
Subject: Niagara Falls Water Treatment Plant Dechlorination and Waste System Upgrade – Gross Budget Increase

Report to: Regional Council

Report date: Thursday, July 22, 2021

Recommendations

1. That the gross budget for the Niagara Falls Water Treatment Plant Dechlorination Waste Upgrade project **BE INCREASED** by \$1,371,559 for a total project budget of \$4,866,559 and that the increase **BE FUNDED** from the Capital Variance Project – Water.
2. That the current contract amount of \$232,117.07 (including 13% HST) awarded to Associated Engineering (Ont.) Ltd. **BE INCREASED** by \$403,309.43 (including 13% HST), for a total revised contract amount of \$635,426.50 (including 13% HST) to include administration and inspection services and that Staff **BE AUTHORIZED** to proceed with the necessary amending agreement with Associated Engineering (Ont.) Ltd. in a form satisfactory to the Director of Legal and Court Services.

Key Facts

- The purpose of this report is to seek Council's approval for an increase of \$1,371,599 to the gross budget for project 10CW1518 (Niagara Falls Water Treatment Plant Dechlorination Waste Upgrade) and to increase Associated Engineering (Ont) Ltd. (AE) contract amount to \$562,324.34 (excluding 13% HST) for the Niagara Falls Water Treatment Plant Dechlorination Waste Upgrade.
- A gross budget increase is required due to higher than estimated tender prices from general construction cost variance, increased costs for greater duration of contract administration and inspection, and the project's ancillary fees.
- Construction is scheduled from August/September 2021 to August/September 2022, contingent upon a July 2021 contract award date, subject to Council approval of the recommendations in this report.
- A competitive tender process 2018-T-117 Dechlorination & Process Waste System Upgrades at the Niagara Falls Water Treatment Plant (NFWTP) closed on June 16, 2021. The lowest compliant bid was received from Kenaidan Contracting Ltd. at a

bid price of \$3,553,580 (excluding 13% HST). Council approval for a gross budget increase is required in order to proceed with the award of this contract.

- Based on AE's summary analysis of the tender bids received, they reported that the reason the lowest bid is 14.6% above the design estimate (revised in 2019 and 2020), could be due to the impact of the COVID-19 pandemic. The estimate was prepared pre-COVID and since the pandemic, material costs have increased significantly. This escalation was not anticipated during the preparation of the pre-tender estimates or budget planning processes.
- During the tender period, bidders requested that the construction period be increased from six (6) months to twelve (12) months due to delays in material supply caused by the shortage of various products resulting from the COVID-19 pandemic. The 12-month construction period was accepted, and this increased Division 1 costs such as Bonding and Insurance, Project Management costs, and Construction Facilities.
- AE was retained by the Niagara Region in September 2015 through a competitive bid process (2015-RFP-22), \$128,000 (excluding 13% HST) for design and tendering with an additional \$158,865 (excluding 13% HST) for provisional contract administration and inspection services.
- AE's total approved design fees to date are \$205,413.34 (excluding 13% HST) with \$77,397 being single-source sourced following the award of the RFP due to additional scope changes requested by Niagara Region during the design phase. The original RFP projected a construction start date in 2016, with a duration of 6 months and did not include a Request For Prequalification (RFPQ) process.
- In 2021, revised contract administration and inspection fees were negotiated with AE to accommodate the increase in construction duration from 6 to 12 months. The revised amount is \$356,911.00 (excluding 13% HST). This is \$198,046 above what was originally contemplated in the RFP (2015-RFP-22).

Financial Considerations

Project 10CW1518 (Niagara Falls Water Treatment Plant Dechlorination Waste Upgrade) has a previously approved capital budget of \$3,495,000.

While reconciling the overall project costs to date with the construction-related costs, a budget increase of \$1,371,559 (inclusive of 1.76% non-refundable HST) is required. The increase is required as a result of the lowest compliant bid price being higher than the original tender estimate, the increase in consultant's contract administration and inspection fees and the associated project's ancillary fees.

