REGIONAL MUNICIPALITY OF NIAGARA
SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

V4.6 – Council Presentations

BluePlan ENGINEERING

V4.6.1

REGIONAL MUNICIPALITY OF NIAGARA

SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

Council Reports

Award Notice

Subject: South Niagara Falls Wastewater Treatment Plant – Project Update and Award Notice

Report to: Public Works Committee

Report date: Tuesday, February 19, 2019

Recommendations

1. That Report PW 8-2019 **BE RECEIVED** for information on the project status and award notice of the new South Niagara Falls Wastewater Treatment Plant.

Key Facts

- The purpose of this report is to inform Council of the project status and consultant award for the new South Niagara Falls Wastewater Treatment Plant (WWTP).
- A new 30 MLD WWTP in the south end of Niagara Falls is required as part of the recommended servicing strategy from the 2016 Water and Wastewater Master Servicing Plan (MSP) Update that was endorsed by Regional Council on June 8, 2017.
- Phase I of the project is the Schedule "C" Environmental Assessment (EA) and the Enhanced Conceptual Design (ECD) for the WWTP and conveyance system in south Niagara Falls.
- The EA and ECD were awarded through competitive bid process (2018-RFP-34) that was guided and moderated by Procurement.
- GM BluePlan Engineering Ltd. achieved the highest overall score and was awarded the EA and ECD phase of the project in the amount of $1,855,405.00 (excluding contingency and HST).

Financial Considerations

Project 20000724 has a previously approved budget of $2,500,000, therefore sufficient funds are available to award the EA and ECD, which were previously identified in the MSP.

The EA and ECD will be for work to be done on the new plant, as well as changes required to the conveyance system as identified in the MSP. The MSP has identified the costs (+/- 50%) for the entire scope of the project. Refer to Appendix 1 for a breakdown of project costs and funding sources.

All of the projects identified above have a growth component to them and development charges will be used to fund the growth share of work. Regional sources of funding will

be required to fund the remaining work that is deemed a benefit to existing services. All of these projects have been included in the 10-year Capital Budget forecast.

Analysis

As part of Niagara 2041, there was an update to the MSP. Niagara Region retained GM BluePlan Engineering Ltd. to review, evaluate develop water and wastewater servicing strategies for all servicing within the urban areas of the Region. The MSP Update used updated population and employment growth forecasts based on a 2041 planning horizon.

Through a multiple bottom line evaluation process that reviewed growth areas, system integration/connectivity/hydraulics, infrastructure needs and alignments/sites, capital and lifecycle costing, the MSP Update recommended a new 30 MLD WWTP in south Niagara Falls. It is noted that 64% of the growth in Niagara Falls is projected south of Lundy's Lane and 22.5% of the growth is projected south of the Welland River. A new WWTP will accommodate existing and new development-related flows from south Niagara Falls and help alleviate existing and future system and plant pressures to the north.

As a result, the 2018 Water and Wastewater (WWW) Capital Budget accounted for the EA and ECD required prior to the detailed design and construction of the new WWTP. This phase will be a Schedule C project completed as outlined in the Municipal Water & Wastewater projects in the Municipal Engineers Association document for Municipal Class Environmental Assessment, October 2000, as amended in 2007, 2011 and 2014. The EA will be a large scale, Tier 1 project and will require the following:

- Extensive consultation with the public, various internal and external stakeholders, approval agencies and regulatory bodies
- Development and evaluation of conveyance system and WWTP alternatives and concepts
- Understanding of developmental, political and environmental sensitivities
- Reviews of technology and value engineering
- Funding strategy
- Focused cost estimation

The EA will be completed for the entire Niagara Falls and South Thorold wastewater systems. The following is the anticipated design and construction timing for the new WWTP and conveyance system works:

Project	Design	Construction
South Niagara Falls WWTP	2023	2025
Centre Street Sewage Pumping Station (SPS)	2022	2024
South Side High Lift Conveyance	2022	2024
Blackhorse Sewage SPS	2024	2026
Blackhorse Forcemain	2024	2026

The Terms of Reference for the EA was developed by a core project team in WWW Engineering with guidance and input from various parties including, other WWW groups, Corporate Communications, the City of Niagara Falls and approval agencies.

Given the complexity of the project, and to ensure the best processes and scoping were achieved, a Senior Technical Advisor from Jemma Consulting Ltd. was retained to assist in the development of the Terms of Reference and in the development of tools, criteria and processes to be utilized for selection of the prime consultant for the Environmental Assessment. The intent was to mitigate risk during scoping of the assignment and during the selection of the prime consultant.

The Request for Proposals (RFP) document was prepared together with Procurement and was released on August 8, 2018 via a public, competitive bid process (2018-RFP-34). The entire procurement process was guided and moderated by Procurement. The RFP closed on September 13, 2018 and proposal submissions were received from the following eight (8) proponents:

1. Black & Veatch Canada Company
2. GM BluePlan Engineering Limited
3. GHD Limited
4. Hatch Limited
5. Jacobs Engineering Group (CH2M Hill Canada Limited)
6. RV Anderson Associates Limited
7. Stantec Consulting Service Inc.
8. WSP Canada Inc.

Eight (8) proposals were received and all were deemed to be compliant and were technically evaluated by a team of five (5) evaluators, and of the eight (8) proposals submitted, four (4) met the previously determined minimum threshold to proceed to the proponent interview stage. Three (3) of the four (4) proponents interviewed met the previously determined minimum threshold and proceeded to the opening of their financial proposal. GM BluePlan Engineering Ltd. achieved the highest overall score and was awarded the EA and ECD phase of the project in the amount of $1,855,405.00 (excluding contingency and HST).

GM BluePlan Engineering Ltd. received notice of selection for award from Procurement on November 9, 2018 and an agreement was executed on December 6, 2018. The project has commenced and the project team is currently conducting the pre-consultation phase of the EA including project initiation meetings, agency meetings, property scanning and information gathering. Notice of Study Commencement for the EA is anticipated in March 2019. The project is anticipated to be complete by November 2020.

Alternatives Reviewed

Not applicable.

Relationship to Council Strategic Priorities

This recommendation is related to the Fostering Growth strategic priority since the planned rehabilitation will ensure reliable infrastructure to support growth and economic development within the City of Niagara Falls and City of Thorold.

Other Pertinent Reports

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

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This report was prepared in consultation with Tony Cimino, C.E.T., Associate Director, W-WW Engineering, Pamela Hamilton, Program Financial Specialist W-WW, Tracie Byrne, Manager Purchasing Services, and reviewed by Joseph Tonellato, P.Eng., Director W-WW.

Appendices

BluePlan ENGINEERING

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REGIONAL MUNICIPALITY OF NIAGARA

SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

Council Reports

Council Drop-in Session: June 19, 2019

MOVING WATER FORWARD

South Niagara Falls Wastewater Solutions
Municipal Schedule C
Class Environmental Assessment
Council Drop-in Session: June 19, 2019

SIGN-IN SHEET –

Name	Address	Phone Number	Email (you consent to receive key project updates)	Would you like to be actively involved or just stay informed?
Tom Insinna	220 Hoat St, F.E.	905-321-5508	tom.insinna@niagararegion.ca	Informed ☑ Involved ☐
Mary Blon	RMON			Informed ☑ Involved ☐
Peter Churey	Headquarters	3239		Informed ☑ Involved ☐
[illegible]	408 Roland Rd	905 658 2986	Pelham Mayor	Informed ☐ Involved ☐
Bob Gale	Niag Region	[illegible]	Bob.gale@niagararegion.ca	Informed ☐ Involved ☐
JERRY UGULINI	CITY OF THOROLD	905-227-6613	Jerry.Ugulini@thorold.ca	Informed ☑ Involved ☐
TIM RIGBY	CITY OF ST. CATH	905-328-8508	tim.rigby@stnia...	Informed ☑ Involved ☐
Phill Lambert	RMON	x3627		Informed ☑ Involved ☐
				Informed ☐ Involved ☐

Niagara Region

V4.6.3

REGIONAL MUNICIPALITY OF NIAGARA

SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

Council Reports

Committee of the Whole: September 3, 2020

Subject: South Niagara Falls Wastewater Treatment Plant Update

Report to: Committee of the Whole

Report date: Thursday, September 3, 2020

Recommendations

That the capital projects associated with the new South Niagara Falls Wastewater Treatment Plant **BE REFERRED** to Budget Review Committee of the Whole for consideration as part of the 2021 budget process

