**

The construction tender for the upgrades to the Waste Activated Sludge Thickening Facility was advertised on June 19, 2006 in the Daily Commercial News and on the City's internet website with a closing date of August 16, 2006. The Purchasing and Materials Management Division opened the tenders on August 16, 2006 for Contract No. 06FS-48WP, Tender Call No. 160-2006 for Upgrading the Waste Activated Sludge Thickening Facility at the Humber Treatment Plant and the contract was awarded to Torbear Contracting Inc. (Torbear) in the amount of \$42,732,679.32 being the lowest bid meeting specifications. The staff report for an award of contract was approved by the Works Committee and was considered by City Council on September 25, 26 and 27, 2006. The report can be found at the following link:

<http://www.toronto.ca/legdocs/2006/agendas/council/cc060925/wks6rpt/cl023.pdf>

At the time of tendering, Torbear indicated a construction completion timeline of 130 weeks. With work starting on January 15, 2007, the construction contract was anticipated to be completed by July 15, 2009. The previous Purchase Order Amendment included an additional 16 weeks for construction supervision, which provided sufficient engineering fees for a construction completion date of November 4, 2009.

Construction is well underway, and the first phase of construction, consisting of approximately 55% of the building, the installation of two centrifuges and associated feedpumps, piping and controls, the complete polymer system, and the complete electrical system (transformers, switchgear and MCC's) has been successfully placed into operation. Delays in construction have occurred for various reasons, including two labour disruptions (from construction workers early in 2007 and the City union in June 2009), staff changes within Torbear, and significant unforeseen site conditions such as the existing twin 300 mm diameter discharge lines to the Mid-Toronto Interceptor (MTI) trunk sanitary sewer that contained deteriorated sections of sewers over 35 years old and

were in immediate need of repair. A revised construction schedule was provided by Torbear, which currently projects completion by February 2011.

Additional engineering fees for services during construction are recommended to address:

1. additional fees for the extension of contract administration services to suit the actual construction schedule. The increased construction period beyond November 4, 2009 to the estimated completion of June 29, 2011 is 86 weeks which includes a contingency of 20 weeks beyond the contractors estimated date for substantial performance of February 7, 2011. The revised completion date is June 29, 2011. MacViro has also requested a change in the weekly rate for contract administration services to cover this time period due to increased salary costs and the Consumer Price Index (CPI) adjustment.
2. weekend supervision work required for the contractor as they were working weekends to expedite the construction schedule; and
3. additional work required with the Eaton/Cutler Hammer electrical equipment shop drawing reviews.

The tender submitted by Torbear identified a construction period of 130 weeks, which was similar to other bidders. The contractor is behind schedule and the actual completion date is now estimated to be February 7, 2011 which is 66 weeks beyond the November 4, 2009 date for substantial performance. A contingency amount of 20 weeks should also be added to the construction duration for unanticipated site conditions, which results in a total of 86 additional weeks for general office administration and site supervision services.

MacViro's cost of services submission was time-based to upset limits based upon estimated effort and hourly rates, that were a blend of 2003 – 2009 rates, as no allowance for inflation was included in MacViro's proposal. The fees for the base scope of work for general office administration and site inspection were \$5,677.57 net of GST for any additional general office administration and site supervision services during construction above and beyond the tendered duration, for the time period up to November 4, 2009.

Staff rates have increased according to market conditions since November 4, 2009 and consequently MacViro has requested a staff rate increase of 2% plus CPI per annum compounded over six years. Technical Services reviewed MacViro's proposed schedule of fees for 2009-2011 in conjunction with the rates originally submitted for this project and found the rates to be acceptable, based upon the facts that: i) the rates appear reasonable when compared to other wastewater treatment plant consulting assignments; and ii) the rate increases appear consistent with market conditions observed over the past several years at 3.94% (2% plus CPI adjustment) per annum for a total of six years (the total increase is 24.82%). The rate increases have only been requested beginning November 4, 2009. The new increased rates will be held constant by MacViro to July 7, 2011. Given the delays that have occurred on this project, the need to maintain continuity and in the interest of fairness, the City recommends that the cost related to the base scope of services be increased by 86 weeks and the weekly rate of \$5,677.57 be increased to

\$7,086.86, net of GST. The extra cost for the increased supervision period of 86 weeks is \$609,469.96 net of GST.

Additionally, in an effort to mitigate the delays on the contract, Torbear has requested that they be allowed to work on weekends. This was acceptable to the City provided MacViro staff were available to inspect the work. Numerous weekend working dates (from February 2008 to October 2009) were required and MacViro has requested an additional fee of \$21,921.00 to cover this additional work. Technical Services agree with this additional engineering effort and the costs as noted as being fair and reasonable.

The tender documents named acceptable suppliers for the electrical switchgear and motor control centres such as Schneider Electric, ABB, Allen Bradley and Eaton/Cutler Hammer. Torbear selected Eaton/Cutler and their shop drawing submissions required a significant extra effort for review, above and beyond that considered typical for a project of this type. There were a total of nine (9) separate submissions and associated engineering review and co-ordination meetings for this equipment to ensure compliance with contract specifications. The time and effort expended was significantly higher than typically expected on a project of this type. Accordingly, MacViro is requesting an additional fee of \$33,625.00 for this additional work. Although additional costs are being incurred it is acknowledged that the City most likely realized best value for this equipment through the competitive tendering process. As such, City staff concur with the extra costs as being fair and reasonable. The equipment as eventually provided has been operating well.

Based on the above, it is requested that Purchase Order 6012548 be amended for an additional \$665,015.96 net of all taxes (\$673,794.17 net of GST and HST Recoveries).

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