
Subject: South Niagara Wastewater Treatment Solution – Award Notice for Detailed Design and Construction Services for the South Niagara Wastewater Treatment Plant and Outfall

Report To: Public Works Committee

Report date: Tuesday, April 9, 2024

Recommendations

1. That Contract 2023-RFP-176 Detailed Design and Construction Services for the South Niagara Wastewater Treatment Plant and Outfall **BE AWARDED** to Stantec Consulting Inc. as the highest ranked proponent in the competitive request for proposal process at their bid price of \$12,617,193.85 (including 13% HST) for Phase 1 Design.

Key Facts

- The purpose of this report is to seek Council's approval to award Contract 2023-RFP-176 Detailed Design and Construction Services for the South Niagara Wastewater Treatment Plant (WWTP) and Outfall to Stantec Consulting Inc.
- Stantec Consulting Inc. achieved the highest overall score, with a Phase 1 (design) total of \$11,165,658.27 (excluding 13% HST).
- In accordance with Schedule B of the Niagara Region Procurement By-law 02-2016, as amended, Council approval is required for all awards valued in excess of \$5,000,000 excluding taxes.

Financial Considerations

To date, Council has approved a total estimated capital cost of \$400M for 10 recommended key projects derived from the South Niagara Wastewater Solutions Strategy. Construction is contingent on \$145M in external funding that will be required to support the project budget.

Staff are seeking contract award approval for the design and construction of one (1) of the ten projects, which involves phase 1 detailed design of the plant and outfall.

The Plant: Within the approved budget of \$400M, the New South Niagara Wastewater Treatment Plant Project (20000724) has an approved capital budget of \$248M; \$31M has been initiated for environmental assessment, property acquisition and detailed

design of the plant, with \$217M to be initiated in the future for construction, should external funding be available to address the balance of construction costs. As of March 1, 2024, \$17M has been spent and committed on this project.

The Outfall: Also within the approved budget of \$400M, the New South Niagara Outfall Project (20001367) has an approved capital budget of \$6M. Of the approved capital budget for this project, \$0.78M has been initiated for detailed design with \$5M to be initiated in the future for construction contingent on external funding. As of March 1, 2024, \$0 has been spent and committed on this project.

The contract award currently before Council is for Phase 1 (detailed design) of both the plant and the outfall, to be funded from the approved and initiated funding noted above. The total contract award is \$11,362,174 (including non-recoverable HST) which will be allocated to both parts - \$10,581,774 to the WWTP project (20000724) and \$780,400 to the Outfall project (20001367).

The remaining funding required for the South Niagara Wastewater Solution will involve subsequent reports to Council to initiate funds closer to the construction phases, with initiation contingent on confirmation of external funding to support project costs. Council and staff continue to advocate with various levels of government for external funding to support the project. In 2023, members of Council and senior staff met with provincial and federal cabinet ministers during Niagara Week, AMO and FCM Advocacy Days to discuss the need for external support. A letter signed by the Chair, Niagara's FCM Board of Directors member and eight (8) FCM Ontario Caucus members was also sent to the Federal Minister of Housing, Infrastructure and Communities emphasizing the need for a new national infrastructure program. Funding for the SNWSP remains a top priority for planned 2024 advocacy work.

A full budget breakdown for the Plant and Outfall projects can be found in Appendix 1 to Report PW 10-2024 – Total Estimated Project Cost of Initiated Funds. See Appendix 2 to Report PW 10-2024 for a listing of all the associated South Niagara Wastewater Solution gross Capital Project budgets including initiated and uninitiated funding.

Analysis¹

Chronology of Events

- The new 30 million litre per day WWTP and associated wastewater system upgrades in South Niagara Falls were recommended originally as part of the Region's 2016 Master Servicing Plan Update (MSPU).
- In 2017, the MSPU recommendation was adopted by the Councils of both the Niagara Region and the City of Niagara Falls.
- In 2018, GM BluePlan Engineering Ltd. was selected through competitive bid process 2018-RFP-34 to complete the Class Environmental Assessment (Class EA) Schedule C project to select the preferred site for the WWTP, the preferred receiving waterbody for the WWTP outfall and the preferred system improvements to support the new WWTP. The assignment also included the conceptual design of the recommended preferred solution.
- In 2021, Council approved the revised total estimated capital costs of \$399.64M for all 10 recommended key projects which were derived from the South Niagara Wastewater Solutions project (of which the WWTP and Outfall represent 1 project). The budget was referred to and approved in the 2022 budget process (PW 39-2021).
- Council approved report PW 39-2021 for approximately \$38M to be initiated for the Class EA, land acquisition and design phases of the new WWTP, WWTP Outfall and Trunk Sewer. The remaining budget will require subsequent reports to Council to initiate funds closer to the construction phases.
- In 2022, the EA was completed and filed to the Ministry of Environment, Conservation and Parks (MECP) Registry.
- In the spring of 2023, Jemma Consultants Ltd. (Jemma) was retained through competitive bid process 2022-RFP-216 for Project Management Services for this project and the South Niagara Trunk Sewer (issued under 2023-RFP-230).
- In October 2023, the Region released bid opportunity 2023-RFP-176 for the WWTP, and in January 2024 released 2023-RFP-230 for the South Niagara Trunk Sewer project. The projects will be completed concurrently under separate assignments, but in a coordinated manner to help ensure success of the overall strategy implementation.