Key Facts

- The purpose of this report is to inform Council of the project status, provide an updated budget estimate for the capital projects associated with the new South Niagara Falls Wastewater Treatment Plant (SNF WWTP), and ask Council to refer the consideration of these projects with the 2021 Capital Budget
- The new South Niagara Falls WWTP was recommended from the 2016 Water and Wastewater Master Servicing Plan (MSP) Update and endorsed by Regional Council on June 8, 2017.
- The financing strategy for the SNF projects can accommodate a 2% rate increase for 2021 and with a 5.15% increase from 2022 – 2028.
- GM BluePlan Engineering Ltd is completing the Schedule 'C' Class Environmental Assessment (Class EA) for the program and is continuing to refine the recommendations from the MSP.
- The Class EA study is developing a holistic wastewater program to address not only the new wastewater treatment plant but also, major trunk sewer extensions, sewage pumping stations, and the overall wastewater strategy for Niagara Falls, and for parts of the City of Thorold. The holistic wastewater program will provide benefit to Niagara Falls, Thorold as well as Niagara-on-the-Lake and St. Catharines.
- In March 2020, the Region presented the selected preferred solution at a Public Information Meeting in Niagara Falls, with the preferred site identified on Reixinger Road, east of the QEW.
- At this time, Class D planning level cost estimates(which are based on conceptual information and are subject to a wide range of variability) indicate that the capital cost for the entire program could be $325M (indexed to the year of cashflow), which

includes design, property acquisition, construction and commissioning of all components. Significant fieldwork and conceptual design is underway to refine the program and improve the accuracy of the cost estimate.

- In accordance with the budget planning by-law and capital financing policy, staff recommend including the complete budget for the entire program in the 2021 Capital Budget
- If the program is approved with the 2021 capital budget, it would be staff's intention in 2021 to commence design of the new WWTP, outfall and trunk sewers as well as to procure land for the preferred site of the new SNF WWTP.
- Construction of most projects, including the new WWTP and trunk sewer are not anticipated to commence until 2023.
- Region is actively pursuing funding from provincial and federal government. Region delegates gave a presentation at the AMO conference to Laurie Scott, Minister of Infrastructure, to request a portion of the announced Infrastructure Canada Investment Program funding be allocated to this critical infrastructure program.

Financial Considerations

The SNF capital projects and required debt financing can be accommodated within a 2% rate increase in 2021 with the following key strategies:

- Temporary reduction in the transfer from operating to the WW capital reserves.
- Use of plant operations, maintenance and debt charge budget to fund pay as you go infrastructure until the plant is operational.
- 5.15% increase from 2022 – 2028 required to re-establish the transfers to capital reserves to $40 million from $21 million in 2020 to support the asset management plan.

Capital Costs and Details

The projects and estimated costs are associated with the preferred solution of the new South Niagara Falls Wastewater Treatment plant are outlined below:

Table 1 – Project Budgets (in millions)

	Project	Total Project Cost	Previously Approved	2021 Budget Request
1	New SNF WWTP (NF)	$ 192.65	$4.90	$ 187.75
2	New SNF WWTP Outfall (NF)	10.63		10.63
3	New South West Trunk Sewer – SNF (NF)	85.34		85.34
4	New South West Trunk Sewer (NF/TH)	9.77		9.77
5	Black Horse Sewage Pumping Station (TH)	4.39		4.39
6	Black Horse Force Main (TH)	12.73		12.73
7	Peel Street SPS Upgrades and Forcemain (TH)	5.92		5.92
8	South Side High Lift Pumping Station Decommissioning (NF)	0.63		0.63
9	Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	1.14		1.14
10	McLeod Road Overflow Diversion (MF)	1.89		1.89
	Total	**$ 325.10**	**$4.90**	**$ 320.20**

NF - Niagara Falls
TH - Thorold

Descriptions of each of the projects is provided in the analysis section of the report.

The New SNF WWTP had a previously approved budget of $4.9 million to proceed with the environmental assessment and land acquisition related costs. As of August 20, 2020, $2.4 million has been spent and committed on the previously approved budget, leaving $2.5 as uncommitted. Costs committed to date primarily relate to the Schedule C Environmental Assessment (EA) and enhanced conceptual design for the entire capital program associated with the South Niagara Falls WWTP.

Revised Estimates

The revised indexed projects cost estimate is $325.10 million compared to the indexed cost estimates in 2017 of $236.80 million for a difference of $88.3 million. This is summarized below in Table 2.

Table 2 – Project Cost Comparison (in millions)

	2021 Estimate	2017 Estimate	Variance
Total Indexed Costs	$325.10	$236.80	$ (88.30)

There were a number of components removed and added from the initial project scopes. Details of the projects and estimates and scope changes between 2021 and 2017 are outlined in Appendix 2.

The primary reasons for the increase from the 2017 estimates are as follows:

- The trunk sewer estimated depth and length increased based on conceptual design information ($30 million)
- Increased property acquisition cost estimates ($12 million)
- Addition of treatment costs and provision for potential tertiary treatment ($23 million)
- Capital inflation rate of 4% per year dependent on timing of project cash flow/construction compared to 2% capital inflation rate used previously
- An updated wastewater strategy that will provide improved level of service, enhanced ability to address wet weather flows, and greater flexibility for efficient servicing in the future

It should be noted that the overall wastewater strategy and capital cost estimates continue to be reviewed and refined under the Class EA process. A final Class EA cost estimate will be provided in early 2021. Further to this cost estimate, the costs will continue to be refined and estimated with greater accuracy and detail as the projects move through detailed design and prior to tendering for construction.

Project Funding

The projects are to be funded by a combination of external grants, development charges, and debt. See Appendix 1 for a listing of the project budgets with associated funding sources.

The amount of debt to fund the South Niagara Falls projects is approximately $212.2 million. Of this debt, $148.20 million will be recovered by development charges over the life of the debt (30 years). The difference of $64 million will be funded by the operating budget and rate requisition. Staff are currently forecasting a deficit in available

Wastewater development charges receipts. This is common in municipalities with large growth projects as the benefits of the growth expenditures through development charge receipts occur after the infrastructure has been constructed. As a result the Region is required to issue development charge debt funded by future development charge revenue (which is a practice adopted by municipalities).

Note that staff is monitoring the effect of incremental debt in the amount of $212.2 million on its Standard and Poor Rating (S&P). S&P considers the ratio of total Region and lower tier debt combined compared to Region's operating revenues as one of the metrics. If the ratio is greater than 120% or consolidated debt surpasses $1 billion, there is a risk of a downgrade to the Region's credit rating. Potential impacts on the S&P rating will be presented by staff at Budget Review Committee of the Whole in October.

Total consolidated debt is currently $695.5 million (Region - $379.5 million, LAM - $316.4 million). At the end of Q2 2020, there was $273.3 million of Regional unissued debt. This does not include any future LAM issuances which may occur.

The project budget is reliant on external funding in the amount of $108 million for the SNF WWTP. This external funding estimate is in alignment with the funding formula for the new Niagara-on-the-Lake WWTP of 2/3 grant funding from Provincial and Federal sources. Staff will budget for 2/3 of the estimated plant cost as externally funded. This excludes land acquisition and design costs as funding has not yet been confirmed and staff intends to acquire land and start the design process in 2021. The total 2021 SNF WWTP budget excluding land and design costs is $162 M x 2/3 = $108M in estimated external funding.

If funding is confirmed to offset land and design costs, this will partially offset debt required to fund the project. Staff recommend partial initiation of projects identified in Table 3, specifically for land acquisition and design costs. The remaining project expenditures would be uninitiated until external funding is confirmed.

If these projects are approved with the 2021 capital budget, staff would intend to proceed with the following initiation in 2021:

Table 3 – 2021 Project Initiation

Project	2021 Action	Initiate
SNF WWTP	Land acquisition and design	$ 26,176,240
New SNF WWTP Outfall	Design	$ 780,400
New South West Trunk Sewer	Design	$ 6,264,011
Black Horse SPS	Land acquisition	$ 600,000
Total		**$ 33,820,651**

Estimated timelines for design to construction of the projects are noted in the analysis section of the report.

