



REPORT FOR ACTION

Contract Award for Tender Call 324-2018 for Liquid Train Upgrades at the Highland Creek Treatment Plant and Amendment to Purchase Order 6041201 for Professional Services during Construction

Date:**To:** Infrastructure and Environment Committee**From:** Chief Engineer and Executive Director, Engineering and Construction Services, and the Chief Purchasing Officer**Wards:** Ward 25 - Scarborough-Rouge Park

SUMMARY

The purpose of this report is to: (a) advise of the results of Tender Call 324-2018, for Contract 18ECS-MI-01HC for the Liquid Train Upgrades at the Highland Creek Treatment Plant and request authority to award a contract to Bennett Mechanical Installations (2001) Ltd., in the amount of \$89,827,000 net of all applicable taxes and charges (\$91,407,955 net of HST recoveries); and, (b) in order to effectively manage the work due to the size and complexity of the construction project the City requires additional contract administration resources and requests authority to amend Purchase Order 6041201 with AECOM Canada Ltd. (AECOM) by an additional amount of \$1,736,382 net of all applicable taxes and charges (\$1,766,942 net of HST recoveries) and by extending the delivery date for completion to December 31, 2024.

RECOMMENDATIONS

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

1. The Infrastructure and Environment Committee, in accordance with Section 195-14C of Toronto Municipal Code Chapter 195 (Purchasing By-Law), grant authority to award Contract 18ECS-MI-01HC, Tender Call 324-2018 for Liquid Train Upgrades at the Highland Creek Treatment Plant to Bennett Mechanical Installations (2001) Ltd., in the amount of \$89,827,000 net of all applicable taxes and charges (\$91,407,955 net of HST recoveries) having submitted the lowest compliant bid and meeting the specifications in conformance with the Tender requirements;

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 the Purchase Order 6041201 with AECOM for the provision of professional services for contract administration and site inspection services during construction of Liquid Train Upgrades at the Highland Creek Treatment Plant by (i) increasing the value of the Purchase Order 6041201 for services during construction in the amount of \$1,736,382 net of all applicable taxes and charges (\$1,766,942 net of HST recoveries), revising the current contract value from \$3,177,086 net of all applicable taxes and charges (\$3,233,003 net of HST recoveries) to \$4,913,468 net of all applicable taxes and charges (\$4,999,946 net of HST recoveries) and (ii) extending the delivery date for completion from December 31, 2021, to December 31, 2024.

FINANCIAL IMPACT

Award of Contract 18ECS-MI-01HC, Tender Call 324-2018

The total amount to award Contract 18ECS-MI-01HC, Tender Call 324-2018, for the Liquid Train Upgrades at the Highland Creek Treatment Plant is \$101,504,510 including HST and all applicable taxes. The cost to the City is \$91,407,955 net of HST recoveries.

Funding is available in the 2019-2028 Approved Capital Budget and Plan for Toronto Water under account CWW036-18 Liquid Train Repairs - Phase 1. Funding details are provided in Table 1 below (all values are net of HST recoveries).

Table 1. Projected Cash Flow for Contract 18ECS-MI-01HC.

Year	CWW036-18
2019	\$ 1,500,000
2020	\$10,000,000
2021	\$20,000,000
2022	\$20,000,000
2023	\$21,000,000
2024	\$10,000,000
2025	\$ 8,907,955
Total	\$91,407,955

Amendment to Purchase Order 6041201 for Contract Administration Services

The amendment request included in this report will increase the total contract value by \$1,736,382 net of all taxes and charges (\$1,766,942 net of HST recoveries).

Funding for the purchase order amendment is included in the 2019-2028 Approved Capital Budget and Plan for Toronto Water under account CWW036-01. Funding details (net of HST recoveries) are provided in Table 2 below (all values are net of HST recoveries).

Table 2. Projected Cash Flow for Amendment to PO No. 6041201.

Year	CWW036-01
2023	\$1,000,000
2024	\$766,942
Total	\$1,766,942

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

DECISION HISTORY

At its meeting of August 14, 2013, Bid Committee granted the authority to enter into agreements with AECOM Canada Ltd., being the highest overall scoring proponent meeting the requirements of Request for Proposals (RFP) 9117-13-7066 to provide contracted professional engineering services including preliminary and detailed design, services during construction and post construction services for the Highland Creek Treatment Plant Return Activated Sludge pumping, Aeration System and Phosphorus Removal System Upgrades in the amount of \$3,177,086 net of all taxes.

The Bid Committee Decision Document can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.BD137.1>

COMMENTS

Background

The Highland Creek Wastewater Treatment Plant (HCTP) is one of four wastewater treatment facilities operated by the City of Toronto. The HCTP is located at 51 Beechgrove Drive, south of Lawrence Avenue East and services an area bounded by Steeles Avenue on the north, Victoria Park Avenue on the west, the Rouge River on the east and Lake Ontario on the south. The facility serves a population of about 500,000 and operates on a 24/7 basis.

