

Amendment of Purchase Order No. 6048934 to GHD Limited for the Provision of Professional Services for Humber Treatment Plant Rehabilitation and Upgrades

Date: February 14, 2022

To: Infrastructure and Environment Committee

From: General Manager, Toronto Water Division and Chief Procurement Officer

Wards: Ward 3 – Etobicoke-Lakeshore

SUMMARY

The purpose of this report is to request the authority to amend Purchase Order Number 6048934 issued to GHD Limited for the Provision of Professional Services for Humber Treatment Plant Rehabilitation and Upgrades awarded under Request For Proposal Number 9117-18-7205.

The project is near the end of the detailed design phase and due to the change orders issued to date, the project contingency amount is almost depleted. The Purchase Order Amendment is required in order to replenish the project contingency, mitigate risk and address any unforeseen issues during the construction.

The total value of the Purchase Order Amendment being requested is \$550,000 net of all taxes and charges (\$559,680 net of HST recoveries),, revising the current purchase order value from \$6,982,660 net of all taxes and charges (\$7,105,555 net of HST recoveries) to \$7,532,660 (\$7,665,235 net of HST recoveries) net of all taxes and charges.

RECOMMENDATIONS

The General Manager of Toronto Water and Chief Procurement Officer recommend that

1. The Infrastructure and Environment Committee, in accordance with section 71-11.1C of the City of Toronto Municipal Code Chapter 71 (Financial Control Bylaw), grant authority to amend Purchase Order No. 6048934 with GHD Limited for Professional Services for Humber Treatment Plant Rehabilitation and Upgrades by an additional amount of \$550,000 net of all taxes and charges (\$559,680 net of HST recovery), revising the current purchase order value from \$6,982,660 net of all taxes and charges (\$7,105,555 net of HST recovery) to \$7,532,660 net of all taxes and charges (\$7,665,235 net of HST recovery).

FINANCIAL IMPACT

Amendment of Purchase Order No. 6048934 by an additional amount of \$550,000 net of all taxes and charges, \$621,500 including taxes (\$559,680 net of HST recovery) will increase the current purchase order value from \$6,982,660 net of all taxes and charges, \$7,890,406 including taxes (\$7,105,555 net of HST recovery) to \$7,532,660 net of all taxes and charges, \$8,511,906 including taxes (\$7,665,235 net of HST recovery).

Funding is included in the Toronto Water 2022 Approved Capital Budget and 2023-2031 Approved Capital Plan as summarized in Table 1 below.

Table 1 - Financial Impact Summary

WBS Element	Description	2022	2023	2024	Total (net of HST recovery)
CWW037-18	Service Rehab and Upgrades	\$200,000	\$200,000	\$159,680	\$559,680

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

DECISION HISTORY

Bid Award Panel adopted Item No. BA22.6 at its meeting held on April 24, 2019, thereby authorizing the award of Contract TW-CWD-19-05604, RFP No. 9117-18- 7205 for Humber Treatment Plant Rehabilitation and Upgrades to GHD Limited, in the amount of \$6,232,660 net of all taxes and charges, from the date of award for a 248 week period. The Bid Award Panel decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.BA22.6>

Purchase Order 6048934 to GHD Limited was issued in the amount of \$6,232,660 net of all taxes and charges.

Infrastructure and Environment Committee adopted Item No. 2020.IE14.1 at its meeting held on July 9, 2020, thereby authorizing amendment of the purchase order No. 6048934 with GHD Limited for Professional Services for Humber Treatment Plant Rehabilitation and Upgrades by an additional amount of \$750,000 net of all taxes and charges.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.IE14.1>

On July 16, 2020 Purchase Order Number 6048934 was revised from \$6,232,660 net of all taxes and charges (\$6,342,355 net of HST recovery) to \$6,982,660 net of all taxes and charges (\$7,105,555 net of HST recovery).

COMMENTS

1. Humber Treatment Plant Rehabilitation and Upgrade Project

The Humber Treatment Plant (HTP) is one out of four (4) wastewater treatment plants serving the City of Toronto. The HTP is a secondary treatment facility located on 45.3 hectares at the mouth of the Humber River. The HTP services a population of approximately 651,000 in the west portion of the City and a small portion of the City of Mississauga. The plant is rated at an average day flow of 473,000 m³/day and operates continuously throughout the year.