Operating Costs

The W/WW Financial Plan (W/WW FP), which is required to be updated every five (5) years to comply with safe drinking water legislation, was endorsed by council in 2019 and proposed an annual rate increase of 5.15% until 2028. Staff recognizes the challenge faced by the COVID-19 pandemic and have recommended a 2021 budget strategy of 2% increase for W/WW as per CSD 41-2020 – 2021 Budget Planning. A reduction to the transfer to W/WW capital reserves will provide the necessary mitigation to the budget to realize a 2% increase for 2021. This reduction will be re-established by 2024 with the recommitment to the 5.15% rate increase in the forecast years. However, the contribution to WW capital reserves will be $40 million by 2028 rather than the 2019 W/WW FP forecast of $50 million by 2028.

Combined with the budget planning pressures, the operating impacts of the revised SNF WWTP project estimates are summarized in Table 4.

Gross operating cost impacts are estimated at approximately $6 million, which would include staffing, utilities, repairs and maintenance, and lifecycle replacements costs. Staffing required to manage the plant operations would include a minimum of five operators, three maintainers, one instrumentation technician and one SCADA technician (10 FTE). Staff will be evaluating the need for additional FTE support as design and construction of the projects progresses. The request for FTE to operate the plant will be made in subsequent budget years when construction is anticipated to be substantially completed. Staff anticipates an approximate $770,000 reduction in operations and maintenance costs due to sewage pumping station decommissioning.

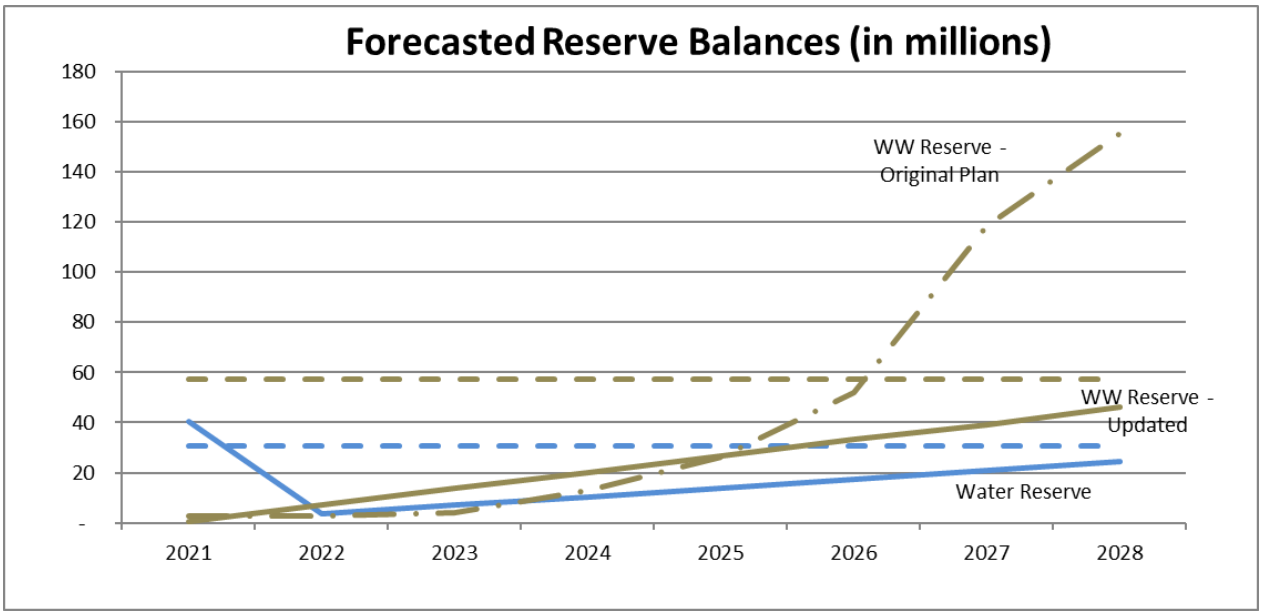
As per the budget planning by-law, the approval of capital projects that will result in an increase in operating costs in future years are to be budgeted in the year the project is

approved. Where a surplus may occur due to timing, that surplus will be used to fund pay as you go capital. This strategy will be adopted if these projects are approved with the 2021 capital budget as the projects are not anticipated to begin incurring debt financing or operating costs until after 2024. This surplus will assist in funding some pay as you go capital in lieu of the reduction in the annual transfer to capital reserves as noted above.

Table 4 – Summary of Annual Operating Budget Impact

Description	Original Financing Strategy	Updated Financing Strategy	Variance	Notes
Annual Debt Charge Budget (net of DC recovery)	N/A	$12.5M (8.7)M $3.8M	($3.8M)	• Original W/WW FP did not require debt for the SNF project as it was assumed adequate reserve contributions would have been established by construction (2025) • Updated Plan issues debt including debt to fund DCs not collected due to timing • Net impact is an increased Debt Charge of $3.8M
Transfer to WW capital	$21M	$12.8M	$8.2M	• Target - $74M (being the Average Annual Renewal Investment per 2016 Asset Management Plan) • Reduction required to offset debt charges and operating impacts of the SNF projects to align with 2% budget strategy
Annual Operating, maintenance and lifecycle costs	N/A	$6M	($6M)	• Includes operational, maintenance, staffing costs associated with SNF projects
Annual Operating Savings	N/A	($.77M)	$.77M	• Savings associated with decommissioning of sewage pumping stations

The impacts to the WW reserve balance based on revisions to the 2019 W/WW FP are noted below:



The 2019 W/WW FP forecasted the WW reserve to climb above target toward the end of the forecast period at an estimated balance of $152 million to provide additional financial flexibility should Upper Tier funding applications for the SNF WWTP not be successful and to close existing sustainability gaps in existing capital backlog. With the inclusion of the SNF projects in the 2021 capital budget, the reserve is now forecasted to have a balance of $46 million at the end of 2028. Note the target reserve balance is 2% of $2.8 billion in assets, or $56 million.

It is important to note that staff continue to evaluate the adequacy of recommended rate increases and impacts on reserve forecasts given capital requirements. The next W/WW FP will be updated for 2024 at which time the analysis will be refreshed and revised rate impacts will be communicated to Council.

Analysis

Project History

As part of Niagara 2041, there was an update to the Water and Wastewater Master Servicing Plan (MSP). Niagara Region retained GM BluePlan Engineering Ltd. (GMBP) to review, evaluate and develop water and wastewater servicing strategies for all servicing within the urban areas of the Region. The MSP Update used updated population and employment growth forecasts based on a 2041 planning horizon.

In Niagara Falls, there is not enough capacity in the existing sewer system nor at the existing treatment plant to meet the increasing system demands resulting from growth as well as the increased wet weather flows due to aging infrastructure and climate change.

The option to expand the existing wastewater treatment plant (WWTP) on Stanley Avenue and existing wastewater system in Niagara Falls was considered in the MSP. Through a detailed evaluation process, it was recommended that a new WWTP be implemented in South Niagara Falls to support growth, free up capacity in the existing system and at the WWTP, better manage wet weather flows and allow operational flexibility at the existing WWTP. A new WWTP will be located close to growth areas and provides the greatest flexibility and support for long-term servicing and benefit to the Niagara Falls and surrounding systems.

Expansion of the existing system to accommodate growth and wet weather flows would cause significant construction impacts due to the constrained corridors through built areas, environmentally sensitive areas and the difficulty in sequencing construction along critical infrastructure. As well, there would be increased operations costs with pumping the increased flows northerly through the City. Expansion of the existing WWTP would be significantly challenging due to the property constraints at the process areas requiring expansion, difficulty in sequencing construction in the operational plant and poor soil conditions.

The MSP Update recommended that the South Niagara Falls wastewater strategy, including the new WWTP be further evaluated under a Schedule C EA process.

Development Opportunities

There are development pressures and a strong interest in the South Niagara Falls area for servicing capacity, which is currently impacted by wet weather constraints. The proposed capital program is anticipated to provide the much needed servicing capacity to unlock the development potential in this area. Some developments include Thorold South/Rolling Meadows, Grand Niagara Secondary Plan, redevelopment of existing golf courses, including Oaklands Golf Club.

This new WWTP will be able to accommodate the servicing of the anticipated residential and employment growth from approximately 64,000 to 97,000 people and jobs for the estimated build out to 2041 of the existing urban boundary lands. The new WWTP and collection system strategy is also considering potential long term growth beyond 2041.

The South Niagara Hospital represents a significant investment of approximately $1 Billion for health care in Niagara which will generate associated growth and development surrounding this area. The development along Fourth Avenue near the new St. Catharines Hospital is an example that demonstrates how a new Hospital is a catalyst for growth. The new WWTP will support this development area and timing of construction is being considered with intention to align in-service dates.

