

Subject: Contract Amendment for 2019-RFP-239 Niagara Falls Wastewater Treatment Plant Secondary Treatment and Digester Upgrades

Report to: Public Works Committee

Report date: Tuesday, May 6, 2025

Recommendations

1. That a contract amendment to increase engineering construction and design services with Environmental Infrastructure Solutions Inc. in the amount of \$821,169 (including 13% HST) **BE APPROVED** for a total revised contract value of \$5,106,068 (including 13% HST) for the Niagara Falls Wastewater Treatment Plant Secondary Treatment Upgrades project, in a form satisfactory to the Director of Legal and Court Services.

Key Facts

- There are sufficient funds within the capital project budget to cover this contract amendment.
- The project, originally estimated to be complete by summer of 2025, is now expected to be complete by fall 2025 owing to delays in key equipment deliveries from suppliers.
- Council approval is required pursuant to Procurement By-law 02-2016 as amended, given the cumulative value of additional work exceeds \$1,000,000.
- This report seeks Council's approval to amend the Agreement with Environmental Infrastructure Solutions Inc. (EIS) for construction engineering and design services to include additional works in the amount of \$528,738 (excluding HST) for additional Phase 1 construction engineering services and \$197,961 (excluding HST) for Phase 2 engineering design services for a total increase of \$726,699 (excluding HST).
- This complex brownfield project has faced numerous constructability challenges while maintaining operations at a live plant providing uninterrupted service and striving to meet compliance requirements. Key obstacles include asbestos abatement, difficult ground conditions affecting piling, contaminated groundwater and filtration challenges, and delays in equipment delivery.

Financial Considerations

No Additional Budget Required

There are sufficient funds within the capital project budget to cover this contact amendment.

Procurement By-law Requires Council Approval

Although the original contract was competitively bid and awarded to EIS, the required additional work is treated as a single source purchase which requires Council approval, as per Schedule B, and Section 18(a)(i) of Procurement By-law 02-2016 as amended, as the cumulative value of the contract increase is greater than \$1,000,000 before taxes.

Staff recommend continuing with the current supplier, as they possess essential in-depth knowledge of the design and have been conducting site inspections since the project's inception. Their ongoing involvement has provided them with a thorough understanding of the design and key challenges, making their continued engagement crucial to ensuring consistency and project success.

The original contract award for Phase 1 design, contract administration and inspection services, and Phase 2 design services was \$2,493,858 (including non-recoverable HST). Given an increase in project timelines and design complexity, the contract was increased by a total of \$1,008,667 (including non-recoverable HST) between September 2020 and December 2020 by staff under delegated authority as single source purchases under the Procurement By-law 02-2016 as amended, Section 18(a)(i) and Schedule B.

A further contract increase was approved by Council in September 2022 via PW 38-2022 in the amount of \$356,160 (including non-recoverable HST) for additional contract administration and inspection hours under single source Section 18(a)(i) of Procurement By-law 02-2016, as amended. The current contract increase requires Council approval given the cumulative value of the single source increases over the life of the contract are greater than \$1,000,000 (excluding taxes).

Contract Amendment Required

This report seeks Council's approval to amend the Agreement with EIS for construction engineering and design services to include additional works in the amount of \$538,043 for additional Phase 1 construction engineering services and \$201,445 for Phase 2

engineering design services for a total increase of \$739,488 (including non-recoverable HST). The total revised value of the contract will be \$4,598,173 (including non-recoverable HST).

The total approved capital budget for this project is \$62,030,529. The total spent and committed on the project as of February 28, 2025, is \$60,803,032 and with the contract increase of \$739,488, the project costs remain within budget. A full project budget breakdown can be found in Appendix 1 to Report PW 7-2025 – Total Estimated Project Cost.

Analysis

Niagara Falls WWTP Upgrades Needed

The Niagara Falls WWTP upgrades are necessary to address the compliance challenges due to the degradation of existing treatment equipment that is beyond its useful life.

Improvements for the Niagara Falls WWTP have been ongoing since 2019 when EIS was retained through a competitive bid process 2019-RFP-239 and awarded detailed design and tendering of the Niagara Falls Wastewater Treatment Plant Secondary Treatment and Digester Upgrades-Phase 1 Design and Phase 2 Sludge Handling and Storage (Provisional) on October 22, 2019.