The HCTP was originally built in three phases: South East Plant (originally known as the Old Plant, constructed in 1956), South West Plant and Incineration (originally known as Phase I and Incineration, constructed in 1976) and North West Plant (originally known as Phase IV, constructed in 1981). The rated capacity of the Plant is 219,000 cubic meters per day.

In 2012, Toronto Water assessed the need to upgrade some of the key process equipment and infrastructure at HCTP to a state of good repair so as to ensure the facility continues to operate optimally, as designed and in compliance with regulatory requirements.

Subsequently, the City issued two Request for Proposals (RFP) in 2013 and in 2015, respectively, for engineering services to address the need for upgrading the aging infrastructure and equipment:

a) Request for Proposal, RFP 9117-13-7066, to provide engineering services for the Return Activated Sludge Pumping, Aeration System and Phosphorus Removal System Upgrades (RAP) at the Highland Creek Treatment Plant. The assignment was awarded to AECOM through a competitive procurement process on September 14, 2013.

b) RFP 9117-15-7208, to provide engineering services for the Liquid Process Trains Rehabilitation and Upgrades at the Highland Creek Treatment Plant (LTRU). The assignment was awarded to CH2M Hill Canada Limited (CH2M) through a competitive procurement process in July 27, 2016. The RFP included engineering services for two construction contracts. Contract 1 included critical process equipment replacements, such as waste system pumps, sludge collection systems and tank isolation gates. The future (yet to be awarded) Contract 2 includes the construction of an entire new wastewater processing area to provide redundancy of plant capacity.

As the design of the two projects progressed independently, it became evident that the work areas of the construction of the RAP contract and LTRU Contract 1 would eventually overlap in both space and time.

The Occupational Health and Safety Act stipulates that projects must be separated in either time or space to be considered as separate projects. When the projects overlap, the Owner, in this case the City, would be considered as the Constructor. As the Constructor, the City would have full liability for all health and safety aspects of the work performed by the contractors and subcontractors, rather than have the liability remain with the General Contractor, as is normally the case with municipal infrastructure construction contracts.

Neither the RAP contract nor LTRU Contract 1 can be deferred because of the critical nature of the repairs. In 2017, the City decided to merge the design of the RAP contract and LTRU Contract 1 and proceed with tendering one construction contract titled Liquid Train Upgrades (LTU), Contract 18ECS-MI-01HC. Merging the designs involved standardizing project specifications, standardizing drawings and details and creating one tender package.

In addition to resolving the issue of the City becoming the Constructor, the single contract would reduce the potential regulatory non-compliances associated with frequent operational shutdowns, as well as reduce the demand on Toronto Water operations staff, both of which could have been encountered if the works were constructed via separate contracts.

In order to effectively manage the work, the City negotiated with AECOM and CH2M to merge the two contracts. AECOM and CH2M both concurred with the City that merging of the RAP Contract and LTRU Contract 1 would be the most optimal approach and would minimize risks to the City.

Prequalification of Contractors

Due to the complex nature of the merged contract, the City decided to pre-qualify the general contractors of Contract 18ECS-MI-01HC, as well as the mechanical and electrical subcontractors, by requesting that they demonstrate experience in successfully delivering projects of similar scope and complexity.

On March 26, 2018, the Purchasing and Materials Management Division (PMMD) issued Request to Prequalify (RTP) 3907-18-7086 to pre-qualify the General, Mechanical and Electrical contractors for the Liquid Train Upgrades Contract 18ECS-MI-01HC.

The following four (4) firms met the minimum technical threshold outlined in the RTP and pre-qualified to bid on the subsequent Tender Call 324-2018:

1. Alberici Constructors, Ltd.
2. Bennett Mechanical Installations (2001) Ltd.
3. Kenaidan Contracting Ltd.
4. Graham Construction and Engineering LP

Award of Tender Call 324-2018, Contract 18ECS-MI-01HC

Tender Call 324-2018, Contract 18ECS-MI-01HC, for the Liquid Train Upgrades at the Highland Creek Treatment Plant was issued by PMMD and was advertised on the City's Website for twenty (20) weeks beginning on December 28, 2018. PMMD, at its Public Opening held on May 17, 2019, opened the following Tender submissions from all four pre-qualified contractors:

Bidders	Bid Price Including HST
Bennett Mechanical Installations (2001) Ltd.	\$101,504,510.00
Alberici Constructors, Ltd	\$115,970,287.49*
Kenaidan Contracting Ltd.	\$117,777,581.24
Graham Construction and Engineering LP	\$119,328,000.00

*Tender Price corrected for mathematical errors. PMMD has verified that the mathematical errors were corrected.