The capital program to support the new WWTP will provide greater flexibility for development servicing in St. Catharines, Niagara Falls, Thorold, and Niagara-on-the-Lake.

Environmental Assessment and Conceptual Design

In November 2018, GMBP was retained via a public, competitive bid process (2018-RFP-34) to complete the Schedule C Environmental Assessment (EA) and enhanced conceptual design for the entire capital program associated with the South Niagara Falls WWTP that would review options to:

- Locate the new wastewater treatment plant in South Niagara Falls
- Determine the waterbody to receive the clean, treated water from the WWTP
- Best integrate the wastewater network to address growth, make the system as efficient as possible, and manage wet weather

Since award, the team has been working diligently to develop a solution that will support servicing for growth, minimize sewage pumping stations, reduce combined sewer overflows and maximize flexibility for the future. The project team is continuing to conduct extensive consultation with key stakeholder groups, approval agencies, property owners, residents, media and Indigenous communities. There have been three (3) public information centres held (May 2019, November 2019 and March 2020) and one Councillor drop-in session (June 2019). The PICs were held in open house format with good representation from residents in the study area. Facebook Live events were also held in advance of each PIC to provide additional opportunity for those not able or willing to attend the in person meeting. This format achieved over 1500, 1300 and 2900 views, respectively for each PIC.

With input from the public, key stakeholders and approval agencies, the project team developed and applied multiple-bottom line criteria (environmental, socio-cultural, legal / jurisdictional, technical and financial) to evaluate options for the new plant site, plant outfall location, and sanitary sewer system connections. Ten (10) long list alternatives were reviewed and evaluated from a high level and short-listed to four (4) alternatives that were evaluated in detailed. For each of the four (4) sites considered, the project team completed extensive reviews and investigations including: Natural Environment; Record Site Condition Review (Contamination); Stage 1 Archaeological; Cultural Heritage Screening; Agricultural Impact Screening; Geotechnical; Hydrogeological; Assimilative Capacity; and Conceptual Costing. There has also been consideration for public impact including: receptors (noise, odour, and air), traffic, transportation, and recreational activities.

Following the PIC 3 in March 2020 and a review and consideration of stakeholder input, the following preferred solution was selected:

- New WWTP site located at 6811 and 7047 Reixinger Rd.
    - close proximity to growth areas
    - close enough to existing residential and commercial to effectively service it but far enough away that the construction and operation will have minimal impacts
    - selection of a greenfield property that will not impact current commercial and operational businesses.
- Plant outfall location at Chippawa Creek, east of the QEW
    - adjacent to the site which facilitates a shorter outfall pipe
    - favourable flow conditions to receive the treated effluent
- Associated sewer strategy

- Sewer alignment from South Side High Lift Pumping Station to the new WWTP site is still being confirmed as part of Phase 3 of the EA.
- Modifications to the Chippawa system are not included in this part of this phase of the project, but could potentially be incorporated as part of the long term growth. This could include decommissioning of Low Lift PS and a gravity pipe from the new plant to Chippawa along the south side of Chippawa Creek. The conceptual design of the new WWTP will include flexibility for this future option.

Now in Phase 3 of the Class EA, the Region project team is conducting further detailed investigations to support the decisions regarding design and construction concepts for the preferred solution. These site-specific studies include a more in-depth analysis of the natural environment; potential for soil contamination through an Environmental Site Assessment; Stage 1/2/3 and potentially Stage 4 Archaeological; Cultural Heritage Impact Assessment; and Geotechnical/ Hydrogeological Field Investigations. The Archaeology Assessment is currently ongoing and the Region has recently been made aware of a previously completed archaeology report, absent from the Ministry database, for the preferred site location. This report outlines the need for a Stage 3 and potential Stage 4 investigations at certain areas within the site. At this time the magnitude and associated costs of these investigations is not known. The project team is working with the archaeological consultant, Wood, to develop the best and most cost effective solution.

To support Provincial approvals, additional site-specific studies relating to: Noise and Odour Impact and Mitigation Assessment; Assimilative Capacity Detailed Modelling and Assessment; Traffic Impact Assessment; and detailed Costing Analysis will also be undertaken. These additional studies are necessary to confirm the site, orientation of the facilities on the property, and refine the sewer alignments.

The Class EA is anticipated to be complete and filed for public review in early 2021.

Project Descriptions for the 2021 Capital Program

The following describes each project associated with the new WWTP. Each project relies on the design and construction of the new WWTP.

1. South Niagara Falls Wastewater Treatment Plant – Land Acquisition (2021), Design (2021), and Construction (2024) - the new South Niagara Falls Wastewater Treatment Plant, with a capacity of 30 MLD that will service existing

and future growth areas in Niagara Falls, south of Lundy's Lane and south Thorold.

2. New South Niagara Falls WWTP Outfall – Design (2021) and Construction (2024) of a new outfall for the South Niagara Falls Wastewater Treatment Plant
3. New Trunk Sewer Connecting to the South Niagara Falls WWTP – Design (2021) and Construction (2024) of the new trunk sewer from the existing South Side High Lift Pumping Station to the new South Niagara Falls Wastewater Treatment Plant is necessary to support conveyance of flows. The alignment is currently being refined with options along Montrose Road, Oakwood Drive or the OPG corridor. The sewer will be tunneled from the upstream location, under the Welland River near the QEW bridge crossing and connect into the headworks of the plant. The sewer will support decommissioning of multiple sewage pumping stations and provide flexibility for gravity servicing of future growth areas.
4. (Thorold) New South West Trunk Sewer Connecting Thorold to the South Niagara Falls WWTP – Design (2023) and Construction (2025) of the new south-west trunk sewer to convey sanitary flows from the new Black Horse pumping station forcemain in Thorold, southerly to the existing sanitary sewer network in southwest Niagara Falls.
5. (Thorold) New Black Horse PS – Land Acquisition (2021), Design (2023), and Construction (2025) for the upgrades (or new) Black Horse Pumping Station in Thorold. This will reverse flows from the St. Catharines sanitary system to the new South Niagara Falls WWTP.
6. (Thorold) New Black Horse PS Forcemain – Design (2023) and Construction (2025) of a new 400mm diameter forcemain from the new Black Horse pumping station.
7. (Thorold) Peel St PS Upgrades and New Forcemain - Design (2023) and Construction (2025) of the Peel St Pumping Station upgrades and forcemain replacement in Thorold. This will reverse flows from the St. Catharines sanitary system to the new South Niagara Falls WWTP.
8. South Side High Lift PS Decommissioning – Design (2027) and Construction (2027) of the decommissioning of the South Side High Lift Pumping Station, the flows will be redirected south to the new South Niagara Falls Wastewater Treatment Plant via a new gravity trunk sewer. This presents long-term operations and maintenance cost savings for the Region by eliminated a major pumping station.
9. Garner Rd, Oakwood Dr, Grassy Brook PS Decommissioning – Design (2027) and Construction (2027) of the decommissioning of the Garner Rd, Oakwood Dr, and Grassy Brook Pumping Stations. As part of the overall servicing strategy for the new South Niagara Falls Wastewater Treatment Plant the Pumping Stations will be decommissioned as the catchment areas will have the ability to flow by gravity to the new trunk sewer along OPG corridor, Oakwood Dr or Montrose Rd.

This presents long-term operations and maintenance cost savings for the Region by eliminated a major pumping station.

10. Niagara Falls McLeod Rd Overflow Diversion – Design (2026) and Construction (2027) of the interception and diversion of the existing Niagara Falls McLeod Rd Overflow. This existing overflow will be connected to the existing sanitary system and ultimately flow to the new WWTP.

Project Resources

How We Flow (Master Servicing Plan) (https://www.niagararegion.ca/2041/master-servicing-plan/default.aspx)

SNF WW Solutions Project Webpage (https://www.niagararegion.ca/projects/south-niagara-falls-treatment-plant/default.aspx)

Alternatives Reviewed

N/a

Relationship to Council Strategic Priorities

The SNF WW Solutions capital program achieves several priorities of the 2019-2022 Council Strategic Plan, including the following:

- Supporting Businesses and Economic Growth - The servicing strategy will help support growth by providing new servicing options south of Welland River.

- Healthy and Vibrant Community – Improving wastewater infrastructure in south Niagara Falls supports the Growth Plan for the Greater Golden Horseshoe. This project protects what matters most by improving Niagara's ability to manage wastewater and help mitigate future impacts of climate change that translates into the effective safeguarding of our Great Lakes and generating healthy sustainable communities.

