TORONTO

REPORT FOR ACTION

Award of Contract Number 20ECS-MI-01TW for the Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.L. Clark and F.J. Horgan Water Treatment Plants

Date: December 18, 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: 3 (Etobicoke-Lakeshore) and 25 (Scarborough-Rouge Park)

SUMMARY

The purpose of this report is to advise of the results of Request for Tender Number Doc2611519655, Contract Number 20ECS-MI-01TW, for the Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.L. Clark and F.J. Horgan Water Treatment Plants and request authority to award the contract to Alberici Constructors Limited, in the amount of $23,259,299 net of all applicable taxes and charges ($23,668,663 net of HST recoveries).

RECOMMENDATIONS

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

1. The Infrastructure and Environment Committee, in accordance with Section 195-8.4 of Toronto Municipal Code Chapter 195 (Purchasing By-Law), grant authority to award Contract Number 20ECS-MI-01TW, Request for Tender Number Doc2611519655 for Construction Services for the Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.L. Clark and F.J. Horgan Water Treatment Plants in the amount of $23,259,299 net of all applicable taxes and charges ($23,668,663 net of HST recoveries) to Alberici Constructors Limited, having submitted the lowest compliant bid and meeting the specifications in conformance with the Request for Tender requirements.

FINANCIAL IMPACT

The total value of the contract award for Contract Number 20ECS-MI-01TW, Request for Tender Number Doc2611519655, for Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.L. Clark and F.J Horgan Water Treatment Plant is $26,283,008 including HST and all applicable taxes. The cost to the City is $23,668,663 net of HST recoveries. The awarded amount includes a contingency allowance of $2,250,000 on the base scope of work to cover contingencies and/or additional work or services under the construction contract to address any unforeseen conditions which may arise during construction and is consistent with City practice.

Funding is included in the proposed 2021-2030 Capital Budget and Plan for Toronto Water. Funding details are provided in Table 1.

Table 1: Financial Impact Summary of Recommended Contract (Net of HST recoveries)

WBS Element and Description	2021	2022	2023	2024	**Total (Net of HST Recoveries)**
CPW070-05 WTP - plant wide	$5,000,000	$13,198,578	$3,163,951	$0	**$21,362,530**
CPW070-09 WTP - plant wide	$1,000,000	$625,000	$531,133	$150,000	**$2,306,133**
Total (Net of HST Recoveries)	**$6,000,000**	**$13,823,578**	**$3,695,084**	**$150,000**	**$23,668,663**

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

DECISION HISTORY

At its meeting of June 28, 2017, the Bid Award Panel granted authority to enter into an agreement with Associated Engineering (ON) Limited, for the provision of Provision of Engineering Services for the Design, Construction Administration and Post Construction Services for a Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.C Harris, R.L. Clark and F.J. Horgan Water Treatment Plants, being the highest scoring proponent meeting the requirements of Request for Proposal 9117-17-7043, in the amount of $2,142,488 net of all applicable taxes and charges ($2,180,196 net of HST recoveries). The total award value was made up of three (3) Purchase Orders: one for design, one for services during construction and one for post construction services.

The Bid Award Panel Decision Document can be found at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.BA29.3

At its meeting of May 9, 2019, City of Toronto Council granted authority to enter into a Memorandum of Understanding with the Regional Municipality of Peel and the Regional Municipality of Durham to undertake tasks and to share costs associated with the implementation and operation of a Lake Ontario based monitoring, information management, and forecasting system (the "Monitoring System"), covering the Lake Ontario based source waters for the water treatment plants of the three municipalities. The three municipalities will jointly develop, fund, administer and implement infrastructure, instrumentation, equipment and tools to monitor lake circulation and water quality and assist in forecasting impacts of contaminant spills which will guide emergency spills response and water treatment plant operations.

The Decision Document can be found at:
https://www.toronto.ca/legdocs/mmis/2019/ie/bgrd/backgroundfile-132934.pdf

COMMENTS

Background

Toronto Water operates four water treatment plants located along the waterfront, named from west to east as the R.L. Clark, Island, R.C. Harris and F.J. Horgan Water Treatment Plants, respectively. The plants draw raw water from Lake Ontario. The water is filtered and disinfected at the plants and then transmitted through an integrated system of pumping stations, storage reservoirs, transmission mains and water mains to residents, industry and commercial users across the City, and the southern portion of York Region.

