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**Subject:** Award of Contract 2020-T-116 Port Dalhousie WWTP Upgrades Contract 1

**Report to:** Public Works Committee

**Report date:** Tuesday, December 8, 2020

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## **Recommendations**

1. That Contract 2020-T-116 Port Dalhousie WWTP Upgrades Contract 1 in the City of St Catharines **BE AWARDED** to Maple Reinders Constructors Ltd. at their bid price of \$36,836,870 (including 13% HST); and
2. That the current approved Contract amount of \$1,153,785.37 (including 13% HST) awarded to Hatch Corp. **BE INCREASED** by \$1,568,511.19 (including 13% HST), for a total revised Contract of \$2,722,296.56 (including 13% HST) for Port Dalhousie WWTP Upgrades for the provision of Contract Administration and Inspection Services for Port Dalhousie WWTP Upgrades Contract 1.

## **Key Facts**

- The purpose of this report is to seek Council's approval for the award of Contract 2020-T-116 Port Dalhousie WWTP Upgrades Contract 1 to Maple Reinders Constructors Ltd. at their bid price of \$32,599,000.00 (excluding 13% HST) and to seek Council's approval for the increase in the current approved contract amount of \$1,021,049 (excluding 13% HST) awarded to Hatch Corp. for 2016-RFP-14 Port Dalhousie WWTP Upgrades by \$1,388,063 (excluding 13% HST) for a total revised Contract of \$2,409,112 (excluding 13% HST).
- Schedule B of the Niagara Region Procurement By-law 02-2016 as amended February 28, 2019 requires Council approval for all tender awards in excess of \$5,000,000 (Recommendation 1) and for any Single Source award where the increase puts the total award value over \$1,000,000 (Recommendation 2).
- Proposed works include two new fine bubble aeration tanks with associated blower building, all associated yard piping, RAS pumping system upgrades, power supply & distribution system and process control & SCADA system upgrades including process control panels to support the process upgrades.
- Construction is scheduled from February 2021 to March 2023 with a contract completion date of March 3, 2023.
- Five (5) General Contractors were Prequalified in a competitive public pre-qualification process (2020-RFPQ-47) and were invited to bid on 2020-T-116 Port Dalhousie WWTP Upgrades Contract 1.

- On August 28, 2020, Niagara Region initiated a competitive public tender process (2020-T-116), to solicit bids from those prequalified companies to compete for these works. The tender closed on November 5, 2020 and four bid submissions were received and opened with the lowest compliant bid being received from Maple Reinders Constructors Ltd. in the amount of \$32,599,000.00 (excluding 13% HST).
- As part of a competitive bid process (2016-RFP-14), Hatch Corp was awarded the contract to provide engineering services for the Port Dalhousie WWTP Upgrades. Contract Administration and Inspection services were evaluated as provisional items in the 2016-RFP-14 bid process in the amount of \$696,441 but were not awarded. Hatch Corp. has provided revised fees for the provisional items for Contract Administration and Inspection services which increases the provisional amount by \$691,622 to include the extension in the contract duration, additional contract administration hours for proper oversight on a Tier 1 project as well as scope change requests for extra design efforts requested by Niagara Region for a total addition to the current Purchase Order of \$1,388,063.00 (excluding 13% HST). The Region has changed our construction services standards since 2016 to put more rigor into contract administration and inspection on Tier 1 projects to reduce risk during construction and improve oversight. The revised provisional fees for contract administration and inspection reflect our changed standards.

## **Financial Considerations**

This project will be constructed in two phases; Contract 1 and Contract 2. The budget for Contract 1 has been previously approved under Project 20000201 Port Dalhousie WWTP Upgrades for a total of \$39,500,000.

Project 20000201 Port Dalhousie WWTP Upgrades has actual and committed expenses of \$1,426,308 as of November 6, 2020. The total estimated project cost after the award of Contract 2020-T-116 and contract amount increase for contract administration and inspection is \$39,500,000 (inclusive of 1.76% non-refundable HST), as detailed in Appendix 1 – Total Estimated Project Cost.

The total estimated project cost for Contract 2 is \$15,000,000. The funds for Contract 2 will be requested as part of the 2023 capital budget. The projected combined total cost for both contracts is \$54,500,000.

## Analysis

The Port Dalhousie Wastewater Treatment Plant (WWTP) is owned and operated by Niagara Region and is located at 40 Lighthouse Road in the City of St. Catharines, north of Lakeshore Road. The plant was constructed in 1969 and has undergone various upgrades to provide a treatment capacity of 61,300 m<sup>3</sup>/d average flow, and a peak primary treatment capacity of 122,700m<sup>3</sup>/d. The plant services the City of St. Catharines and the City of Thorold. Refer to Appendix 3 for the Key Plan.

