
Subject: Gross Budget Increase for Seaway Wastewater Treatment Plant Influent Channel Upgrade

Report to: Public Works Committee

Report date: Tuesday, August 13, 2024

Recommendations

1. That the gross capital budget for the Seaway Wastewater Treatment Plant Influent Channel Project **BE INCREASED** by \$5,850,000 and that the increase **BE FUNDED** as follows:
 - Capital Variance Project – Wastewater - \$477,500
 - Development Charges – Wastewater - \$5,372,500
2. That the authority to award the tender for the construction of the Seaway Wastewater Treatment Plant Influent Channel Project to the lowest compliant bidder **BE DELEGATED** to the Commissioner of Public Works, provided that such award is within the approved budget; and
3. That the Commissioner of Public Works **BE AUTHORIZED** to execute the resulting construction agreement with the lowest compliant bidder for the competitively tendered works within approved budget 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 to increase the gross budget for the Seaway Wastewater Treatment Plant Influent Channel Project by \$5,850,000, and to delegate authority to award the tender for construction to the Commissioner of Public Works, provided that such award is to the lowest complaint bidder and is within the approved budget.
- Construction of this project must be completed in advance of the Port Colborne East Side Employment Lands (ESEL) servicing to facilitate Project Eagle, and will require an expedited project timeline.
- A gross budget adjustment of \$5,850,000 is required to fund construction requirements related to the condition of the existing forcemains, complex bypassing requirements, unforeseen geotechnical conditions, and additional capacity required for growth of East Port Colborne (ESEL, Project Eagle, future residential, etc.).

- The budget adjustment will be primarily funded by Development Charges (\$5,372,500), and to a lesser extent from internal sources (\$477,500).
- Per the Budget Control By-Law Section 6.5(c)(iii), Council approval is required for Capital Variance requests greater than \$250,000.
- Based on the 18-month construction estimate for the influent channel and a target completion of Q3 2027 for Project Eagle and Port Colborne's East Side Employment Lands (ESEL) servicing, any project delays will risk timely completion of the servicing for East Port Colborne and delay the development of those lands.
- The Region's Procurement By-law requires that tender awards greater than \$5,000,000 be approved by Council; however, there is an opportunity to streamline approvals to help meet these tight timelines, and to that end, staff are recommending that instead, authority be delegated to the Commissioner of Public Works to award and execute this construction contract.
- Subject to Council approval of this report, a tender for construction will be issued immediately following the August Council meeting and will be awarded by the Commissioner of Public Works at the earliest possible opportunity to allow construction to commence, provided that such award is to the lowest compliant bidder and is within the approved budget (failing which a further report to Council will be required). Staff estimate this action will afford at least an additional 12-weeks of potential construction time to the project, and greatly reduce the risks for Project Eagle and ESEL.

Financial Considerations

The Seaway WWTP Influent Channel Upgrade project (20000869) has an approved budget of \$4,895,000 consisting of: \$595,000 for the design phase of the project (2019 and 2020), and \$4,300,000 for construction (2023). The project has expended and committed \$440,755 as of June 30, 2024.

Since the original Request for Proposal for engineering services in 2021, this project has grown in complexity. Although a construction budget was established in 2023, it did not account for requirements related to the condition of the existing forcemains, complex bypassing requirements, unforeseen geotechnical reporting and materials testing requirements (O. Reg 406/24 Excess Soils), and increased costs of materials and labour. Additionally, the influent channel had to be expanded further than originally anticipated and pipes upsized to account for the increased flows associated with future residential growth, Project Eagle, and ESEL. Of the \$5,850,000 in additional funds

requested, \$2,800,000 is due to the project's complexity and previously unknown conditions, and \$350,000 is to expand the channel and increase pipe sizes to accommodate Project Eagle and ESEL

Given the change in scope of the project to accommodate growth (further described in the Analysis section of the report), it has been determined that the overall gross project budget should be funded 50% from DCs and 50% from internal sources. This results in an adjustment to the overall project funding sources. The net impact of this gross budget increase and the prior funding adjustment is an increase of \$477,500 to be utilized from internal sources (Capital Variance Project – Wastewater).

