

Amendment to Purchase Order Number 6040785 for Professional Engineering Services for Replacement of the Pumping System and Other Existing Equipment for the Western Beaches Tunnel Project

Date: May 15, 2023

To: General Government Committee

From: Interim Chief Engineer and Executive Director, Engineering and Construction Services and Chief Procurement Officer, Purchasing and Materials Management

Wards: 4 (Parkdale-High Park) and 10 (Spadina-Fort York)

SUMMARY

The purpose of this report is to request authority to amend Purchase Order Number 6040785, awarded under Request for Proposal 6717-14-7168, issued to Stantec Consulting Limited, for professional engineering services for the replacement of the pumping system and other existing equipment for the Western Beaches Tunnel project.

The total value of the Purchase Order Amendment being requested is \$377,854 net of all applicable taxes and charges (\$384,504 net of Harmonized Sales Tax recoveries), revising the current Purchase Order value from \$1,943,859 net of all applicable taxes and charges (\$1,978,071 net of Harmonized Sales Tax recoveries) to \$2,321,713 net of all applicable taxes and charges (\$2,362,575 net of Harmonized Sales Tax recoveries).

The requested amendment is for professional engineering design services to modify the pumping system design work originally completed in 2018. The modifications are required to allow for more advanced pumps with greater functionality which are better suited to the operating conditions of the Western Beaches Tunnel. The amendment also includes a contingency allowance should additional work be required during the detailed design process.

RECOMMENDATIONS

The Interim Chief Engineer and Executive Director, Engineering and Construction Services and the Chief Procurement Officer, Purchasing and Materials Management recommend that:

Amendment to Purchase Order Number 6040785 with Stantec Consulting Limited for Professional Engineering Services for Replacement of the Pumping System and Other Existing Equipment for the Western Beaches Tunnel Project

1. The General Government 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 6040785 with Stantec Consulting Limited, for professional engineering services for Replacement of the Pumping System and Other Existing Equipment for the Western Beaches Tunnel project by increasing the value by \$377,854 net of all applicable taxes and charges (\$384,504 net of Harmonized Sales Tax recoveries), from \$1,943,859 net of all applicable taxes and charges (\$1,978,071 net of Harmonized Sales Tax recoveries) to \$2,321,713 net of all applicable taxes and charges (\$2,362,575 net of Harmonized Sales Tax recoveries).

FINANCIAL IMPACT

The total value of the Purchase Order Amendment identified in this report is \$377,854 net of all taxes and charges (\$384,504 net of Harmonized Sales Tax Recoveries).

Funding is included in Toronto Water's Approved 2023 Capital Budget and 2024-2032 Approved Capital Plan. Funding details with forecasted expenditures (net of Harmonized Sales Tax recoveries) are summarized in Table 1 below:

Table 1: Financial Impact Summary of Purchase Order Number 6040785

WBS Element	Description	2023	2024	Total (net of Harmonized Sales Tax recoveries)
CWW457-01	Western Beaches Tunnel Retrofit	\$250,000	\$134,504	\$384,504

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

DECISION HISTORY

At its meeting held on November 19, 2014, the Bid Award Panel adopted the recommendations in the staff report from the Acting Director of Purchasing and Materials Management dated November 19, 2014 and approved Item BD208.1 Award of Request for Proposal Number 6717-14-7168 to Stantec Consulting Limited to provide Professional Engineering Services for Design and Construction Related to Replacement of the Pumping System and Other Existing Equipment for the Western Beaches Tunnel project. A copy of the Bid Award Panel document can be found at: <https://secure.toronto.ca/council/agenda-item.do?item=2014.BD208.1>

At its meeting held on April 10, 2019, the Bid Award Panel adopted the recommendations in the staff report from the Chief Financial Officer, Purchasing and Materials Management dated April 3, 2019 and approved Item BA20.9, authorizing award of Tender Call Number 292-2018 to ASCO Construction (Toronto) Limited for the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations Contract 17ECS-MI-01DC. The project includes the complete supply of all materials, labour and equipment for modifications to numerous sewer chambers and other alterations related to the Western Beaches Tunnel project. A copy of the Bid Award Panel Document can be found at: <https://secure.toronto.ca/council/agenda-item.do?item=2019.BA20.9>