As noted above, the consulting assignment was extended due to increased project timelines and design complexity. Additional background on the compliance challenges and engineering consulting services can be found in Appendix 2.

This complex brownfield project has faced numerous constructability challenges while maintaining operations at a live plant and ensuring uninterrupted service. Key obstacles include asbestos abatement, difficult ground conditions affecting piling, contaminated groundwater, and filtration challenges. Additionally, long equipment lead times from suppliers have further impacted the project timeline requiring additional site inspection to ensure successful project completion.

These challenges have resulted in multiple extensions to the project completion date. The original contract completion date was June 2024 and these delays have extended project completion to the Fall of 2025.

The project requires additional project management, engineering, contract administration and inspection to ensure successful project completion.

The project website provides more details on the required WWTP upgrades.

[Niagara Falls Wastewater Treatment Plant Upgrades - Niagara Region, Ontario](https://www.niagararegion.ca/projects/niagara-falls-wastewater-treatment-plant-upgrades/default.aspx)
(<https://www.niagararegion.ca/projects/niagara-falls-wastewater-treatment-plant-upgrades/default.aspx>).

Alternatives Reviewed

Not Recommended

Without the recommended necessary additional engineering services that include contract administration and inspection, the construction project would have to proceed without site inspection services. The absence of site inspection on a construction project can lead to significant risks and quality concerns. Without regular oversight, there is a higher chance of errors, non-compliance with design specifications, and substandard workmanship. This can result in costly rework, project delays, and potential safety hazards. Site inspections are crucial for ensuring that construction activities align with approved plans, codes, and industry standards.

Relationship to Council Strategic Priorities

This recommendation is related to the Green and Resilient Region, the Niagara Falls WWTP upgrades project is necessary to ensure sustainable investments in the infrastructure needed to provide proper treatment of wastewater which meets MECP effluent quality requirements.

Other Pertinent Reports

See Appendix 2

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Appendices

Appendix 1	Total Estimated Project Cost
Appendix 2	Background for Compliance Challenges, Engineering Consulting Services, and Other Pertinent Reports

PW 7-2025 Appendix 1**Total Estimated Project Cost****Niagara Falls Wastewater Treatment Plant, Phase 1 - Secondary Treatment Upgrades and Phase 2 - Design**

Total Estimated Project Cost (10SW1517)*	Council Approved Budget Per PW 38-2022 and PW 9-2023	Budget Increase/ Reallocation	Revised Council Approved Budget	Expended & Committed as of 02/28/25	Forecast	Budget Remaining
Project Element	(A)	(B)	(C) = (A) + (B)	(D)	(E)	(F) = (C)-(D)- (E)
(a) Construction (including Construction Contingency and 1.76% non-recoverable HST)	54,873,517	66,697	54,940,214	54,940,214	-	-
(b) Project Contingency	467,500	(279,491)	188,009		188,009	-
(c) Consulting Engineering Services						
i. Geotechnical Service-Quality Control	421,470	192,922	614,392	514,392	100,000	-
ii. Detailed Design / Contract Administration & Inspection	3,858,686	739,487	4,598,173	3,858,685	739,488	-
iii. Other Consulting Engineering Services	1,267,392	(184,372)	1,083,020	1,083,020	-	-
(d) Project Management (In-House) and Operations	1,141,964	(535,243)	606,721	406,721	200,000	-
Total Estimated Project Cost	62,030,529	-	62,030,529	60,803,032	1,227,497	-

Total Estimated Project Cost (10SW1517)*	Council Approved Budget Per PW 38-2022 and PW 9-2023	Budget Increase/ Reallocation	Revised Council Approved Budget	Expended & Committed as of 02/28/25	Forecast	Budget Remaining
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Project Funding Sources

Regional Reserves and Debt (includes Federal Gas Tax Funding and Federation of Canadian Municipalities Funding)	(56,145,400)		(56,145,400)	(54,920,278)	(1,225,122)	-
Capital Variance Project - Wastewater	(5,765,129)		(5,765,129)	(5,765,129)		-
Development Charges	(120,000)	-	(120,000)	(117,625)	(2,375)	-
Total Project Funding Sources	(62,030,529)	-	(62,030,529)	(60,803,032)	(1,227,497)	-

*All costs include 1.76% non-recoverable HST

Appendix 2 – Background for Compliance Challenges, Engineering Consulting Services, and Other Pertinent Reports

Compliance Challenges

The Niagara Falls WWTP has experience compliance challenges due to the degradation of existing treatment equipment which has resulted in the MECP issuing two (2) Provincial Officer Orders to the Niagara Region, two (2) written warnings from Environment and Climate Change Canada (ECCC), and a number of non-compliances/exceedances for both Provincial MECP Environmental Compliance Approvals (74 in total) and Federal Wastewater System Effluent Regulation (53 in total) from 2018 to 2024.