- Responsible Growth and Infrastructure Planning – Planning for growth enables Niagara to remain open for business, strengthens local employment, and delivers the critical infrastructure that meets the needs of residents and businesses

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

Prepared by:
Lisa Vespi, P.Eng.
Senior Project Manager
Public Works Department

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

Submitted by:
Ron Tripp, P.Eng.
Acting Chief Administrative Officer

This report was prepared in consultation with Dan Ane, Manager Program Financial Support, and reviewed by Tony Cimino, Associate Director W-WW Engineering and Joseph Tonellato, Director Water and Wastewater Services.

Appendices

Appendix 1 Project Budgets and Funding

Appendix 2 Project Budget Cost and Scope Comparison

THE REGIONAL MUNICIPALITY OF NIAGARA
COMMITTEE OF THE WHOLE AGENDA

COTW 4-2020

Thursday, September 24, 2020

6:30 p.m.

Meeting will be held by electronic participation only

All electronic meetings can be viewed on Niagara Region's Website at:

https://www.niagararegion.ca/government/council/

Due to the efforts to contain the spread of COVID-19 the Council Chamber will not be open to the public to attend meetings until further notice. To view live stream meeting proceedings, please visit: niagararegion.ca/government/council

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Pages

1. CALL TO ORDER

2. DISCLOSURES OF PECUNIARY INTEREST

3. ITEMS FOR CONSIDERATION

   3.1 PW 39-2020 — 2 - 42
   South Niagara Falls Wastewater Treatment Plant Update

   A presentation will precede the consideration of this item.

4. OTHER BUSINESS

5. NEXT MEETING
   The next meeting is scheduled for Thursday, October 1, 2020 at 6:30 p.m.

6. ADJOURNMENT

If you require any accommodations for a disability in order to attend or participate in meetings or events, please contact the Accessibility Advisor at 905-980-6000 ext. 3252 (office), 289-929-8376 (cellphone) or accessibility@niagararegion.ca (email).

South Niagara Falls Wastewater Treatment Plant Update

Committee of the Whole
PW 39-2020

September 24, 2020

Chris Hamel, Project Manager GM BluePlan and

Dan Ane, Manager Program Financial Support, Niagara Region

South Niagara Falls Wastewater Solutions Schedule C Class Environmental Assessment

Wastewater Program and Cost Estimate Update

Thursday, September 24, 2020

Zoom Meeting

Workshop Agenda

1. Project Background and Validation
    1. 2017 Master Servicing Plan (MSP) Overview and Recommendations
    2. Projected Growth
    3. SNF WW Solutions Class Environmental Assessment
2. Cost Estimate
    1. Principles, Accuracy and Approach
    2. Class D Cost Estimate
3. Financial Review
    1. Budget Implications
    2. Operating Savings & Impact
4. Next Steps
5. Q & A

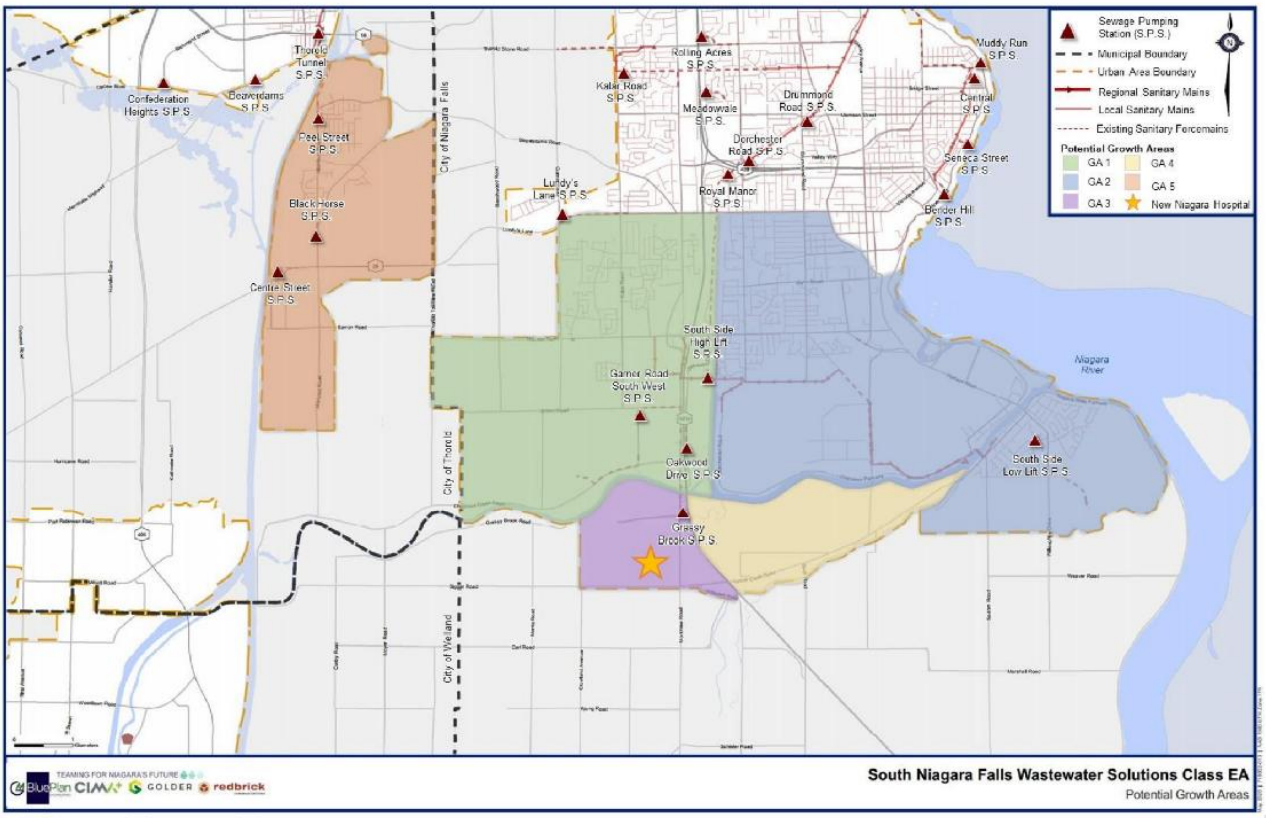
2017 MSP Overview and Recommendations

- 2041 growth projections were developed through the Municipal Comprehensive Review (MCR) process, approved by Council and utilized in the Master Servicing Plan (MSP) Update
- The MSP developed Region-wide servicing strategies and established the Niagara Falls strategy including the new WWTP
- Niagara Falls Strategy:
  - Go North vs New Plant
  - Rationale for selection (financial, technical feasibility of expanding existing system, development pressures/growth)
  - Foundation moving forward into Class EA
- Identified need for new South Niagara Falls Wastewater Treatment Plant (SNF WWTP)
- Recommended moving forward to Schedule C Class EA

Cost Benefit Validation

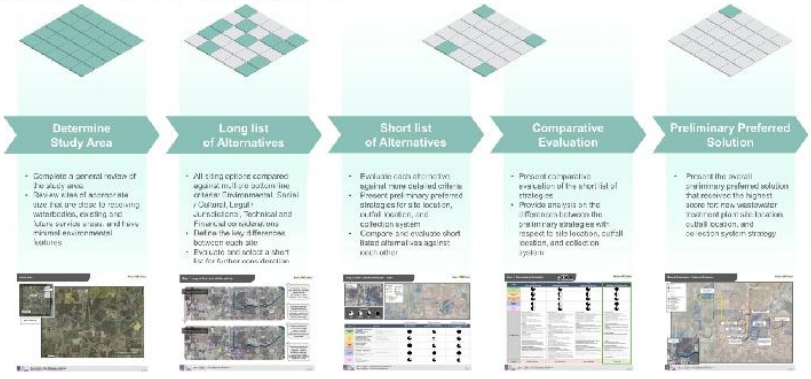
- MSP undertook a cost benefit evaluation of the Go North vs New Plant options
- Class EA has validated the Cost Benefit Analysis
- New Plant was selected as preferred
  - Higher capital costs and higher lifecycle costs
  - Better financial risk management (capacity phasing, greenfield construction)
  - Greater flexibility and ability to service long term growth
  - More efficient and cost effective post period capacity
  - Avoids difficult and costly construction related to existing infrastructure within urban developed areas as well as site constraints at the existing Stanley Ave WWTP
- SNF strategy provides broader benefit to support servicing and mitigating system issues in Niagara Falls including North NF and Chippawa, Thorold, NOTL, and St. Catharines