The R.L. Clark Water Treatment Plant, located near Kipling Avenue and Lakeshore Boulevard West, commenced operation in 1968 and produces an average of 330 mega litres of potable water per day, with a maximum production capacity of 615 mega litres per day. The F.J. Horgan Water Treatment Plant, located near Lawrence Avenue and Kingston Road, became operational in 1979 and produces an average of 230 mega litres of potable water per day, with a maximum production capacity of 800 mega litres per day. The R.C. Harris Water Treatment Plant, located near Victoria Park Avenue and Queen Street East, was initially constructed in the 1930s and produces an average of 350 mega litres of potable water per day, with a maximum production capacity of 950 mega litres per day.

Three of the plants, namely the R.L. Clark, the R.C. Harris and F.J. Horgan Water Treatment Plants include Zebra Mussel Control Systems at their raw water intakes. The Zebra Mussel Control Systems consist of chlorine solution and water sampling lines. The chlorine solution lines direct a small amount of highly concentrated chlorine solution to either the intake well (called on-shore chlorination) or to the intake crib structure (called offshore chlorination). Under normal operation, only offshore chlorination is used with onshore chlorination used as a backup. Directly upstream of

each of the onshore and offshore chlorination dosing points, raw water sampling lines draw a raw water sample for plant sampling and testing. Typically, the raw water intakes extend a significant distance offshore. For example, the intake line for the F.J. Horgan Water Treatment Plant extends 3.2 kilometers offshore to a water depth of 18 metres. At this Plant, the offshore chlorine dosing has not been used in many years due to concerns regarding the integrity of the chlorine solution lines.

Furthermore, in December 2015, the Toronto Water Quality Master Plan identified that Zebra Mussel Control Systems at all three water treatment plants were at the end of their service life and required replacement, and recommended that the replacement systems should be designed to operate year round to minimize accumulation of mussels at the raw water intakes based on observed increase in Zebra and Quagga mussel colonization patterns year round. Historically, the Zebra Mussel Control System was only operated seasonally.

In 2006, the Ontario government passed the Clean Water Act, 2006 [S.O. 2006, c 22] (the “Act”) to address drinking water source protection recommendations made by Justice O'Connor in his judicial inquiry into the tainted water tragedy that occurred at Walkerton in 2001. The Ministry of Environment, Conservation and Parks approved the Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source Protection Plan ("Plan"), with an effective date of December 31, 2015. The Plan outlines policies that are intended to protect Lake Ontario, Toronto’s drinking water source, from spills of contaminants and similar unplanned events by implementing risk reduction measures at their source, and by improving the knowledge base available for forecasting lake circulation and water quality impacts to the City’s water treatment plant intakes, when there is a spill impacting Lake Ontario.

In 2019, City of Toronto Council approved the Lake Ontario Monitoring System which fulfills part of City's responsibilities related to the "Plan" and established the basis for an agreement with neighbouring municipalities to operate and maintain a Lake Ontario Monitoring System. The Lake Ontario Monitoring System includes the installation of new lake current and water quality instrumentation near the Plant intakes, complimented with databases to collect, store and share data on Lake Ontario currents and water quality.

Given the synergies between the installation of the Lake Ontario Monitoring System and the replacement of the Zebra Mussel Control Systems, the design and installation of both were grouped as a single engineering design assignment and construction contract, respectively.

During the engineering design for these systems, it was determined that the Lake Current Monitoring Systems would be most beneficial at the R.L. Clark Water Treatment Plant and at the R.C. Harris Water Treatment Plant and not required at the F.J. Horgan Water Treatment Plant due to its close proximity to an adjacent lake current monitoring system in the Region of Durham. It was also determined that a similar Zebra Mussel Control System design is required at both the R.L. Clark and F.J. Horgan Water Treatment Plants. Both Plants require a bundle of small diameter pipes be installed within the larger intake line.

The design for the R.C. Harris Water Treatment Plant includes open-cut and micro tunneling in the lake bed for the installation of the pipe bundles outside of the raw water intake due to the existing intake configuration which precludes installation inside the intake line.