¹ Pertinent reports can be found in Appendix 3.

- The Region purchased the WWTP site located at 6811 Reixinger Road and took possession in January 2024.
- Construction is anticipated to commence in 2026 with an in-service date of 2029, contingent on funding assistance from external sources.

Discussion

In 2016, Niagara Region completed Niagara 2041, which included a Municipal Comprehensive Review (MCR) of growth planning and infrastructure needs to establish a plan for Niagara's future. Of the total population and employment growth expected in the City of Niagara Falls by 2041, over 64 percent is expected in the South Niagara Falls area.

As part of the Niagara 2041 MCR process, the Niagara Region 2016 Water and Wastewater Master Servicing Plan Update (2016 MSPU) was completed. A key recommendation of the 2016 MSP, which was further supported by the 2021 MSPU, was that a new WWTP including critical collection and conveyance systems be created in the South Niagara Falls area that would connect to neighbouring sewer systems freeing up additional capacity in existing WWTP infrastructures throughout the region.

Through a detailed evaluation process that reviewed growth areas, system integration/connectivity/hydraulics, infrastructure needs and alignments/sites, capital and lifecycle costing, the 2016 MSPU included a key recommendation for a new 30 MLD (million litres per day) WWTP in south Niagara Falls, and sewer systems to connect to this new facility.

Capacity from the new WWTP can be made available to support growth in Thorold, St. Catharines, Niagara Falls, Queenston and Niagara-on-the Lake. In addition to diverting flows from the existing Niagara Falls and Thorold wastewater systems, the plant will accommodate flows from both existing and new developments as well as alleviate current and future demands on existing infrastructure. Niagara Region Council and City of Niagara Falls Council adopted these recommendations in 2017.

In 2018, the Region initiated the South Niagara Wastewater Treatment Solution Environmental Assessment and conceptual design for the new South Niagara Wastewater Treatment Plant and Associated Collection and Conveyance Impacts Study. GM BluePlan Engineering Ltd. (GMBP) was retained through a competitive process 2018-RFP-34 to undertake the Class EA and conceptual design for a detailed servicing strategy to achieve the following objectives: to protect the environment, to accommodate

growth, to provide flexibility for the future, and to establish the new WWTP as a community asset.

The Class EA process initially identified a list of alternative WWTP site locations and alternative effluent receiving waterbodies, with multiple sewer network possibilities with each combination. Through a comparative evaluation approach, the following key study recommendations were developed:

- New WWTP site (6811 Reixinger Road, Niagara Fall, ON)
- New WWTP outfall to Chippawa Creek
- New Trunk Sewer along Montrose Road
- New servicing alignments for Thorold South, (Brown Road Trunk Sewer)
- New Black Horse Sewage Pump Station (SPS) for Thorold Servicing (701 Allanburg Road, Thorold, ON)
- New sewer serving allows for opportunities to decommission the following SPS
 - South Side High Lift SPS
 - Garner Road SPS
 - Grassy Brook SPS

Following completion of the Class EA the Region initiated the acquisition of private property to accommodate the construction of the new WWTP. The Region took possession of the property on January 16, 2024, after which Niagara Region has commenced work on the New South Niagara Wastewater Treatment Plant and Outfall, and the New South Niagara Trunk Sewer.

Given the complexity of scope and risk associated with the projects, Niagara Region retained Jemma Consultants Ltd. (Jemma) through a competitive bid process 2022-RFP-216 for Project Management Services for both projects. Jemma will be acting as an extension of the Region for project management and technical advisory expertise to help manage both projects.