Projected Growth



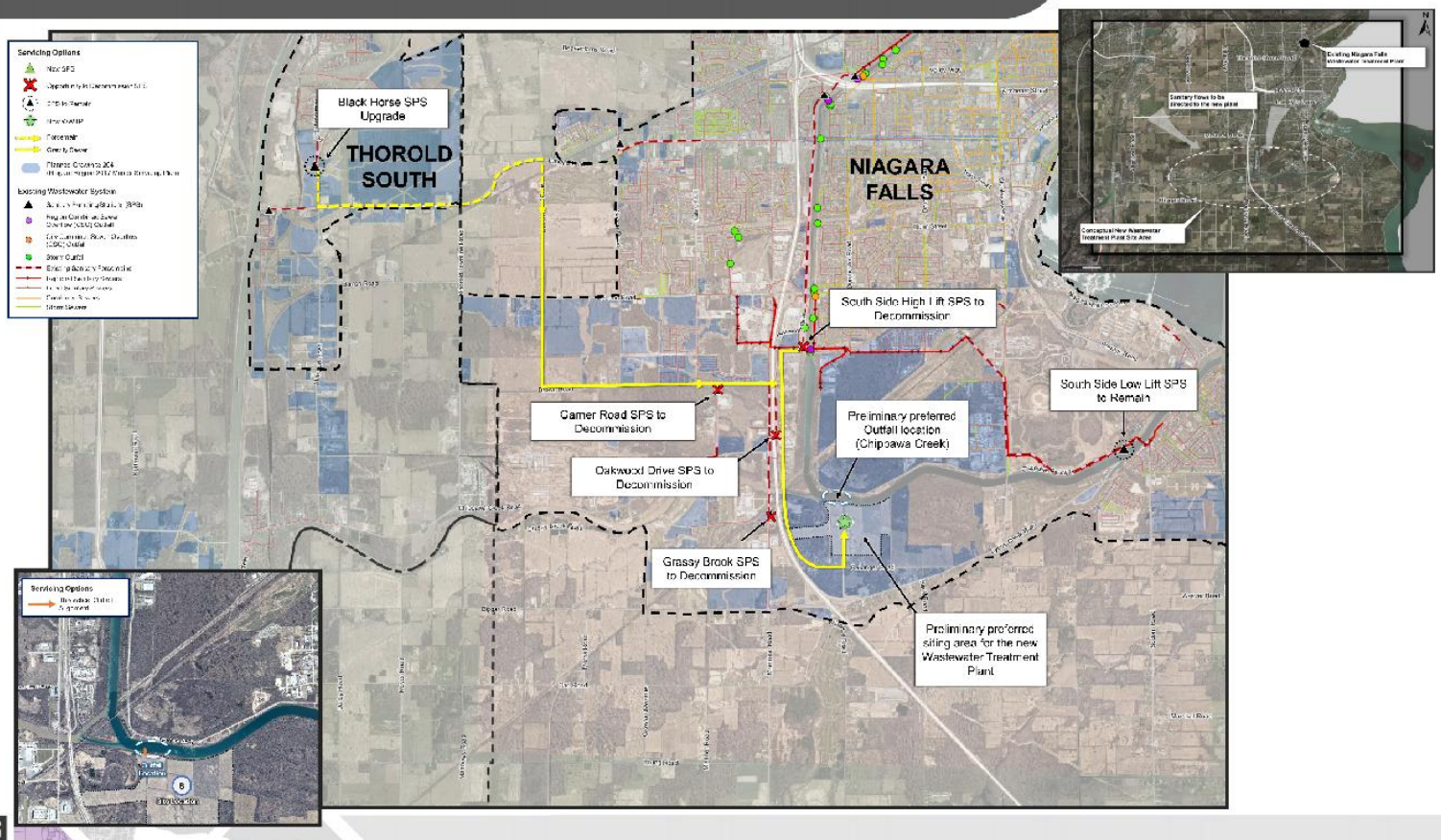
SNFWWS Class EA Process Overview

- Pre-Consultation and Stakeholder Engagement
- 3 Public Information Centres (PICs) to date, 1 more anticipated in late fall 2020 or early 2021
- Extensive Development and Evaluation of Alternatives
  - Treatment Plant Site
  - Collection System Strategy
  - Outfall Location

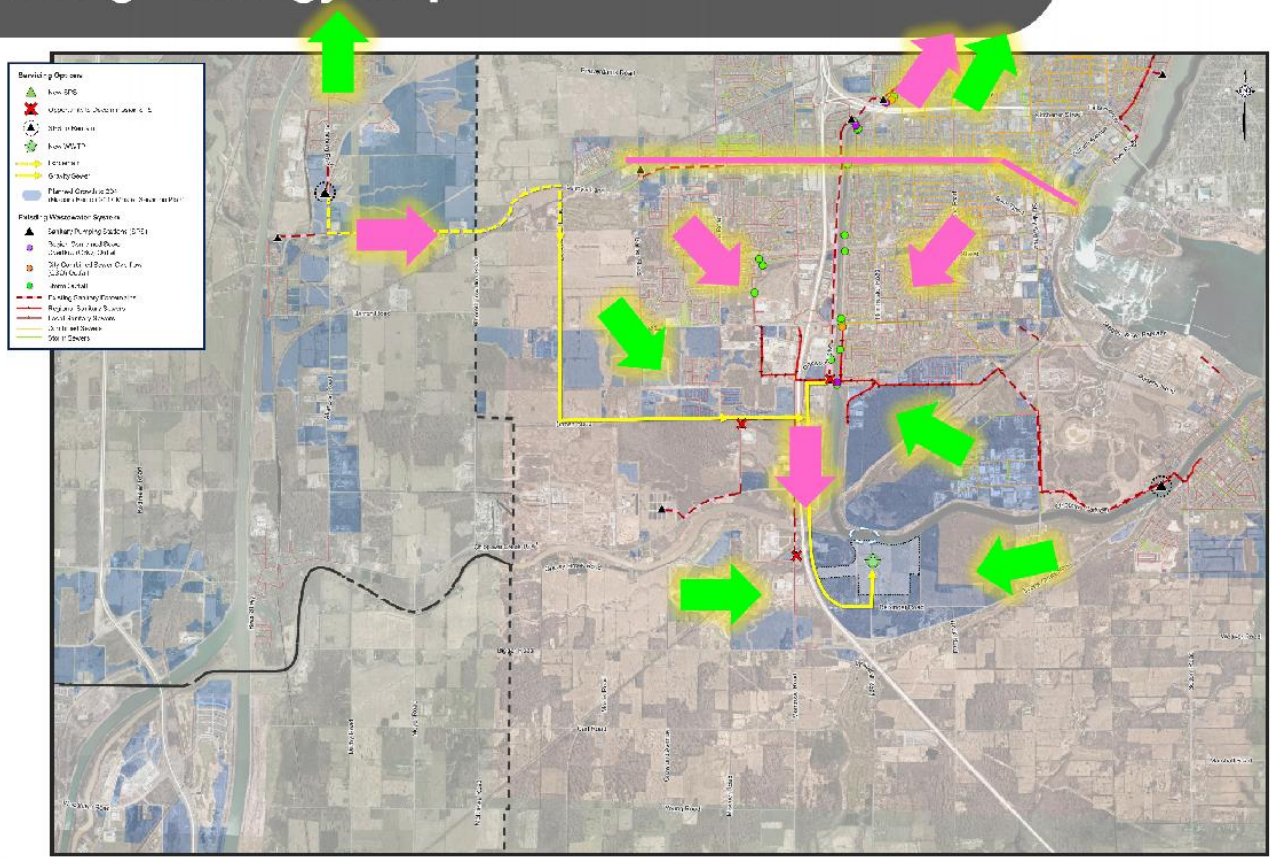


- Presented Preliminary Preferred Solution to the Public on March 11, 2020
- Supported Preferred Solution – Moving forward with Design Concepts