The City has embarked on a comprehensive project to rehabilitate and upgrade plant wide process and maintenance support services at the HTP and has retained GHD Limited to provide professional services related to this project. The scope of work includes all the engineering services related to design, construction and post-construction engineering services for upgrades to the following existing facilities and processes:

- a) Plant-wide hot water system;
- b) Plant-wide HVAC system
- c) Digesters;
- d) Sludge thickening;
- e) South primary;
- f) Head house;
- g) North grit;
- h) Rehabilitation and transformation of the old substation into a workshop;
- i) Secondary Treatment; and
- j) Miscellaneous related upgrades.

The duration of this project is currently estimated at five (5) years (2019-2025) allowing two (2) years for design and three (3) years for construction.

2. Amendment of Purchase Order No. 6048934 to GHD Limited

Work on this project began in 2019 and is currently at the 90% detailed design phase. The construction tender is planned to be issued in May 2022.

The total value of contingencies and allowances under Purchase Order 6048934 issued to GHD Limited is \$1,407,000 net of all taxes (20% of the original purchase order value) for both design and construction phases. Contingency allowances support a project's overall risk management strategy by making an allowance for any cost changes. These pre-determined sums or percentage allowances are included in the cost estimate to allow for unpredictable changes in the project. The City holds the budget for use by the designers to ensure that all desired scope is covered.

Since the start of work, change orders have been issued for additional scope totalling \$1,175,935 net of all taxes. The most significant changes were as follows:

(i) Additional Services Related to the New North Boiler Building

The base scope of work included replacement of the existing boilers located in the North Boiler Building with larger capacity boilers in order to meet the plant's demand. During preliminary design, after the new boiler selection, it was concluded that the existing North Boiler Building is too small to accommodate the new boilers and a new building is required. The final cost of this additional work is \$511,196 net of all taxes and includes professional services for both design and construction phases.

(ii) Additional Services Related to Air Handling

In order to improve monitoring of the Humber Treatment Plant (HTP) systems it is necessary to upgrade and integrate the Engine House with a new, plant wide Building Automation System (BAS). The Engine House heating and ventilation system is a complex system with large quantities of ventilation and heating equipment. A new BAS was required with hardwired safety including combustible gas detection and fire alarm interlocks, and software interlocks for various fan settings. The cost of this additional work is \$179,414 net of all taxes and includes professional services for both design and construction phases.

(iii) Additional Services Related to Structural Upgrades

Structural upgrades were required to provide access to additional five roof locations. The cost of this additional work is \$151,782 net of all taxes and includes professional services for both design and construction phases.

(iv) Additional Services Related to Digester Gas System Modifications

The project base scope included replacement of the gas compressors, however each gas compressor is supplied by a different manufacturer and it is installed on a skid. The plant operation and maintenance requested that all compressors to be provided by the same manufacturers. The compressor skids had to be replaced entirely, a new digester gas chilling system was provided as well as a new biogas sampling system. The cost of the additional work is \$153,435 net of all taxes.

(v) Provisional Items

Provisional items are an optional feature to provide pricing information for additional items that may or may not be required later. Often, they are used at a later date to provide pricing for change orders. The cost of additional work related to change orders issued using provisional items is \$180,108 net of all taxes.

(vi) New Change Orders

There are 15 potential change order under review by the project team. The change orders are related to equipment that is not installed at the location shown on the drawings provided with the RFP or equipment that required relocation as a result of Arc Flash studies. The total cost of the 15 potential change orders is \$200,000 net of all taxes. If it is determined that all 15 potential change orders are required, only \$31,000

net of all taxes in contingencies and allowances will remain available for future change orders.

Given that the project is near the end of the detailed design phase and due to the change orders issued to date, the project contingency amount is almost depleted. A Purchase Order Amendment is required in order to replenish the project contingency, mitigate risk and address any unforeseen issues during the construction phase.

The original amount allocated to contingencies and allowances for the construction phase was \$375,000. However, given the estimated value of the construction is now higher than the original estimate, it is recommended that the value allocated to contingencies and allowances be increased by \$550,000 net of all taxes to \$1,957,000 net of all taxes (28% of the amended purchase order value).

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SIGNATURE

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