The Port Dalhousie WWTP requires sustainability improvements throughout the plant. Major components of the upgrades include replacement of the deteriorating plant inlet/overflow chamber, installation of a screening washer/compactor conveyance system, replacement of the aged aeration system with a new fine bubble diffuser system including new tanks, blower building and associated pumps and piping, refurbishment of the non-effective biofilter system, Master Control Centre (MCC) upgrades/replacements, plant-wide SCADA upgrades, construction of a new administration building and other miscellaneous process upgrades.

The construction of the works will be phased under two separate contracts. Contract 1 is scheduled for construction from 2021 to 2023 and Contract 2 construction is scheduled from 2023 to 2025.

The following scope of work is associated with Contract 1 of this project:

- Construction of two new aeration tanks consisting of fine bubble diffuser system, coarse bubble channel and chamber aeration, aeration tanks influent chamber, and aeration tanks Mixed Liquor Suspended Solids (MLSS) chamber;
- Construction of a new blower building and installation of new blowers and controls;
- Replacement of existing secondary clarifier 5 RAS pumps and associated piping and instrumentation with new;
- Modifications to existing primary clarifier distribution chamber;
- modifications to the existing power distribution system, addition of a new switchgear, transformer and generator;
- Installation of new Remote Programmable Unit (RPU) and SCADA upgrades;
- Decommissioning of the existing aeration system.

The following is the scope of work for Contract 2 of this project:

- Construction of new inlet/bypass channels with flow measurement;
- Modifications to existing screen building including installation of new screening conveyance system;
- Modifications to the chlorine contact tank inlet and gates;
- Refurbishment of the existing biofilter;
- Construction of a new administration building;
- Demolition of a portion of the existing administration building;
- Plant-wide MCC replacement/rehabilitation; and
- Plant-wide RPU replacement.

In accordance with Niagara Region Procurement By-law 02-2016 as amended on February 28, 2019 and under the guidance of the Region's Procurement Department, Niagara Region initiated a competitive public tender process (2020-T-116), on August 28, 2020 to solicit bids from those prequalified companies to complete these works. The tender closed on November 5, 2020 and four (4) bid submissions were received and opened with the lowest compliant bid being received from Maple Reinders Constructors Ltd. in the amount of \$32,599,000.00 (excluding 13% HST).

Niagara Region's Procurement Department has reviewed and checked all opened tenders to confirm they included acknowledgement of the correct number of Addenda and requisite Bid Security (tender deposit) and Surety (Agreement to Bond).

A summary of the bid submissions is included in Appendix 2.

Hatch Corp was retained by Niagara Region through a competitive bidding process, 2016-RFP-14, to complete the detailed design, tendering and contract administration and inspection services for the Port Dalhousie WWTP Upgrades project. Contract administration and inspection services were provisional items in the 2016-RFP-14 procurement. Fees for the provisional items were received and evaluated as part of the competitive bid process, however they were not awarded. Hatch has provided revised fees for contract administration and inspection services based on the current construction requirements as well as a scope change request for additional design efforts requested by Niagara Region.

The 2016 Request for Proposal (2016-RFP-14) stipulated a specific number of hours for Contract Administration for the construction period which amounted to 8 hours per week. Niagara Region's Water and Wastewater standards for construction support have since increased the required hours for contract administration and years of experience for the contract administrator and site inspector on Tier 1 projects. This

increase in support from the consultant provides the Region with proper oversight and inspection during construction to ensure that the project is constructed in compliance with the drawings and specifications.

The Port Dalhousie WWTP Upgrades project is a large, complex undertaking which includes the requirement for bypass pumping, groundwater dewatering, temporary power and careful construction sequencing to ensure the WWTP remains active and in-service throughout construction. The Region requested that Hatch update their original construction services provisional fees based on our new standards. Ensuring proper construction support by Hatch will reduce risk and help ensure a successful project completion.

The additional engineering fees associated with the increase in contract administration and inspection services is an extension of the work that was originally competitively bid. The fees now reflect the construction support and oversight required from the consultant based on the project's complexity. Extending the assignment to the current engineering firm rather than competitively procuring the additional services ensures consistency throughout the entire design phase; therefore, reducing any need for re-visiting the initial design and reducing the risk to the Region of inconsistency between designers. Risk is also reduced by having consistency from the design phase to the construction inspection and administration phase.

In addition to increases in the contract administration and inspection services required, additional design efforts are also necessary. Niagara Region identified operational flexibility concerns with the existing sludge piping and additional required process improvements which directly relate to the project. The process piping changes will allow the operator's flexibility to step-feed the aeration tanks during high storm flows to prevent an activated sludge washout. The additional process changes included modifications to the decommissioning plans and site drainage improvements in the area of the new aeration tanks. Hatch was requested to modify their design drawing set and contract documents to include the change.

Contract award requires resources from Legal Services and Corporate Services in order to execute the required contract documents and amending agreement. Water and Wastewater Engineering staff will be providing resources throughout the project in order to manage the contract with assistance from Corporate Services on contract/project payments.