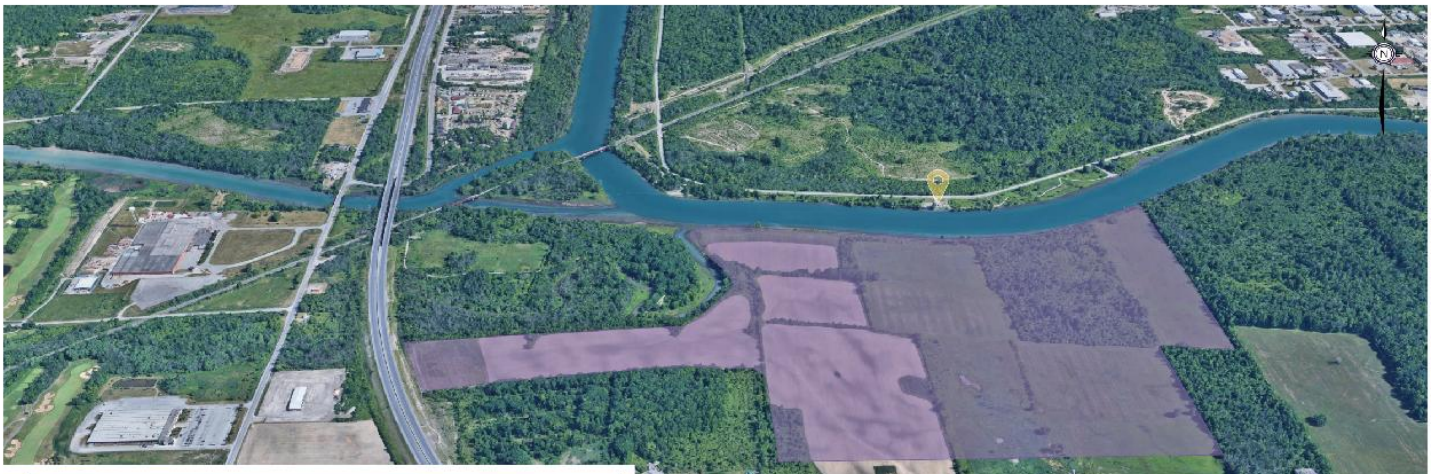
SNFWWS Class EA Preferred Solution

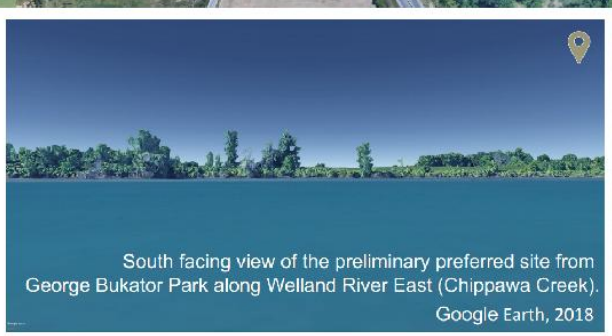


Servicing Strategy Map



Preferred WWTP Site



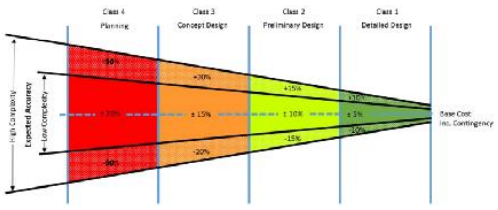


South facing view of the preliminary preferred site from George Bukator Park along Welland River East (Chippawa Creek).
Google Earth, 2018

Cost Estimation Principles and Accuracy

- Cost estimating accuracy will improve as a project moves through concept to design stages
- The MSP cost estimates are truly planning level and in some cases have limited information for costing
- Class EA cost estimates will start at planning/conceptual level in Phase 2 and will continue to improve in accuracy to conceptual/preliminary design level in Phase 3
- The Class EA process will result in complete refinement of the projects technically (design basis) as well as result in a more accurate budget level cost estimate

	Estimate Class	Estimate Class Description	End Usage / Major Deliverables	Accuracy Range (+/-)	
				Low Complexity	High Complexity
D	Class 4	Planning Cost Estimate	Concept Screening; justification for project planning funding. Minimum information requirements.	20	50
C	Class 3	Concept Design Cost Estimate	Basis for budgeting and approvals.	15	20
B	Class 2	Preliminary Design Cost Estimate	Used for project cost control during design; initial detailed estimate.	10	15
A	Class 1	Detailed Design Cost Estimate	Final cost review in preparation for construction; tender ready.	5	10



Cost Estimation Approach

- Unit rates
- Specific project review
- Reference to previous/ongoing Region projects
- Industry benchmark
- Include construction as well as internal/external engineering costs etc
- Contingency
- Current year dollars

Class D Cost Estimate

Project	Total Project Cost ($M)
New SNF WWTP (NF)	$ 192.7
New SNF WWTP Outfall (NF)	10.6
New South West Trunk Sewer - South Niagara Falls (NF)	85.3
New South West Trunk Sewer (NF/TH)	9.8
Black Horse Sewage Pumping Station (SPS) (TH)	4.4
Black Horse Forcemain (TH)	12.7
Peel Street SPS Upgrades and Forcemain (TH)	5.9
South Side High Lift Pumping Station Decommissioning (NF)	0.6
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	1.1
McLeod Road Overflow Diversion (NF)	1.9
Total SNF Projects	**$ 325.1**

- Estimate developed in 2021$ then indexed to future year $
- Includes studies, engineering, internal, property and construction
- Strategy update results in some new post period development charge costs

SNFWWS Strategy Benefits

- The Class EA has established an optimized strategy that balances the needs for the plant, the outfall and collection system
- Meets the capacity needs for growth and addresses current limitations
- While costs have increased since the MSP, the long term strategy is enhanced and other efficiencies and cost savings have been gained
- The updated wastewater strategy that will provide improved level of service, enhanced ability to address wet weather flows, and greater flexibility for efficient servicing in the future
    - Incoming trunk sewer is at a depth to support servicing of broader growth areas including the Chippawa area
    - Trunk sewer is located to support future servicing east of the QEW, west of the QEW and other potential growth areas
    - Trunk sewer sizing will support managing wet weather flows to the plant (storage)
    - South Thorold infrastructure located to efficiently service future growth
- Reduction of existing Operation and Maintenance costs from SPS Decommissioning
- Reduction of Lifecycle costs (sustainability upgrades, major maintenance/rehabilitation/replacement) from SPS Decommissioning

Additional Class EA Tasks

- Currently completing Phases 3 and 4 of the Class EA
    - Undertaking more detailed investigations based on the preferred site and preferred collection strategy
    - Confirming Montrose Road or Oakwood Drive or OPG corridor for trunk sewer alignment
    - Completing more detailed environmental, cultural/heritage and archaeological investigations on the site and for the trunk sewer alignment
    - Completing more detailed geotechnical/hydrogeotechnical investigations on the preferred strategy
    - New archaeological information has come forward related to the site that will guide next steps
    - Confirming orientation of the facilities on the site as well as the outfall location at Chippawa Creek
    - Minimizing risk and surprises in next steps of implementation
    - Completing conceptual design by early 2021
- This will result in refinement of the strategy
- This will also result in another update to the program Cost Estimate in early 2021

Budget Implications

- The SNF capital projects and required debt financing can be accommodated within a 2% rate increase in 2021 with the following key strategies:
  - Temporary reduction in the operating budget transfer to the WW capital reserves to provide required operating budget for Plant debt charges and operating costs.
  - Use of plant debt charge and operating budget will fund "pay as you go" infrastructure until the plant is operational
  - 5.15% rate increase from 2022 – 2028 required to re-establish the transfer to capital reserves to $40 million from $21 million in 2020 to support the asset management plan

Project Budgets and Funding

Project	Development Charge %	Cost: Total Project Cost	Cost: Previously Approved	Cost: 2021 Budget Request	Funding: External Funding	Funding: DCs (Debt)	Funding: Debt	Funding: Total
New SNF WWTP (NF)	65%	$ 192.7	$ (4.9)	$ 187.8	$ 108.0	$ 51.8	$ 27.9	$ 187.8
New SNF WWTP Outfall (NF)	65%	10.6		10.6		6.9	3.7	10.6
New South West Trunk Sewer - South Niagara Falls (NF)	70%	85.3		85.3		59.7	25.6	85.3
New South West Trunk Sewer (NF/TH)	85%	9.8		9.8		8.3	1.5	9.8
Black Horse Sewage Pumping Station (SPS) (TH)	85%	4.4		4.4		3.7	0.7	4.4
Black Horse Forcemain (TH)	85%	12.7		12.7		10.8	1.9	12.7
Peel Street SPS Upgrades and Forcemain (TH)	85%	5.9		5.9		5.0	0.9	5.9
South Side High Lift Pumping Station Decommissioning (NF)	50%	0.6		0.6		0.3	0.3	0.6
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	50%	1.1		1.1		0.6	0.6	1.1
McLeod Road Overflow Diversion (NF)	50%	1.9		1.9		0.9	0.9	1.9
Total SNF Projects		**$ 325.1**	**$ (4.9)**	**$ 320.2**	**$ 108.0**	**$ 148.2**	**$ 64.0**	**$ 320.2**

