

Amendments to Two Purchase Orders for the Construction of HVAC Rehabilitation and Upgrades at R.C. Harris and Island Water Treatment Plants

Date: November 21, 2023

To: General Government Committee

From: General Manager, Toronto Water and Chief Procurement Officer

Wards: 10, 20

SUMMARY

The purpose of this report is to request authority from the General Government Committee to amend purchase orders related to the HVAC rehabilitation and upgrades being carried out at the R.C. Harris and Island Water Treatment Plants (WTP).

These amendments are required for additional construction administration services to accommodate the revised construction schedules submitted by the general contractor.

Since the start of construction, the schedule was extended several times due to change orders issued to address added scope related to unforeseen site conditions and associated design changes. The schedule was further impacted by constraints caused by COVID-19 and longer equipment delivery timelines due to the global supply chain disruption.

Additional scope was required to address unforeseen site conditions (e.g., structural modifications to site facilities, natural gas piping, and asbestos testing and abatement) and additional efforts to solve issues related to heritage site requirements at the R. C. Harris.

The amendments requested total \$1,642,990 (net of HST recoveries) and would increase the current value of two (2) purchase orders.

RECOMMENDATIONS

The General Manager, Toronto Water and the Chief Procurement Officer, recommend that:

1. General Government Committee in accordance with Section 71-11.1.C of the City of Toronto Municipal Code Chapter 71 (Financial Control By-Law), grant authority to the General Manager, Toronto Water to amend Purchase Order Number 6041895 with CH2M Hill Canada Limited, for construction administration services for the rehabilitation and upgrades of HVAC at R. C. Harris and Island water treatment plants, to increase the overall value by \$314,573 net of all applicable taxes and charges (\$320,110 net of HST recoveries).

2. General Government Committee in accordance with Section 71-11.1.C of the City of Toronto Municipal Code Chapter 71 (Financial Control By-Law), grant authority to the General Manager, Toronto Water to amend Purchase Order Number 6050318 with Alberici Constructors Ltd. for construction services for the rehabilitation and upgrade of HVAC at R.C. Harris and Island water treatment plants, to increase the overall value by \$1,300,000 net of all applicable taxes and charges (\$1,322,880 net of HST recoveries).

FINANCIAL IMPACT

Amendment of Purchase Order Number 6041895 by an additional \$314,573 net of all taxes and charges (\$320,109 net of HST recoveries), will increase the purchase order value from \$1,231,856 to \$1,546,429 net of all taxes and charges (\$1,253,537 to \$1,573,646 net of HST recoveries).

Amendment of Purchase Order Number 6050318 by an additional \$1,300,000 net of all taxes and charges (\$1,322,880 net of HST recoveries), will increase the purchase order value from \$19,558,275 to \$20,858,275 net of all taxes and charges (\$19,902,501 to \$21,225,381 net of HST recoveries).

The requested amendments total \$1,642,990 net of HST recoveries. Forecasted expenditures will be funded from the 2023 Approved Capital Budget and 2024-2032 Approved Capital Plan as shown in Table 1 below.

Table 1: Financial Impact Summary (net of HST recoveries)

WBS Element (description)	2023	2024	Total
CPW061 (Harris F.P. Equip. R&R)	\$556,050	\$539,276	\$1,095,326
CPW064-22 (Plantwide HVAC Upgrades)	\$353,025	\$194,639	\$547,664
Total	\$909,075	\$733,915	\$1,642,990

The Interim Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

Bid Committee adopted Item Number BD31.1 at its meeting held on June 17, 2015, authorizing the award of Request for Proposal Number 9117-14-7251 to CH2M Hill Canada Limited for Engineering Services for HVAC Rehabilitation & Upgrades at the R.C. Harris Filtration and Island Water Filtration Plants in the amount of \$1,284,333 net of all taxes and charges. A link to the related Bid Committee decision is provided.
<https://secure.toronto.ca/council/agenda-item.do?item=2015.BD31.1>

The contract commitments to CH2M Hill Canada Limited under this award consist of three (3) purchase orders in total. Purchase Order Number 6041894 for design services in the amount of \$420,833; Purchase Order Number 6041895 for construction administration services in the amount of \$818,260; and Purchase Order Number 6041896 for post-construction services in the amount of \$ 45,240 net of all taxes and charges. On November 23, 2022, Purchase Order Number 601895 was amended by \$413,596 increasing the value from \$818,260 to \$1,231,856 net of all taxes and charges.

Bid Award Panel adopted Item Number BA64.5 at its meeting held on January 29, 2020, authorizing the award of Tender Call Number 87-2019 Contract Number 18TW-CTS-24CWD to Alberici Constructors Ltd. for HVAC Rehabilitation and Upgrades at the R. C. Harris and Island Water Treatment Plants in the amount of \$19,558,276 net of all applicable taxes and charges. A link to the related Bid Award Panel decision is provided.
<https://secure.toronto.ca/council/agenda-item.do?item=2020.BA64.5>

Attachment 1 provides a summary of purchase orders issued to CH2M Hill Canada Limited and Alberici Constructors Ltd.