As a result, the revised cost estimate for the Seaway WWTP Influent Channel Upgrade is \$10,745,000 (including non-recoverable HST) which allows for the construction of the project, inclusive of the construction works, contract administration and construction inspection, material testing, and internal costs. As a result of the addition of DC funding, the funding for this project will now be \$5,372,500 from DCs and \$5,372,500 from internal sources. Staff have included \$1,765,450 for project contingency in the cost estimate to mitigate cost uncertainty risks to the project such as the complex bypassing requirements, poor soil conditions, and large underground concrete infrastructure that may conflict with the proposed design. Therefore, a gross budget increase of \$5,850,000 is required to proceed with the works.

The proposed budget increase will be funded by a combination of the Capital Variance Project – Wastewater and Wastewater DCs. The Capital Variance Project – Wastewater has an uncommitted balance of approximately \$11,400,000.

A full budget breakdown can be found in Appendix 1 to Report PW 23-2024 (Total Estimated Project Cost).

Analysis

Background

The influent channel at the Seaway Wastewater Treatment Plant (WWTP) accepts raw sewage from six (6) Region owned sewage pumping station forcemains, and five (5) forcemains from within the WWTP site. The proposed East Port Colborne development includes the ESEL, Project Eagle, and future residential which adds an additional three (3) forcemains to the WWTP. Due to the shallow bedrock in Port Colborne, a majority of the infrastructure at the WWTP has been built above grade, including the existing influent channel which sits approximately 7.6 metres above grade. Raw sewage is

pumped through forcemains from the various sources to the elevated influent channel where it is conveyed to the treatment process.

In 2018, during routine inspections, operations staff discovered raw sewage leaking from the influent channel as well as numerous signs of rapid deterioration of the concrete walls, which resulted in a temporary repair. Therefore, a capital project to properly rehabilitate the influent channel was initiated and approved in the 2019 Capital Budget.

Associated Engineering Inc. (AE) was retained through a competitive procurement process to complete the detailed design of the influent channel upgrades, and provisionally provide contract administration and construction inspection services. The scope of the contract administration and construction inspection services has grown since the services were procured. The W-WW Division intends to amend the agreement with AE to include additional contract administration and construction inspection services through a single source requisition in accordance with Procurement By-Law 02-2016, Section 18(a)(i). The total cost for contract administration and construction inspection services is estimated to be \$794,040, which includes the additional \$392,505 that is to be procured as previously stated. This is due to AE's familiarity with the design work on the project and their ongoing work with Project Eagle and ESEL.

Due to the nature of the work required to successfully complete this project, all six sanitary pumping stations that service the residents of Port Colborne need to be temporarily shut down and bypassed one-by-one so that (1) the forcemains can be temporarily extended to an existing section of channel that will not be impacted by the rehabilitation of the channel, and (2) the final connections of the forcemains can be made to the new section of channel. The flows will be bypassed using tanker trucks that will collect the sewage and haul it to stations that are active at that time. The sanitary sewers in Port Colborne have higher than normal infiltration amounts, meaning that during wet weather events, the flows to the sanitary pumping stations drastically increase. This increases the risk of project delays as wet weather events during bypassing periods may result in increased flows that can not be bypassed, and ultimately the bypassing would be postponed until achievable flows are experienced.

The original construction duration was estimated to be 10 months. It is now estimated that this project will take 18 months to construct due to the increased complexity without unexpected delays; therefore timing is of critical concern.

Current State and Timelines

If the project were to wait until a 2025 Capital Budget project top-up approval and begin the tendering process in January 2025, staff estimate the project will not reach completion until December 2026. This estimate is based on an 18-month construction timeline and all administrative requirements leading up to construction kickoff, including a six-week tendering period and approximately eight-week turnaround time from tender close to obtaining Council approval to award construction if the successful bid is over \$5,000,000 as per Niagara Region Procurement By-Law requirements.

Without this upgrade, the new forcemains could not be connected to the channel, and the East Side Employment Lands could not be serviced.