Bennett Mechanical Installations (2001) Ltd., is being recommended for the award of Tender Call 324-2018, Contract 18ECD-MI-01HC, having been the lowest pre-qualified bidder meeting the requirements and specifications for the Tender. The submitted bid price of \$101,504,510, including all applicable taxes and charges is 29% lower than the pre-tender engineering estimate of \$143,500,000 including all applicable taxes and charges.

The submission from Bennett Mechanical Installations (2001) Ltd., for Tender Call 324-2018, Contract 18ECS-MI-01HC includes their agreement to complete the works within 260 weeks, as stipulated in the tender documents, from the date of the written Order to Commence.

The Fair Wage Office has reported that the recommended bidder has indicated it has reviewed and understands the Fair Wage Policy and Labour Trades requirements and has agreed to fully comply.

Amendment to Purchase Order 6041201 for Contract Administration Services

The City determined that the most effective means to manage Contract 18ECS-MI-01HC is to have AECOM and CH2M provide services during construction for their respective portion of the works, which will require constant daily coordination among the two professional services consultants and the contractor.

Each consultant will be required to provide a full time contract administrator and four discipline-specific site inspectors. The coordination and communication among both consultants, the City and the Contractor will be undertaken by a construction manager and supported by a document controller. The construction manager will lead the entire contract administration team and serve as the main contact person for the Contractor and the City. The construction manager and the document controller will be provided by CH2M.

The base scope of work for AECOM, as stipulated by the City in the RFP issued in 2013, did not provide for the level of contract administration effort necessary for the merged construction contract. The staffing resources requested in the RFP were based on a single stand-alone construction contract only, and did not contemplate the

additional coordination and communication that are deemed necessary for the merged contract.

The following major changes during design have significantly increased the level of professional services required from AECOM to successfully deliver their scope of work.

1. Merging of RAP Contract with LTRU Contract 1

The merging of the RAP and LTRU projects results in the need for significantly more communication and coordination effort during construction. The City, AECOM and CH2M agreed to augment and adjust the composition of the contract administration, site inspection and technical and engineering office support to account for the actual needs of the merged contract. Therefore, in addition to the service levels stipulated in the RFP, AECOM's team will now include a full time onsite contract administrator who will lead the AECOM site team and coordinate with the construction manager and CH2M's site team, as well as the Contractor. Additional hours are also needed for AECOM's project manager and office support staff due to the merger of the two contracts.

At this time, no additional funding is being sought for CH2M as the base scope of work under RFP 9117-15-7208 for LTRU Contract 1 and LTRU Contract 2 had already included a full-time contract administrator, a full-time document controller and all site inspection staff. Additionally, a full-time construction manager for LTRU Contract 2 was included because of the anticipated overlapping of these contracts in time and space. The position of the construction manager will now be allocated to the merged LTU 18ECS-MI-01HC, and LTRU Contract 2 will proceed after the merged contract (LTU 18ECS-MI-01HC) is completed.

2. Additional Design Scope

During the design phase, a number of change orders were approved by the City for additional design scope beyond the original RAP RFP base scope. The major scope changes included, but were not limited to, the redesign of the phosphorus removal facility, increasing the scope related to the remote processing units and removal of aeration tank covers at the south east plant. The design changes are expected to increase the number of shop drawing reviews, technical support, coordination, inspection, testing and commissioning and the provision of as-built documents, and will thus result in additional effort by AECOM to provide these services during construction.

3. Revised Capital Cost for RAP Contract (AECOM)

The conceptual study report, included in RAP RFP 9117-13-7066 (issued in 2013), assessed an estimated capital cost of \$22 million for the RAP contract. The actual contract tender closing cost for the RAP portion of the merged contract is \$45 million net of taxes, which is double the original RFP estimate.

Given the increase in project scale and in order to ensure that the interests of the City and full requirements for construction services are met, the City requires full-time contract administration.

AECOM submitted a request for change to revise the contract administration fees for the base scope deliverables. The request for change was based on a time task breakdown, which the City has reviewed and negotiated with AECOM. The final agreed additional cost is \$2,159,930. The revised contract administration resources and fees are comparable to other recent projects of similar size and complexity, and are considered reasonable.

The purchase order with AECOM currently has available funding in the amount of \$423,548. Thus the net requested increase to the purchase order is \$1,736,382, net of all taxes and charges. This would increase the contract value to AECOM from \$3,177,086 to \$4,913,468, net of all taxes and charges.

Additionally, the purchase order will be extended from December 31, 2021 to December 31, 2024.

Based on the factors listed above, the City recommends that Purchase Order No. 6024201 with AECOM be increased by \$1,736,382, net of all taxes and charges and extended to December 31, 2024 to be consistent with the completion date of the construction contract.

CONTACT

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SIGNATURE

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