COMMENTS

1. Background

The R.C. Harris WTP was constructed in the 1930s, opened in 1941 and is located at 2701 Queen Street East at Victoria Park Avenue. It is the largest water treatment plant in Toronto, produces approximately 30 percent of Toronto's drinking water and can produce 950 million litres per day. The R.C. Harris WTP is a national historic civil engineering site, a designated historical building and has been featured in many film, fashion, and television productions. It has an active Public Advisory Committee that meets to discuss important community issues, such as upgrades, security, and heritage conservation.

The Island WTP was built in 1977 and is located on Centre Island. It produces approximately 20 percent of Toronto's drinking water and can produce 440 million litres

per day. The Island WTP also provides Enwave with cold water for its heat exchange system used to cool buildings in the downtown core. When the Island WTP is out of service, the R.C. Harris WTP can provide service to the Enwave system.

Toronto Water's approved 2023 Capital Budget and 2024-2032 Capital Plan includes \$69.6 million for the R.C. Harris WTP rehabilitation program and \$157.1 million for the Island WTP rehabilitation program. The purpose of these programs is to ensure regulatory requirements are continually met, maintain infrastructure in a state of good repair, to accommodate growth and improve service.

The HVAC Rehabilitation and Upgrades project at the R.C. Harris and Island WTPs is one of several projects being carried out under these programs. The work being conducted renews and replaces equipment and control systems to meet current HVAC standards and regulations for a water treatment setting. Key considerations of this work include compliance, efficiency, optimized operational conditions, and air quality.

2. Project Delays Related to COVID-19

In the spring of 2020, the City of Toronto reviewed the list of essential workplaces and services issued by the Province of Ontario on March 23, 2020 and April 3, 2020. City-led infrastructure construction was deemed essential and important construction on City water and transportation infrastructure and City facilities was allowed to proceed. The City considered the management of existing construction contracts a priority and made arrangements to have these projects appropriately staffed to ensure adequate project management and construction administration services (including from contracted consultants) were in place for these projects.

It was stressed that the health and safety of all workers associated with the delivery of these projects was of paramount importance. The unprecedented circumstances associated with the COVID-19 pandemic emphasized the importance of ensuring the protection of the health and safety of all workers. Revised protocols and restrictions were put in place to help ensure the health and safety of workers.

As a result, many construction contracts experienced delays. For example, slower work due to COVID-19 restrictions; delay of material or equipment supplied by others tied to COVID-19 restrictions and staff testing positive resulting in site shut down. There was also additional requirements for Personal Protective Equipment (PPE), hand washing and sanitization stations which in some cases resulted in slower work.

3. Amendment of Purchase Order Number 6041895 with CH2M Hill Canada Limited

This purchase order is for construction administration services related to the HVAC Rehabilitation and Upgrades at the R.C. Harris and Island WTPs.

On March 16, 2020, an Order to Commence work was issued to the general contractor, Alberici Constructors Ltd. The schedule submitted by Alberici Constructors Ltd showed a contract duration of 24 months with completion scheduled on March 16, 2022.

Since the start of construction, the schedule was extended several times due to change orders issued to address added scope related to unforeseen site conditions and associated design changes as shown in Table 2. The schedule was further impacted by the constraints due to COVID-19 and longer equipment delivery timelines due to the global supply chain disruption.

Table 2 - Construction Schedule Extensions

	Substantial Completion	Schedule Impact (days)	Description	Reason
1	Apr 1, 2022	12	Site mobilization	Added scope and COVID-19
2	Aug 19, 2022	100	Island - Intake building duct and electrical modifications	Added scope and supply chain disruption
3	Jan 20, 2023	100	R.C. Harris - Service and admin building fan and control panel	Added scope and supply chain disruption
4	May 31, 2023	90	R.C. Harris - Filter building automation system modifications	Added scope and supply chain disruption
5	Oct 13, 2023	97	R.C. Harris - RMF Building ventilation modifications	Added scope

As a result, in November 2022, Purchase Order Number 601895 was amended by \$413,596 increasing the value from \$818,260 to \$1,231,856 net of all taxes and charges.

In July 2023, CH2M Hill Canada Limited advised that there would be additional services required to accommodate a further revised construction schedule submitted by Alberici Constructors Ltd. for their work at R.C. Harris and Island WTPs. The current construction schedule submitted by Alberici indicates that project substantial completion and final completion dates are February 26, 2024, at the R.C. Harris WTP and April 1, 2024, at the Island WTP.