The detailed design and construction services for each project have been issued as separate Requests for Proposals (2023-RFP-176 and 2023-RFP-230), however, diligent coordination during design, construction and commissioning will be required to ensure successful implementation of the strategy. The anticipated schedules for both projects are as follows:

- Project 1 – New South Niagara WWTP and Outfall
 - Detailed Design – April 2024 to July 2026;

- Tender and construction – July 2026 to December 2028, with commissioning and in-service by July 2029;
- Project 2 – New South Niagara Trunk Sewer
 - Which includes trunk sewers along Montrose Road, Reixinger Road and Brown Road;
 - Detailed Design – May 2024 to January 2026;
 - Tender and construction – January 2026 to April 2028;
 - It is intended that Project 2 will advance into construction prior to Project 1 in order to construct the shaft and complete the tunnel along Reixinger Road so the raw sewage pumping station work within Project 1 can commence.

A Request for Proposal (RFP) for Project 1 was released on October 5, 2023 through a public competitive bid process (2023-RFP-176) and closed November 20, 2023. Four (4) technical proposal submissions were deemed compliant by Procurement and were evaluated by the team. Two (2) submissions met the required minimum technical score threshold and proceeded to the proponent interview stage. Both interviews met the scoring threshold to proceed to the opening of financial proposals.

Stantec Consulting Inc. achieved the highest overall score, with a Phase 1 (design) total of \$11,165,658 (excluding HST), Phase 2 (contract administration and inspection; provisional) total of \$6,615,792, and overall total of \$17,781,451. Staff recommend that Phase 1 be awarded to Stantec Consulting Inc. at an award value of \$11,165,658 (excluding HST). In accordance with Schedule B of the Niagara Region Procurement By-law 02-2016, as amended, Council approval is required for all awards valued in excess of \$5,000,000 excluding taxes. Phase 2 will be the subject of a future report prior to construction.

Alternatives Reviewed

Proceed with the Award of 2023-RFP-176 - This alternative would enable staff to proceed with award to Stantec Consulting Inc. to complete detailed design of the new WWTP in South Niagara Falls. The project supports growth and economic development in South Niagara by increasing system capacity, and also provides benefit to Niagara Falls, Thorold, St. Catharines and Queenston, and Niagara-on-the-Lake by freeing up capacity in the existing systems. Simultaneously, it protects the environment by reducing combined sewer overflows and minimizing overland flooding.

Do Nothing –This alternative does not adequately address the need to support growth economic development in South Niagara as the existing system is reaching capacity and has significant limitations for expansion given that it is within confined built-up areas. Staff recommend Alternative 1 to proceed with award to Stantec Consulting Inc.

Relationship to Council Strategic Priorities

This recommendation is related to the Green and Resilient Region since the new infrastructure will build resiliency into our Region Infrastructure to support growth in Niagara Falls, St. Catharines, Thorold, Queenston and Niagara-on-the-Lake by providing or freeing up capacity within the system to accommodate new growth and development. In addition, the new infrastructure will protect the local environment from the impacts of climate change by reducing combined sewer overflows by approximately 60 to 70 per cent.

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Appendices

Appendix 1 Total Estimated Project Cost of Initiated Funds

Appendix 2 South Niagara Wastewater Solution Gross Capital Project Budgets

Appendix 3 Other Pertinent Reports

PW 10-2024 Appendix 1

Total Estimated Project Cost of Initiated Funds

2023-RFP-176 New South Niagara Wastewater Treatment Plant and Outfall - Award Notice for Consulting Services for Detailed Design

Total Estimated Project Cost of Initiated Funds - WWTP (20000724)*	Approved Budget	Less Uninitiated Funding	Initiated Budget Funding	Expended & Committed as of 03/01/24	Contract Award/ 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-refundable HST)	216,582,141	(216,582,141)	-	-	-	-
(b) Project Contingency	-	-	-	-	1,782,611	(1,782,611)
(c) Property Acquisition	14,400,000	-	14,400,000	12,632,000	250,000	1,518,000
(d) Consulting Engineering Services	-	-	-	-	-	-
i. Detailed Design **	14,176,240	-	14,176,240	779,323	10,581,774	2,815,143
ii. External Project Management	-	-	-	197,159	-	(197,159)
iii. Geotechnical and Environmental Service	-	-	-	445,938	1,500,000	(1,945,938)
iv. Environmental Assessment	2,500,000	-	2,500,000	2,298,460	-	201,540
(e) Project Management (In-House) and Operations	-	-	-	293,711	300,000	(593,711)
(f) Miscellaneous	-	-	-	15,264	-	(15,264)
Total Estimated Project Cost	247,658,381	(216,582,141)	31,076,240	16,661,856	14,414,385	(0)