The poor effluent quality is a direct result of secondary treatment equipment at the plant that has passed its useful life expectancy. This results in frequent breakdowns and equipment out-of-service regularly and impacts the plant's ability to remove pollutants effectively. Despite ongoing repair and maintenance efforts, treatment efficiency was reduced by an average of 30% in 2024 due to the state of deterioration of the secondary treatment process.

Staff have been working hard to remain in compliance with all applicable regulations and work co-operatively with regulatory authorities. Degradation of existing treatment equipment has hindered staff's ability to meet regulatory requirements at the Niagara Falls WWTP. The following actions have been completed or are currently underway to address the range of exceedances at the Niagara Falls WWTP:

- A capital project is underway to replace the secondary treatment process. The new equipment is anticipated to come online by mid-2025.
- Maintenance efforts will continue to support the existing secondary treatment equipment to the extent possible.
- A polymer is being added in the primary and secondary clarifiers to optimize settling of solids and TSS removal.
- Hauled sewage receiving has been restricted to domestic sewage from sources within the City of Niagara Falls boundaries only. Specifically, barring winery waste helps to reduce CBOD and TSS loading to the facility.
- Increase sewershed monitoring activities to identify any additional pollutant loading to the facility.

Engineering Consulting Services

- Environmental Infrastructure Solutions as retained through a competitive bid process 2019-RFP-239 and awarded detailed design and tendering of the Niagara Falls Wastewater Treatment Plant Secondary Treatment and Digester Upgrades-Phase 1 Design and Phase 2 Sludge Handling and Storage (Provisional) on October 22, 2019.
- Subsequently EIS was awarded Phase 1 Secondary Treatment Construction and Inspection Services.
- The original contract competitively bid and awarded to EIS totalled \$2,450,725 (excluding HST) and was subsequently increased by \$991,221 (excluding HST) between September 2020 and December 2020 pursuant to the Procurement By-Law Section 18(a)(i) and Schedule B.
- Additional contract administration and inspection work by EIS of \$350,000 (excluding HST) was approved by Council in September 2022 via PW 38-2022 as a single source purchase pursuant to the Procurement By-Law Section 18(a)(i) and Schedule B, which required Council approval given the cumulative value of additional work associated with the contract exceeded \$1,000,000.
- Phase 1 of the upgrades involves replacing the existing Rotating Biological Contactors and other liquid treatment processes that will improve the NFWWTP performance and effluent quality with construction beginning in April 2022.
- Additional solids treatment capacity are required to support the liquid treatment upgrades; as such, Phase 2 works will increase the capacity, efficiency, and reliability of the existing solids management process. Phase 2 upgrades are currently in design.

Other Pertinent Reports

[PW 9-2023 Niagara Falls Wastewater Treatment Plant Secondary Upgrades Project Green Municipal Funding Update](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=4ba16d6b-1c45-4514-8372-f02f6bd2e6c5&Agenda=Merged&lang=English&Item=17&Tab=attachments>)

[PW 38-2022 Asbestos Remediation Associated with the Niagara Falls Wastewater Plant Secondary Treatment Upgrades](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=a9972d29-13ff-4e8f-9318-aeae86a746cc&Agenda=Agenda&lang=English&Item=21&Tab=attachments>)

[PW 53-2021 Niagara Falls Wastewater Treatment Plant Secondary Treatment Upgrades Contract Award](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=b17015c6-f064-4a98-9663-96710d69cc3c&Agenda=Merged&lang=English&Item=16&Tab=attachments>)

[CWCD 2024-16 Communication to Owner Niagara Falls WWTP Non-Compliance](#)

(<https://www.niagararegion.ca/council/Council%20Documents/2024/council-correspondence-dec-20-2024.pdf>)