As per Niagara Region Procurement By-Law Section 24 and Schedule "B", Council approval is required to award the construction contract for the Seaway WWTP Influent Channel Upgrade Project to the lowest priced (or highest scoring) compliant bid if the award value exceeds \$5,000,000. Given the time constraints associated with the influent channel project in relation to Project Eagle and ESEL, and the cost estimate for construction exceeding \$5,000,000, Staff recommends Council delegates the authority to award the construction contract to the Commissioner of Public Works for this project (provided such award is to the lowest compliant bidder and is within the approved budget). If Council delegates the award authority to the Commissioner, the contract will be awarded to the successful proponent at the earliest opportunity in mid-October, and the contractor will be able to begin site works by November, before the start of winter weather. Staff estimate this action will afford at least an additional 12-weeks of potential construction time to the project, and greatly reduce the risks for Project Eagle and ESEL.

Alternatives Reviewed

(i) Do Nothing (not recommended):

If the increase in project budget is not approved, the development of the ESEL and Project Eagle will be at risk as the lack of connection space will result in the area not being serviced for wastewater and there will be limitations on the water supply. Postponing this project also further increases the risk of raw sewage spills and complete failure of the channel due to the advance deterioration of the structure that has been discovered. Any failure of the channel would result in a complete shutdown of the plant and result in the Region being unable to service the residents of the City of Port Colborne.

- (ii) Wait for 2025 Capital Budget Approval (not recommended):

Council could direct staff to wait until the 2025 Capital Budget process and receive budget approval then. However, this alternative also poses a risk to the successful completion of the ESEL servicing as any delays to the influent channel project could result in the influent channel not being completed by the time the forcemains from the ESEL need to connect to it. Therefore, the lands will not be serviced on-time and development of the lands will be delayed.

Relationship to Council Strategic Priorities

The recommendations provided in this report align with Council's strategic priorities of a Green and Resilient Region, Objective 2.3: Build resiliency into our infrastructure to support growth and prepare for the impacts of climate change, and an Effective Region, Objective 1.3: Deliver fiscally responsible and sustainable services. Funding the upgrade to the influent channel is necessary to ensure the channel and the wastewater treatment plant remain fully operational and able to serve the residents of Port Colborne for years to come.

Other Pertinent Reports

[PDS-C 21-2024 Memorandum Regarding Project Eagle](#)

(<https://pub-niagararegion.escibemeetings.com/Meeting.aspx?Id=bb190b0b-08e1-49d3-8ff8-b3c82ae14fe6&Agenda=Agenda&lang=English&Item=31&Tab=attachments>)

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Appendices

Appendix 1 Total Estimated Project Cost

PW 23-2024 Appendix 1 - Total Estimated Project Cost

Gross Budget Increase for Seaway WWTP Influent Channel Upgrade

<u>Total Estimated Project Cost (20000869)*</u>	Council Approved Budget	Budget Increase/ Reallocation	Revised Council Approved Budget	Expended & Committed as of 06/30/24	Forecast	Budget Remaining
Project Element	(A)	(B)	(C) = (A) + (B)	(D)	(E)	(F) = (C)-(D)- (E)
(a) Construction (including Construction Contingency)	3,569,000	3,757,720	7,326,720	-	7,326,720	-
(b) Project Contingency	507,000	1,258,450	1,765,450	-	1,765,450	-
(c) Consulting Engineering Services	-	-	-	-	-	-
i. Detailed Design	501,000	(88,120)	412,880	292,880	120,000	-
ii. Contract Administration & Inspection	-	882,075	882,075	-	882,075	-
iii. Geotechnical Service-Quality Control	-	105,000	105,000	-	105,000	-
(d) Project Management (In-House) and Operations	318,000	(176,156)	141,844	41,844	100,000	-
(e) Subsurface investigation	-	91,706	91,706	91,706	-	-
(f) Miscellaneous	-	19,325	19,325	14,325	5,000	-
Total Estimated Project Cost	4,895,000	5,850,000	10,745,000	440,755	10,304,245	-

Project Funding Sources

Regional Reserves and debt	(4,895,000)	-	(4,895,000)	(220,378)	(4,674,622)	-
Capital Variance Project - Wastewater	-	(477,500)	(477,500)	-	(477,500)	-
Development Charges - Wastewater	-	(5,372,500)	(5,372,500)	(220,377)	(5,152,123)	-
Total Project Funding Sources	(4,895,000)	(5,850,000)	(10,745,000)	(440,755)	(10,304,245)	-

*All costs include 1.76% non-refundable HST