

Amendment to Purchase Order No. 6048827 for the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations Project and Amendment to Purchase Order No. 6046087 for Contract Administration Services

Date: October 22, 2020

To: Infrastructure and Environment Committee

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

Wards: 4 and 10

SUMMARY

The purpose of this report is to request authority to amend Purchase Order No. 6048827 with ASCO Construction (Toronto) Ltd., (ASCO) for the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations Project by \$4,138,367 net of all taxes (\$4,211,202 net of HST recoveries), revising the current contract value from \$17,983,000 to \$22,121,367 net of all taxes (\$22,510,703 net of HST recoveries).

This report also requests authority to amend Purchase Order No. 6086087 with Stantec Consulting Ltd., (Stantec) for additional contract administration services for the Western Beaches Tunnel project by \$709,530 net of all taxes (\$722,018 net of HST recoveries), revising the current contract value from \$945,520 to \$1,655,050 net of all taxes (\$1,684,179 net of HST recoveries).

These amendments are required to address the schedule delay associated with design and construction sequencing changes due to extreme high lake level conditions and unforeseen site conditions found after the contract was awarded.

RECOMMENDATIONS

The Chief Engineer and Executive Director of Engineering and Construction Services and the Chief Procurement Officer recommend that:

1. The Infrastructure and Environment 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 amend Purchase Order No. 6048827 and amend the agreement with ASCO Construction (Toronto) Ltd., for the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations Project by the amount of \$4,138,367 (net of all taxes and charges), revising the current contract value from \$17,983,000 (net of all taxes and charges) to \$22,121,367 (net of all taxes and charges).

2. The Infrastructure and Environment 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 amend Purchase Order No. 6046087 and amend the agreement with Stantec Consulting Ltd., for the provision of additional contract administration services for the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations Project by an amount of \$709,530 (net of all taxes and charges), revising the current contract value from \$945,520 (net of all taxes and charges) to \$1,655,050 (net of all taxes and charges).

FINANCIAL IMPACT

Funding for these Purchase Order Amendments is included in the Toronto Water Approved 2020 Capital Budget and 2021-2029 Capital Plan. Funding details are summarized in Table 1 below (all values are net of HST recoveries).

Table 1. Projected Cash Flows for Amendments to Purchase Order Nos. 6048827 and 6046087

	Contract 17ECS-MI-01DC / RFP No. 6717-14-7168	
	WBS Element: CWW457-01 (Western Beaches Retrofit)	
Year	PO 6048827: Construction Work for the Western Beaches Tunnel	PO 6046087: Services During Construction for the Western Beaches Tunnel
2020	\$1,380,000.00	\$265,000.00
2021	\$1,935,000.00	\$365,000.00
2022	\$896,201.76	\$92,017.84
Total	\$4,211,201.76	\$722,017.84

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

DECISION HISTORY

At its meeting on April 10, 2019, the Bid Award Panel granted authority to award Contract 17ECS-MI-01DC, Tender Call 292-2018, for the construction of the Western Beaches Tunnel - Sewer Chamber Modifications and Other Alterations project to ASCO Construction (Toronto) Ltd., (ASCO) in the amount of \$17,983,000.00 (net of all applicable taxes and charges and \$18,299,501.00 net of HST recoveries), having

submitted the lowest compliant bid and meeting the specifications in conformance with the Tender requirements. A copy of the Committee Decision Document can be found at: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.BA20.9>