In consideration of the two different designs, separate contracts will be tendered for the construction work. The first contract, Contract Number 20ECS-MI-01TW, will include the installation of new Zebra Mussel Control Systems at the R.L. Clark Water Treatment Plant and the F.J. Horgan Water Treatment Plant; and the installation of a Lake Current Monitoring System at R.L. Clark Water Treatment Plant. A new contract is planned to be issued in 2022 for the installation of a new Zebra Mussel Control System and Lake Current Monitoring System at the R.C. Harris Water Treatment Plant.

Award for Request for Supplier Qualification Document Number 2320476658 / 3907-20-7037

Due to the complexity of the work, the City prequalified the general contractors and the specialized marine subcontractors, for Contract 20ECS-MI-01TW and the future planned for the R.C. Harris Water Treatment Plant, by requesting that they demonstrate experience in successfully completing projects of similar scope and complexity.

A Request for Supplier Qualification for Document Number 2320476658 / 3907-20-7037, to qualify for future eligibility and to provide General Contractor, and Mechanical and Marine Sub-Contractor services for Zebra Mussel Control System and Lake Current Monitoring Upgrades, was issued by the Purchasing and Materials Management Division and was advertised on March 20, 2020.

A total of six (6) responses from contractors with experience in similar work were received and evaluated by staff from Engineering and Construction Services and Toronto Water. After evaluation, the following respondents were found to meet the mandatory requirements and scored above the pre-determined 75% threshold:

General Contractors:
1. Alberici Constructors Limited
2. Bennett Mechanical Installations (2001) Limited

Marine Sub-Contractors:
1. Alberici Constructors Limited
2. Dean Construction Company Limited
3. McNally International Incorporated

On June 18, 2020, a letter was issued to all respondents advising of the results of the pre-qualified Supplier.

Award for Request for Tender Document Number 2611519655 (196-2020), Contract Number 20ECS-MI-01TW

Request for Tender Number Doc2611519655 (196-2020), Contract Number 20ECS-MI-01TW, for Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.L. Clark and F.J Horgan WTP, was issued by the Purchasing and Materials Management Division and was advertised on both the City's and Ariba Discovery websites on September 16, 2020.

Two (2) bids were received by the Purchasing and Materials Management Division on November 12, 2020, when the tender closed. Summary of the bids received are included in Table 2 as follows:

Table 1: Summary of Bids Received for Document Number 2611519655 (196-2020) including bid price.

Supplier Name	**Bid Price (including H.S.T.)***
Alberici Constructors Limited	$23,740,508
Bennett Mechanical Installations (2001) Limited	$37,382,829

* Pursuant to the Request for Tenders document the contract aw ard price includes contingency. Bid prices do not include contingency.

The bids were received and evaluated by staff from Purchasing and Materials Management Division and Engineering and Construction Services and the two (2) bids were found to be in conformance with the Tender Call requirements. The recommended supplier for Contract Number 20ECS-MI-01TW is Alberici Constructors Limited.

Engineering and Construction Services staff compared the bids to the pretender engineering estimate of $21,962,200 including HST and all applicable charges. The bid price for the recommended supplier in the amount of $23,740,508 including HST and all applicable charges is within ten (10) percent of the engineering estimate.

A contingency allowance of $2,250,000 (net of HST) on the base scope of work has been added to the proposed contract award for additional work and/or services which may be required to address any unforeseen conditions which may arise during construction. This level of contingency is deemed necessary to allow for the risks of performing retrofit work in older operating plants such as the R.L. Clark and F.J. Horgan Water Treatment Plants.

The Fair Wage Office has reported that the recommended Bidder has indicated that they have reviewed and understand the Fair Wage Policy and Labour Trades requirements and the recommended Bidder has agreed to comply fully.

The Tender submission from Alberici Constructors Limited for Contract Number. 20ECS-MI-01TW, Request for Tender Number Doc2611519655 (196-2020) includes

their agreement to complete the works within a time frame of 112 weeks from the date of the issuance of the written Order to Commence.

Therefore, based on the factors listed above, the City recommends that Contract Number 20ECS-MI-01TW, Request for Tender Number Doc2611519655 (196-2020) for the Zebra Mussel Control System and Lake Current Monitoring Upgrades at the R.L. Clark and F.J Horgan WTP be awarded to Alberici Constructors Ltd. in the amount of $23,259,299, net of all taxes.

CONTACT

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SIGNATURE

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