The construction contract award requires \$806,760 (inclusive of 1.76% non-refundable HST), the contract administration and inspection requires \$363,193 (inclusive of 1.76% non-refundable HST), and the project's ancillary fees requires \$201,606 (inclusive of 1.76% non-refundable HST).

The budget increase will bring the total project budget to \$4,866,559 and is to be funded from the Capital Variance Water Project. A full budget breakdown can be found in Appendix 3 – Total Estimated Project cost. As of June 25, 2021, the Capital Variance Water Project has an uncommitted balance of \$4,192,339

Analysis

Niagara Region owns and operates the Niagara Falls Water Treatment Plant (NFWTP) located at 3599 Macklem Street in the City of Niagara Falls. The NFWTP was originally constructed in 1932 (Plant 1) and expanded in 1950 (Plant 2) with further modifications in 1980 and 2005. The plant is rated at 145.5 ML/d and services the City of Niagara Falls, and parts of the City of Thorold and the Town of Niagara-on-the-Lake via a water main network, pumping stations, and service reservoirs. The raw water intake draws from the Welland River at the mouth of the Niagara River. Appendix 1 shows a key plan of the NFWTP.

The 2017 Master Servicing Plan (MSP) shows that the existing service area for the NFWTP is approximately 163,000 people (combined residential and employment), which includes the Decew WTP interconnections. Growth is anticipated to be approximately 60,000 by 2041 (combined residential and employment). Although demands will increase, the NFWTP has sufficient capacity to support the growth within Niagara Falls, Niagara-on-the-Lake and South Thorold.

The Ministry of Environment Conservation and Parks (MECP) requires chlorine removal before discharging process wastewater from Water Treatment Processes into the environment. To meet MECP's requirements, Niagara Region is upgrading the dechlorination system at Niagara Fall Water Treatment Plant (NFWTP). The current

system at the plant needs to be refurbished to monitor and ensure that the plant is not discharging chlorine into the Niagara River.

Niagara Region has initiated a project at the NFWTP to ensure regulatory compliance, environmental protection, optimized treatment, and improved health and safety. The project will improve the dechlorination process, upgrade the process waste system and provide related minor upgrades to the electrical system at the NFWTP

The following is the general scope of work for this project:

- New Dechlorination System
- New Catch Basin Manholes
- Improvement to the sludge handling system
- Replacement of electrical equipment associated with the upgrade
- Reconstruction of existing valve chamber and addition of new isolation valves
- Modification of the existing Inlet Chamber for the Coagulation Tanks to provide overflow lines connected into the existing Coagulation Tanks from above the high water level
- Removal and replacement of a section of the existing driveway
- Installation of permanent ladders in the Lamella Settler Thickeners and fall arrest equipment
- Removal and disposal of all equipment and pipe removed as part of this Contract

AE was retained in September 2015 through a competitive bid process (2015-RFP-22). The award included \$128,000 (excluding 13% HST) for design and tendering, with an additional \$158,865 (excluding 13% HST) for provisional contract administration and inspection services. Additional scope changes requested by Niagara Region during the design phase resulted in \$77,397.34 being single-sourced following the award of the RFP. At the end of the design phase of the project, AE's total approved design fees are \$205,413.34 (excluding 13% HST).

The original RFP (2015-RFP-22) indicated construction would commence in 2016 with a duration of six (6) months. It did not consider the services required to complete a Contractors' Request for Prequalification (RFPQ). The detailed design was completed in 2018 and the design optimization and constructability review was completed in 2019.

After the completion of the tendering process, revised contract administration and inspection fees were negotiated with AE to accommodate the increase in duration from six (6) to twelve (12) months, and the increase in engineering service rates from 2017 to

2021. The construction duration was increased to match the construction duration that was adjusted during tendering. The revised amount of the contract administration and inspection fees is \$356,911.00 (excluding 13% HST), an increase of \$198,046 above the amount originally contemplated in the RFP (2015-RFP-22).