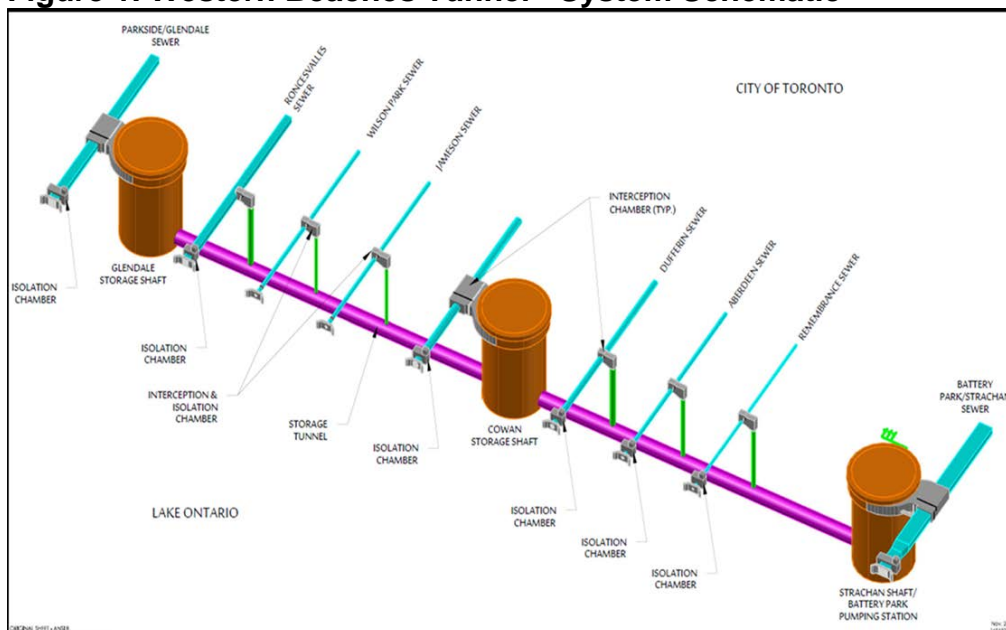
On November 19, 2014, Bid Committee adopted staff recommendations to grant authority to award RFP No. 6717-14-7168 to Stantec Consulting Ltd., being the highest scoring proponent meeting the RFP requirements, for engineering services for the review, assessment, design and construction administration for the Replacement of the Pumping System and Other Existing Equipment of the Western Beaches Tunnel project, in the amount of \$2,504,737.00 (net of all applicable taxes and charges and \$2,548,820.37 net of HST recoveries). A copy of the Decision Document can be found at: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.BD208.1>

COMMENTS

1. BACKGROUND

The Western Beaches Tunnel (WBT) system (refer to Figure 1) collects and treats combined sewer overflows (CSO) and stormwater from ten existing CSO and storm outfalls. Constructed in the late 1990's, the system consists of a 3 metre diameter, 3.6 kilometre storage tunnel parallel to Lake Ontario, from approximately Parkside Drive to Strachan Avenue, with three main storage shafts (approximately 25 metres diameter by 35 to 40 metres deep) located at the Battery Park, Cowan and Glendale sites, six drop shafts, ten sewer interception chambers, nine lake isolation chambers, and a pumping station with ultra-violet (UV) treatment. The system has an 85,000 cubic metre storage volume and was designed to improve water quality conditions at the City's nearby swimming beaches and along Toronto's waterfront.

Figure 1. Western Beaches Tunnel - System Schematic



Since the commissioning of the WBT in the late 1990's, Toronto Water has experienced several operational issues associated with lake water isolation, and the pumping and sediment management systems. Persistent ongoing problems with the WBT system include:

- Major leaking of lake water into the system around stop plates, flap gates and isolation plates;
- Surcharging of the WBT system resulting in surface flooding in local areas around the shaft locations.

To address the above ongoing problems with the WBT system, a Request for Proposal (RFP) No. 6717-14-7168 was issued for engineering services for the review, assessment, design and construction administration for the Replacement of the Pumping System and Other Existing Equipment of the Western Beaches Tunnel Project (Western Beaches Tunnel Upgrades Project). This RFP was awarded to Stantec Consulting Ltd., (Stantec) in November 2014.

The scope of work for the Western Beaches Tunnel Upgrades Project consists of two construction phases. The main work scope in each phase of this project is summarized as follows:

Phase 1 - modifications to 19 sewer chambers (located at the Parkside, Glendale, Roncesvalles, Wilson, Jameson, Cowan, Dufferin, Aberdeen, Remembrance and Strachan sewers) to: improve lake and sewer isolation systems; prevent flooding of the WBT system; and enable the next phase of construction work within the WBT system; and

Phase 2 - a complete pumping station retrofit and modifications to the WBT pumping, sediment management and UV systems at the Battery Park storage shaft site.