At its meeting held on November 5, 2020, the Infrastructure and Environment Committee adopted the recommendations in the staff report from the Chief Procurement Officer of Purchasing and Materials Management dated October 22, 2020 and approved Item IE17.1 Amendment to Purchase Order Number 6048827 for the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations Project and Amendment to Purchase Order Number 6046087 for Contract Administration Services. A copy of the Infrastructure and Environment Committee document can be found at: <https://secure.toronto.ca/council/agenda-item.do?item=2020.IE17.1>

COMMENTS

Background

The Western Beaches Tunnel system (with a combined storage volume of 85,000 cubic meters) was constructed in the early 2000s and consists primarily of a 3-metre diameter and 3.5-kilometre-long tunnel; three 25-metre diameter storage shafts ranging from 40 metres to 50 metres in depth; a pumping station; and an ultra-violet disinfection building. This system collects and treats stormwater and combined sewer overflow, protecting water quality along the city's waterfront.

Following initial operation of the system, Toronto Water operations staff identified pumping system and sedimentation issues. Stantec Consulting Limited was retained in November 2014, for engineering services to correct the identified issues. The engineering services included preliminary and detailed design, services during construction, and post-construction services. After Stantec Construction Limited completed the project design, the construction work was originally tendered as a single project in 2018. Due to the received bids being well over the available budget, this Tender was subsequently cancelled.

After considering options with staff from Engineering and Construction Services and Toronto Water a decision was made to split this project into two phases.

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Phase 1 included sewer chamber modifications and related civil works. The Phase 1 construction contract commenced in 2019 following award to ASCO Construction Limited and substantial completion was achieved on July 31, 2021.

Phase 2 includes a full retrofit of the existing pumping station, with upgrades to the pumping, mechanical, electrical, and instrumentation systems.

Detailed Design Services for Additional Scope of Work for Phase 2

The Phase 2 pumping system retrofit was part of the original design work, delivered by Stantec in 2018. The pumping system design was based on limited commercially available pumps at that time, that could perform at the extreme 50 metre sump depth required. While the pump system design was the best option available at the time, subsequent City operational experience with similar pumps at another facility identified significant concerns related to potential pump vibration issues. As a result, a pumping system design review was requested by Toronto Water operations staff prior to tendering of the Phase 2 construction contract.

Stantec Consulting Limited completed a review of current pump models and prepared a Technical Memorandum which recommends a pumping system redesign for an alternate pump supplier to help mitigate the identified risks. This redesign is recommended to allow for an optimal range of pump operation and requires associated electrical and instrumentation control and process piping redesign prior to tendering the Phase 2 pump station retrofit work.

Purchase Order Amendment to Preliminary and Detailed Design Services PO#6040785

Stantec Consulting Limited's comprehensive knowledge and experience from the design and tender effort make Stantec Consulting Limited best suited to perform the pump system redesign work. Staff considered alternative options including retaining a separate consultant to complete the design revisions however staff concluded that the most cost-effective approach for the City was to amend the existing assignment to revise the pumping system design and the Phase 2 tender package. The City intends to issue a separate Request for Proposal for Contract Administration Services During Construction for the Phase 2 construction work.

Stantec Consulting Limited has submitted a quotation for an amount of \$277,854 (net of all taxes and charges) for the provision of additional engineering services. Staff from Engineering and Construction Services and Toronto Water have reviewed this quotation and believe the additional fees are reasonable.

A contingency allowance of \$100,000 (net of all taxes and charges) is also being recommended to provide for additional work that may be required for any unforeseen circumstances which may arise through to completion of detailed design. The total

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Purchase Order Amendment being requested is \$377,854 (net of all taxes and charges), which will increase the value of Purchase Order Number 6040785 from \$1,943,859 to \$2,321,713 net of all applicable taxes and charges.

CONTACT

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SIGNATURE

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