Total Estimated Project Cost of Initiated Funds - Outfall (20001367)*	Approved Budget	Less Uninitiated Funding	Initiated Budget Funding	Expended & Committed as of 03/01/24	Contract Award/ 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-refundable HST)	4,961,932	(4,961,932)	-	-	-	-
(b) Consulting Engineering Services	-	-	-	-	-	-
i. Detailed Design**	780,400	-	780,400	-	780,400	-
Total Estimated Project Cost	5,742,332	(4,961,932)	780,400	-	780,400	-

Combined Total Estimated Project Cost of Initiated Funds (20000724) and (20001367)*	Approved Budget	Less Uninitiated Funding	Initiated Budget Funding	Expended & Committed as of 03/01/24	Contract Award/ 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-refundable HST)	221,544,073	(221,544,073)	-	-	-	-
(b) Project Contingency	-	-	-	-	1,782,611	(1,782,611)
(c) Property Acquisition	14,400,000	-	14,400,000	12,632,000	250,000	1,518,000
(d) Consulting Engineering Services		-	-	-	-	-
i. Detailed Design **	14,956,640	-	14,956,640	779,322.81	11,362,174	2,815,143
ii. External Project Management	-	-	-	197,159	-	(197,159)
iii. Geotechnical and Environmental Service	-	-	-	445,938	1,500,000	(1,945,938)
iv. Environmental Assessment	2,500,000	-	2,500,000	2,298,460	-	201,540
(e) Project Management (In-House) and Operations	-	-	-	293,711	300,000	(593,711)
(f) Miscellaneous	-	-	-	15,264	-	(15,264)
Total Estimated Project Cost	253,400,713	(221,544,073)	31,856,640	16,661,856	15,194,785	(0)

* All costs include 1.76% non-refundable HST

** Total Phase 1 Detailed Design Award is equal to i)\$11,165,658.27 before tax; ii) \$11,365,173.86 including 1.76% non-refundable HST; iii) \$12,617,193.85including 13% HST

PW 10-2024 Appendix 2

South Niagara Wastewater Solution Gross Capital Project Budgets

Project	Project Number	Total Project Budget (\$ M)	Uninitiated Funds (\$ M)	Initiated Funds (\$ M)
New South Niagara Wastewater Treatment Plant	20000724	\$ 247.66	\$ (216.58)	\$ 31.08
New South West Trunk Sewer - South Niagara Falls	20001368	107.82	(101.56)	6.26
New South West Trunk Sewer - Niagara Falls / Thorold	20001369	19.61	(19.61)	-
Black Horse Sewage Pumping Station	20001374	5.91	(5.31)	0.60
New SNF WWTP Outfall	20001367	5.74	(4.96)	0.78
Black Horse Forcemain	20001375	3.32	(3.32)	-
Peel Street SPS Upgrades and Forcemain	20001370	5.92	(5.92)	-
South Side High Lift Pumping Station	20001371	0.63	(0.63)	-
Garner, Oakwood, Grassy Brook SPS	20001372	1.14	(1.14)	-
McLeod Road Overflow Diversion	20001373	1.89	(1.89)	-
Totals		\$ 399.64	\$ (360.92)	\$ 38.72

PW 10-2024 Appendix 3

Other Pertinent Reports

CL-C 24-2017 Waste & Wastewater Services Master Servicing Plan (How We Flow)
Project Update – South Niagara Falls Treatment Plant Review

[PW 8-2019 - South Niagara Falls Wastewater Treatment Plant - Project Update and Award Notice](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=1fd59fee-b3d7-4415-9a16-1113f14a7ab3&Agenda=Agenda&lang=English&Item=14&Tab=attachments>)

[PW 39-2020 - South Niagara Falls Wastewater Treatment Plant Upgrade](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=f8747f43-9163-45b8-b0aa-6bd3e7d59a34&Agenda=Agenda&lang=English&Item=1&Tab=attachments>)

[BRC-C 1-2020 - Councillor Information Request from October 15, 2020 Budget Review Committee of the Whole](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=8d11493f-a65c-4e19-9615-e5ea6bc14e20&Agenda=Merged&lang=English&Item=16&Tab=attachments>)

[PW 39-2021 - South Niagara Falls Wastewater Treatment Plant- Budget and Property](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=57da1d2d-c54e-4133-930c-2b8220245489&Agenda=Merged&lang=English&Item=14&Tab=attachments>)