While the contract administration and inspection services were evaluated as provisional items during the original RFP in 2015, the fees proposed were based on a six (6) months construction timeline. The increase in cost for contract administration and inspection services on the part of AE has been characterized as single sourcing in accordance with the guidance document developed by Procurement.

From October 2019 to February 2021, another major project (NFWTP Phase II) was ongoing at the plant. Staff paused the tendering of this project due to insufficient space on-site for safe and effective contractor separation and to avoid increased process interruptions at the plant. Hence, this project was tendered in 2021.

Based on the project's complexity, criticality and MECP's requirements, Staff used a contractors' RFPQ as part of the procurement process to ensure that competent contractors were invited for the Tender process. Per Niagara Region's Procurement By-law 02-2016 as amended on February 28, 2019, and under the guidance of the Region's Procurement Department, a competitive public request for the Pre-qualification process (2021-RFPQ-2) was initiated on February 5, 2021, to solicit technical proposals from General Contractors for this project.

Eighteen (18) General Contractors were evaluated and six (6) passed the minimum threshold of 70%. The successful six (6) were further invited for a competitive tender process on May 4, 2021, which closed on June 16, 2021. Four (4) bids were received and the lowest compliant bid received was from Kenaidan Contracting Ltd. at a bid price of \$3,553,580 (excluding 13% HST).

The Region's Procurement Department has reviewed and checked all submitted tenders to confirm they included acknowledgment of the correct number of Addenda, requisite Bid Security (tender deposit) and Surety (Agreement to Bond). A summary of the bid submissions is included in Appendix 2.

Based on AE's analysis of the tender bids received, the reason the lowest bid is 14.6% above the design estimate could be due to the impact of the COVID-19 pandemic. The engineering construction cost estimate was prepared pre-COVID and since the pandemic, material costs have increased in the order of 20 to 25 percent. This

escalation was not anticipated during the preparation of the pre-tender estimates or budget planning processes.

The price increase would also be impacted by the requirement of additional personal protective equipment, site facilities and COVID working arrangements that the contractors will need to put in place on site during construction. There is also the risk due to unknown price increases, specifically in equipment and concrete, which are occurring from when the contractor put in their tender price to when the purchase order is initiated. It was also observed that currently many projects are being tendered and so bidders are not inclined to underbid projects.

Furthermore, during the tender period, bidders requested that the construction period be increased from six (6) months to twelve (12) months due to delays in material supply due to the shortage of various products resulting from the COVID-19 pandemic. The 12-month construction period was accepted, and this increased the contractor's Division 1 costs such as Bonding and Insurance, Project Management costs, and Construction Facilities.

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

Alternatives Reviewed

1. Proceed with all required changes, including gross budget increase and single-source award to AE to complete the contract administration and inspection services, in a financially responsible, negotiated manner to ensure the contract and products meet the full warranty terms.
2. Proceed with gross budget increase and complete a competitive RFP process for the contract administration and inspection services. This alternative has additional risks that are associated with it. These risks include:
 - a. A competitive process will take more time than is available as there is an immediate need for these services.
 - b. A different consultant will require additional cost, effort and time to become familiar with the project requirements and will complicate the contract administration and inspection process.
 - c. A competitive process will hold up construction, resulting in the possibility of delay claims from the Contractor.

3. Do Nothing – This alternative does not adequately address the operation and maintenance challenges currently experienced at the NFWTP to effectively demonstrate the regulatory compliance required to satisfy MECP requirements.

Following a comprehensive review, Staff is recommending to proceed with Alternative 1.

Relationship to Council Strategic Priorities

This recommendation is related to the Responsible Growth and Infrastructure Planning strategic priority since the planned upgrades will ensure reliable infrastructure to support growth and economic development within the City of Niagara Falls.

Other Pertinent Reports

N/A

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