

**Contract Award – Sole Source Purchase Order
Filter Rehabilitation Phase II
Island Water Treatment Plant**

Date:	September 26, 2008
To:	Public Works and Infrastructure Committee
From:	General Manager, Toronto Water Acting Director, Purchasing and Materials Management
Wards:	Ward 28 – Toronto Centre Rosedale
Reference Number:	P:\2008\Cluster B\TW\pw08017

SUMMARY

The purpose of this report is to seek authority to issue a sole source purchase order for the supply, delivery and installation of new filter underdrains, filter media, and associated piping and appurtenances for filters #2, #4 and #6 at the Island Water Treatment Plant (“Island WTP”) to Anthratch Western Inc. (AWI).

RECOMMENDATIONS

The General Manager of Toronto Water and the Acting Director of Purchasing and Materials Management recommend that:

1. City Council grant authority for the reallocation of funds in the amount of \$1,200,000.00 net of GST to CPW043-06 - Emergency Filter Media Replacement from CPW537-05 - Easement Acquisition, as outlined in the Financial Impact Statement. Funding is included in the approved 2008 Toronto Water Capital Budget. The cash flow and project cost is to be reallocated as follows: \$1,200,000.00 net of GST in 2008.
2. Subject to approval of Recommendation 1, the General Manager of Toronto Water be authorized to retain on a sole source basis, Anthratch Western Inc. for the supply, delivery and installation of new filter underdrains, filter media, and associated piping and appurtenances for filters #2, #4 and #6 at the Island WTP in such a manner and on such terms and conditions as he considers appropriate in the circumstances, in an aggregate amount not to exceed \$3,455,361.80 net of GST and inclusive of contingency, and be further authorized to enter into and execute an agreement on terms and conditions satisfactory to the General Manager and in a form satisfactory to the City Solicitor.

FINANCIAL IMPACT

The total potential contract award identified in this report is \$3,628,130.00 including all applicable charges, taxes and contingency. The potential cost to the City is \$3,455,361.80 net of GST inclusive of a 10% contingency allowance. This project is included in the approved 2008 Toronto Water Capital Budget in WBS Element CPW043-06 - Emergency Filter Media Replacement. However, at this time, the uncommitted cash flow is insufficient and additional cash flow authority is required to meet these commitments. The cash flow requirements for this project are \$2,000,000.00 in 2008 and \$1,455,361.80 in 2009, all net of GST.

The engineering estimate for this project was \$3,200,000.00 net of GST.

The additional cash flow and project cost (all net of GST) is to be reallocated from approved 2008 capital projects (with net impact of \$0 on the 2008 Approved Budget and 2008-2012 5-year plan) as follows:

	2008 (net of GST)	2009 (net of GST)
Reallocate from: CPW537-05- Easement Acquisition	\$ 1,200,000.00	
CPW043-06 - Island WTP Emergency Filter Media Replacement	\$ 800,000.00	\$ 1,455,361.80
Total Annual Cash Flow / Project Cost for CPW043	\$ 2,000,000.00	\$ 1,455,361.80

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

In January 2008, there was an immediate requirement to rehabilitate filters #1, #3 and #5 at the Island WTP as significant deterioration resulted in the removal of the facility from service for two months.

The underdrains for filters #1, #3 and #5 at the Island WTP were replaced with AWI filter underdrain systems through an Emergency Sole Source procurement process in February of 2008 in accordance with Section 195-10(F), Municipal Code, Chapter 195, and reported to the Public Works and Infrastructure Committee meeting of June 4, 2008. All work was successfully completed by June 2008. A link to the staff report is as follows:

<http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-13480.pdf>

The remaining three (3) filter underdrain systems (filters #2, #4 and #6) have been subjected to the same life cycle and service conditions as the failed filters. These underdrains and associated piping and appurtenances need to be replaced as soon as possible to prevent a similar failure.

In addition, at its meeting of June 23 and 24, 2008, City Council adopted a motion approving AWI as the sole supplier of filter underdrains, including all materials, equipment, components, and related services, for the F.J. Horgan WTP capacity expansion. A link to the staff report is as follows:

<http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-13479.pdf>

ISSUE BACKGROUND

The Island WTP is one of Toronto's four (4) water treatment facilities which supply potable water to the City of Toronto and the Regional Municipality of York. In addition, the Island WTP is the sole facility capable of supplying Deep Lake Water Cooling (DLWC) with cold (4° C) water between the months of April and December (The R.C. Harris WTP can provide this supply from January to March if the Lake is sufficiently cold). The Island WTP is capable of producing up to 410 Million Liters per day (MLD), and uses six dual media filters (sand and anthracite) to remove particulate matter from the process stream through chemically assisted filtration.

During regular filter inspections it was discovered in early January of 2008, that a substantial amount of filter media (sand and anthracite) had been lost from filter #5 at the Island WTP. Investigation revealed that the clay filter drain tiles adjacent to the west (or outside) wall of the filter had completely failed and media had been allowed to pass through to the clear well. While at no time was water quality compromised, this represented a major failure of the filter. Further investigation indicated that underdrain tiles in filters #1 and #3 were cracked in a similar location to those in filter #5 and were in danger of experiencing a similar failure. As a result, it was necessary to carry out a major rehabilitation of the three filters at the Island WTP.

Due to the requirement for the Island WTP to be able to supply potable water to the City of Toronto and York Region for residential, commercial, and fire fighting purposes, as well as in relation to the DLWC Project, it was necessary to have five (5) filters at the Island operational by May, 2008 and all six (6) filters by June, 2008. Therefore, the required rehabilitation of filters #1, #3 and #5 was deemed an emergency condition due to the very short time period required to carry out the work. As a result, a competitive tender process was not feasible.

After a review of options for supply of new filter underdrains and associated equipment and appurtenances, taking into account requirements for optimized high-rate filter performance, a proven and reliable filtration system, and extremely tight delivery schedules, the City's engineering consultant on the project, CH2M Hill, recommended that the City install a filter underdrain system produced by AWI. The City, after careful review, concurred with the recommendation and secured supply of the necessary materials and equipment from AWI for filters #1, #3 and #5 through an Emergency Sole Source procurement process.

The remaining three filter underdrain systems (filters #2, #4 and #6) have been subjected to the similar life cycle and service conditions as the failed filters. Filter #6 has shown some indication of reduced performance and a temporary repair was made to a portion of its underdrain tiles due

to signs of cracking. These underdrains and associated piping and appurtenances need to be replaced as soon as possible to prevent a similar failure.

COMMENTS

In a water treatment facility, the filtration process is the most important physical barrier in removing dangerous micro organisms from the water supply. Underdrain systems are extremely critical components of the filtration process and are essential to water treatment as they are a permanent structure that supports filter media. They are fundamental and highly engineered structures that ensure even water flow distribution through the filter media, thereby facilitating the production of high quality filtered water. They also allow for proper water and air flow distribution during filter backwash, which is required in order to ensure that the filters are well cleaned, while minimizing filter media loss.

To provide water production in relation to the Deep Lake Water Cooling Project and to meet consumer water demand, including the demand for fire protection, in the City of Toronto and the Region of York, it is necessary that all six (6) filters at the Island WTP be operational by May of 2009. Based on the cost of repairing the first three (3) filters, which was assessed by CH2M Hill and deemed reasonable, the pricing received from AWI represents excellent value to the City and matches engineering estimates. AWI is an experienced and competent firm, with a strong track record of excellent service.

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