The additional services required by CH2M Hill Canada Limited include: (i) an additional 38 weeks of full-time resident site inspection and construction administration services from July 10, 2023, to April 1, 2024, at \$6,363 per week; (ii) an additional 30 weeks of the heritage architecture subconsultant to continue heritage architectural inspection efforts from September 4, 2023, to April 1, 2024, at \$875 per week; and (iii) adjustments required to the testing and commissioning services. The total cost for these additional services is \$314,573 net of all taxes and charges.

4. Amendment of Purchase Order Number 6050318 with Alberici Constructors Ltd.

This purchase order is for construction services related to HVAC rehabilitation in the R.C. Harris and Island WTPs.

Additional scope was required to address unforeseen site conditions (e.g., structural modifications to site facilities, natural gas piping, and asbestos testing and abatement), and additional efforts to solve issues related to heritage site requirements at the R. C. Harris. Some examples of this additional scope are as follows:

Structural Modification to Site Facilities. Structural modifications to install boiler exhaust piping in the administration building of R.C. Harris WTP were required. During construction, scanning of the slabs prior to core drilling indicated potential loss of reinforcing bars and potential structural weakening at the chase if the piping were to be installed as proposed. Additional work was required to reinforce the slabs at the first floor, second floor and roof slab by constructing steel beams and properly fireproofing of the new beams. The cost of this additional work was \$58,272.

Natural Gas Piping. Installation of new natural gas piping in Residue Management Facility (RMF) building at the R.C. Harris WTP. The scope of work for this installation was originally included contract 18ECS-MI-01HA, however, due to schedule changes in both contracts and the order in which work needed to be done, the scope was transferred to Contract 18TW-CTS-24CWD. The cost of this additional work was \$234,854.

Asbestos Testing and Abatement. Additional asbestos testing and abatement was required during construction in areas containing asbestos materials, particularly when those materials were being removed, encapsulated, or repaired. Abatement is needed in order to protect construction workers and City staff from the negative health impacts of asbestos. Due to the age of the R.C. Harris and Island WTPs, the buildings contain asbestos used in spray-applied flame retardant, thermal system insulation, and in a variety of other materials. The cost of this additional work was \$175,184.

Heritage Site Requirements at the R. C. Harris WTP. The original scope of work at R.C. Harris WTP included the motorization ventilation dampers in the filter building. The original design specified access to the dampers for installation and future maintenance from the inside of the Filter Gallery through retrofitting the internal fixed concrete louvers with mechanical fasteners (hinges, slide bolts), to facilitate opening and access. After removal of the louvers, it became clear that this approach would not be practical, and access would be required from the filter building roof. This required the concrete louvers to be reinstalled permanently and modifications to the external copper grilles to allow ready access from the outside. The enhancement of the outdoor copper louvers was in keeping with the heritage characteristics of the building. The cost of this additional work was \$192,523.

The project team reviewed the quotations received for the additional work and found them to be reasonable compared to prices received for work of similar scope and scale.

As a result of these additional efforts, the City's project team would like to amend the purchase order to add \$1,300,000 net of all taxes and charges to the project. This amendment is required to adequately cover the remaining risk over the extended duration of the construction.

CONTACT

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SIGNATURE

Lou Di Gironimo
General Manager, Toronto Water

Geneviève Sharkey
Chief Procurement Officer

ATTACHMENTS

1. Summary of Purchase Orders issued to CH2M Hill Canada Limited and Alberici Constructors Ltd.

Attachment 1 - Summary of Purchase Orders issued to CH2M Hill Canada Limited and Alberici Constructors Ltd. (net of all taxes and charges)

Award of Request for Proposal No. 9117-14-7251 to CH2M Hill Canada Limited for Engineering Services for HVAC Rehabilitation and Upgrades at the R.C. Harris Filtration and Island Water Filtration Plants

Authority: Bid Committee Meeting BD31.1, held June 17, 2015 Adopted

Purchase Order	Description	Original Amount	Amendment No.1 (Nov. 2022)	Current Amount	Proposed Amendment	Revised Amount
6041894	Design Services	\$420,833		\$420,833		\$420,833
6041895	Construction Administration Services	\$818,260	\$413,596	\$1,231,856	\$314,573	\$1,546,429
6041896	Post-Construction Services	\$45,240		\$45,240		\$45,240
	Total (Net of all taxes and charges)	\$1,284,333	\$413,596	\$1,697,929	\$314,573	\$2,012,502

Award of Request for Tender (RFT) No. 87-2019 Contract 18TW-CTS-24CWD to Alberici Constructors Ltd. for HVAC Rehabilitation and Upgrades at the R.C. Harris and the Island Water Treatment Plants

Authority: Bid Award Panel Meeting held January 29, 2020, Item BA64.5 Adopted

Purchase Order	Description	Original Amount		Current Amount	Proposed Amendment	Revised Amount
6050318	Construction Services	\$19,558,276		\$19,558,276	\$1,300,000	\$20,858,276
	Total (Net of all taxes and charges)	\$19,558,276		\$19,558,276	\$1,300,000	\$20,858,276