A construction contract for the Phase 1 work was awarded to ASCO Construction (Toronto) Ltd., (ASCO) and construction commenced in May 2019. As there are seasonal differences in lake levels, weather conditions and related sewer bypass and system overflow constraints, the work scope was divided into work elements better suited for summer work (defined in the Tender as occurring over the May 1st to October 31st period) and work elements better suited for winter work (defined as occurring over the November 1st to April 30th period). Successful completion of the project within the approximate 13.5 month period bid by ASCO for a construction schedule, spanning from May 7, 2019 to June 25, 2020, was dependent on the summer and winter work elements being completed within the defined seasonal periods.

2. ISSUES ARISING DURING CONSTRUCTION

A Purchase Order Amendment is being recommended to ASCO to address the additional scope of work and delays associated with unforeseen issues which arose after the start of construction. These issues are described as follows:

a) In the summer of 2019, after the start of construction, lake levels in Lake Ontario were extremely high. The lake levels rose to 76.2 metres above mean sea level which is 0.4 metres above the historical 100 year lake levels used in the design of the Western Beaches Tunnel Upgrades Project. In order to prevent lake water from overflowing into the Western Beaches Tunnel, a redesign to a new design elevation of 76.4 metres was required for the weirs, stop plates and isolation plates within all chambers.

b) The engineering design for the Phase 1 work drew on the as-built drawings, when the Tunnel was originally constructed, for existing physical details and dimensions. Certain measurements in the chambers could not be verified during design because they are normally submerged. As a result, ASCO was required to hire specialized divers to enter the chambers and take final measurements. Significant deviations from the as-built drawings were noted which required confirmation once the chambers could be fully drained (i.e. after the lake levels receded). These final measurements could not be completed until October 16, 2019. The final measurements confirmed the deviations, and the redesign work required for: widening and relocation of all stop plates; changes to the location and length of some weir walls; demolition of remnant concrete sewer walls; and raising of some chamber tops.

The redesign by Stantec and quotation for this extra work by ASCO was completed on May 18, 2020. The design changes and loss of the 2019/20 winter construction period necessitate a new construction sequencing approach that requires the contractor's schedule to be extended by 55 weeks until July 31, 2021. The contractor is entitled to costs, as per Division 1 - General Requirements of the contract, for this extended construction period. The costs include general contractor project management and administration staff, bonding, insurance and equipment such as site trailers, washrooms, and hoarding at all active sites. In addition, Stantec's construction administration services require an extension of 51 weeks to match the projected completion date of July 31, 2021.

Financial Impacts

ASCO submitted a Change Order Requisition dated September 14, 2020 for the amount of \$3,255,214.99 (net of all taxes and charges) in additional funds for extending its Division 1 costs as described above from July 11, 2020 to July 31, 2021. The additional costs are based on ASCO's original competitive bid for Division 1 extended over the additional 55 weeks. The costs are therefore considered to represent fair value to the City. Staff are also recommending to replenish the project contingency allowance by \$883,152 for any future unforeseen issues which may arise. This amendment to ASCO's Purchase Order No.6048827 would increase the overall contract value from \$17,983,000 to \$22,121,367 (net of all taxes).

Stantec's services during construction need to be extended to July 31, 2021, to match the revised project completion date. Stantec submitted a Change Order Requisition dated September 17, 2020 requesting a Purchase Order Amendment in the amount of \$709,530 (net of all taxes and charges), based on the provisional weekly rate for additional construction administration services included in Stantec's original Bid, to extend contract administration services during construction to July 31, 2021.

Staff are also recommending an additional project contingency allowance of \$92,547 to address any future unforeseen issues which may arise. With this amendment, Purchase Order No. 6086087 will be increased from \$945,520 to \$1,655,050 (net of all taxes).

CONTACT

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SIGNATURE

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