## **Alternatives Reviewed**

1. Proceed with the Contract Award and Proceed with Contract Amount Increase –  
This alternative would enable staff to proceed with contract award to Maple Reinders Constructors Ltd. to construct Port Dalhousie WWTP Upgrades Contract 1 and to proceed with contract amount increase to Hatch Corp. to meet the Niagara Region's objective of providing proper treatment of sewage. The project will provide a sustainability upgrade to the existing process equipment, prolong the service life of the secondary treatment system, reduce energy consumption from obsolete equipment and ensure Niagara Region continues to meet or exceed the Ministry of Environment, Conservation and Parks (MECP) effluent quality requirements.
2. Do Nothing –This alternative does not adequately address the operation and maintenance issues currently experienced at the Port Dalhousie WWTP.

Staff recommend Alternative 1 to proceed with contract award to Maple Reinders Constructors Ltd. and contract amount increase to Hatch Corp.

## **Relationship to Council Strategic Priorities**

This recommendation is related to the Responsible Growth and Infrastructure Planning, Objective 3.3: Maintaining Existing Infrastructure. Through asset management planning, the Port Dalhousie WWTP upgrades project is required to ensure sustainable investments in the infrastructure needed to provide proper treatment of wastewater which meets or exceeds MECP effluent quality requirements.

## **Other Pertinent Reports**

Not Applicable

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### **Prepared by:**

Lindsay Jones, P.Eng.  
Senior Project Manager  
Public Works Department

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### **Recommended by:**

Bruce Zvaniga, P.Eng.  
Commissioner of Public Works (Interim)  
Public Works Department

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Submitted by:

Ron Tripp, P.Eng.  
Acting Chief Administrative Officer

*This report was prepared in consultation with Tony Cimino, C.E.T., Associate Director, W-WW Engineering; and Pamela Hamilton, Program Financial Specialist W-WW, and reviewed by Joseph Tonellato, P.Eng, Director W-WW and Dan Ane, Manager, Program Financial Support, Bart Menage, Director Procurement and Strategic Acquisitions.*

## **Appendices**

Appendix 1	Total Estimated Project Cost
Appendix 2	Summary of Bids
Appendix 3	Key Plan

**PW 44 - 2020 APPENDIX 1**  
**Total Estimated Project Cost**  
**Contract Award**

**Contract 2020-T-116 - Port Dalhousie WWTP Upgrade Contract 1**

	Council Approved Budget	Budget Increase/ Reallocation	Revised Council Approved Budget	Expended & Committed as of 11/06/20	Contract Award/ Forecast	Budget Remaining
	(A)	(B)	(C) = (A) + (B)	(D)	(E)	(F) = (C)-(D)-(E)
<b><u>Total Estimated Project Cost (20000201)*</u></b>						
(a) Construction (includes contract contingency)**	32,743,250	460,332	33,203,582	30,840	33,172,742	-
(b) Project Contingency	4,535,000	(1,557,066)	2,977,934	-	2,977,934	-
(c) Consulting Engineering Services (Design, Contract Administration, & Inspection) ***	1,350,000	1,496,733	2,846,733	1,334,240	1,512,493	-
(d) Project Management & Internal Costs	871,750	(400,000)	471,750	61,228	410,522	-
<b>Total Estimated Project Cost</b>	<b>39,500,000</b>	<b>(0)</b>	<b>39,500,000</b>	<b>1,426,308</b>	<b>38,073,691</b>	<b>-</b>

\*All costs include 1.76% non-refundable HST

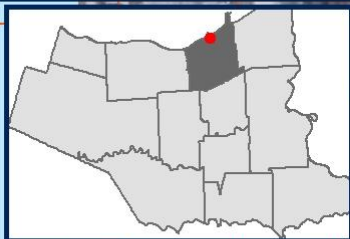
\*\* Total Construction Contract Award is equal to i) \$32,599,000 before tax; ii) \$33,172,742 including 1.76% non-refundable HST; iii) \$36,836,870 including 13% HST

\*\*\* Total CA & Inspection Award is equal to i) \$1,388,063 before tax; ii) \$1,412,493 including 1.76% non-refundable HST; iii) \$1,568,511 including 13% HST. In addition to the award, \$100,000 of additional engineering services are included in the forecast



**PW 44-2020 Appendix 2 – Summary of Bids (2020-T-116)**

<b>Vendor</b>	<b>Total Tender Price (excluding HST)</b>
Maple Reinders Constructors Ltd.	\$32,599,000.00
ROMAG Contracting Ltd.	\$34,570,000.00
Kenaidan Contracting Ltd.	\$34,672,500.00
North America Construction (1993) Ltd.	\$36,453,000.00



Lake Ontario

Port Dalhousie W.W.T.P.

WWTP

### Legend



Wastewater Treatment Plant

1:1,750

0 12.5 25 50m