(NF) - Niagara Falls
(TH) - Thorold

Debt **$212.20**

- A key assumption in the funding of the SNF WWTP is the estimated $108M of external funding
- The remaining $212.2M of funding will come from Debt and Development Charges; future DC's will help fund a portion of the debt servicing cost

Debt/Grant Funding Impacts

- Debt Issued may impact the S&P Ratio
  - Consolidated Region Debt - $695.5M (Region - $379.5M, LAM - $316.4M)
  - End of Q2 2020 - $273.3M of Regional unissued debt

- The project is contingent on grant funding in order to proceed with "Phase 2" capital budgets which include all project costs not related to design or land acquisition

2021 Initiation of Funds

- Recommendation to initiate the following capital projects in 2021:

Project	2021 Action	Initiated Budget
SNF WWTP	Land acquisition and design	$26,176,240
New SNF WWTP Outfall	Design	$780,400
New South West Trunk Sewer	Design	$6,264,011
Black Horse SPS	Land acquisition	$600,000
Total		**$33,820,651**

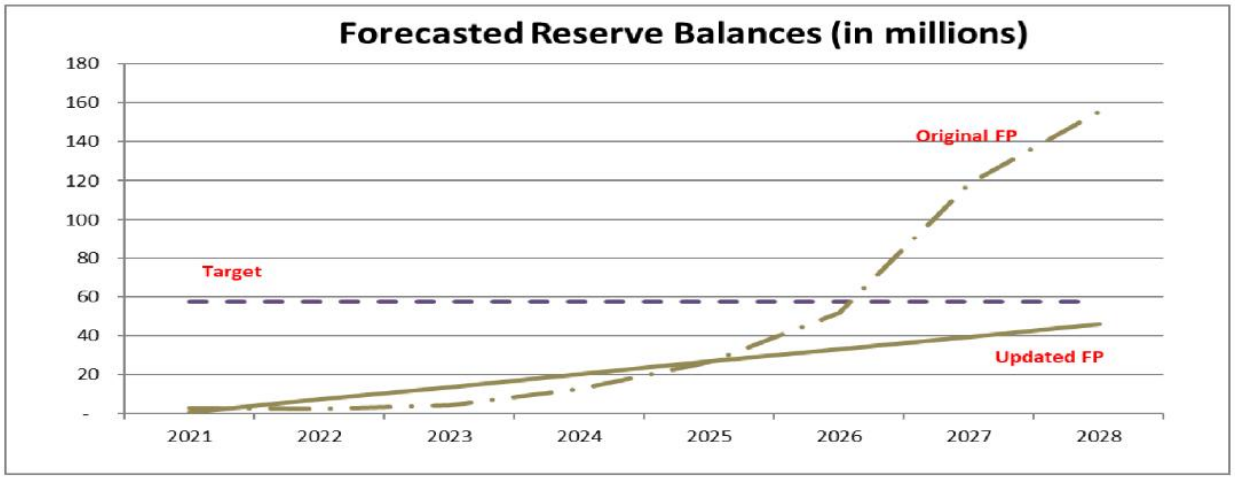
- Further initiation of capital budget for "Phase 2" components would be done when external funding is confirmed

Changes to Financial Plan – Operating Impacts

Description	Original Financing Strategy	Updated Financing Strategy	Variance	Notes
Annual Debt Charge Budget (net of DC recovery)	N/A	$3.8M	($3.8M)	• $12.5M Debt Charge less ($8.7M) DC Recovery = $3.8M
Transfer to WW capital	$21M	$12.8M	$8.2M	• Reduction required to offset debt charges and operating impacts of SNF projects and maintain 2% budget strategy
Annual Operating, maintenance and lifecycle costs	N/A	$6M	($6M)	• Includes operational, maintenance, staffing costs associated with SNF projects
Annual Operating Savings	N/A	($.77M)	$.77M	• Savings associated with decommissioning of sewage pumping stations

Forecasted W/WW Reserve Balances

- Target - **$56 M**
- Revised WW forecasted reserve balance of **$46 M** in 2028
- Annual contributions to reserve in 2028 - **$40 M**



Overview

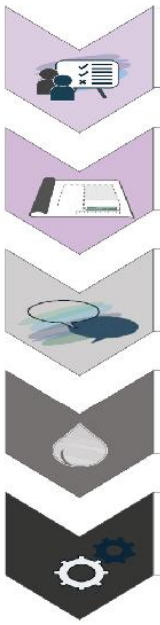
- Clarity on cost estimating:
  - Current year dollar estimates
  - Indexed future year dollar estimates
  - Clarity on how these estimates are accounted for in budgeting, rates, development charges
- Acknowledge potential changes in scope / costs moving forward through the Class EA process and subsequently the detailed design process
- Further development and mitigation of project risks
- Understanding the full program budget

Key Take-Aways

- SNF WW Program is a significant infrastructure program for the Region
- A sustainable financial plan has been established to deliver the program
  - Balancing funding, DC, budget impacts
  - Region can continue to support ongoing capital programs and future budgets
- SNF WW Program provides benefit to multiple municipalities
- The infrastructure is strategically located to support key planned and future growth areas
  - South Niagara Hospital
  - Active development interests
- Class EA process has been positive and successful to date
- Critical component of the Region's Strategic Plan and "How We Grow"

Class EA Process Next Steps

Schedule:



March 2020: Public Information Centre No. 3
(Present preliminary preferred plant site, outfall location and collection strategy)

Spring / Summer 2020: Validate preferred solution and work through conceptual design

Fall 2020/Early 2021: Public Information Centre No. 4 (Select preferred design concept)

Early 2021: Environmental Assessment completion

2022: Post EA - Design & Construction

2027: Post EA - Estimated plant in-service date

BluePlan ENGINEERING

V4.6.4

REGIONAL MUNICIPALITY OF NIAGARA

SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

Council Reports

Committee of the Whole: August 5, 2021
Deferred to September 9, 2021

Subject: South Niagara Falls Wastewater Treatment Plant – Budget and Property

Report to: Committee of the Whole

Report date: Thursday, August 5, 2021

Recommendations

That a budget increase to the capital projects associated with the new South Niagara Falls Wastewater Treatment Plant **BE CONSIDERED** as part of the 2022 budget process.

Key Facts

- The purpose of this report is to inform Council of the project status, provide an updated budget estimate for the capital projects associated with the new South Niagara Falls Wastewater Treatment Plant (SNF WWTP) including operating budget impacts, and ask Council to consider these project adjustments with the 2022 Capital Budget.
- Region staff will be presenting an offer to the property owner of the preferred site for the new WWTP based on the full narrative appraisal report prepared by an AACI-accredited appraiser. If accepted, staff will request approval to acquire the property from Council through a separate report. In the event that an agreement with the property owner cannot be reached, staff will request approval from Council through a separate report to initiate formal expropriation proceedings to acquire the property on a compulsory basis in accordance with the Expropriations Act.
- The new South Niagara Falls WWTP was recommended from the 2016 Water and Wastewater Master Servicing Plan (MSP) Update and endorsed by Regional Council on June 8, 2017.
- GM BluePlan Engineering Ltd is completing the Schedule 'C' Class Environmental Assessment (Class EA) for the program and is continuing to refine the recommendations from the MSP. The program provides a holistic study addressing the new wastewater treatment plant, major trunk sewer extensions, and the overall wastewater strategy for Niagara Falls, and for parts of the City of Thorold and Town of Niagara-on-the-Lake.

- In March 2020, the Region presented the selected preferred solution at a Public Information Centre (PIC) as part of the Class EA process, with the preferred site on Reixinger Road, east of the QEW.

- In September 2020, the Region and consultant project team provided Council a presentation on the project overview and cost estimate update to support the 2021 budget.
- Class D planning level cost estimates (+/- 50% level of accuracy) indicate that the total capital cost for the entire program could be $399.64M (indexed to the year of cashflow), which includes design, property acquisition, construction and commissioning of all components. This represents an increase of approximately $88.85M which is mitigated by a budget reduction of $14.30M for two of the projects for a combined impact of $74.55M
- Significant fieldwork and conceptual design is underway to improve the certainty of the cost estimate.
- The majority of the budget increase is growth related and the project revised estimates will be included in the 2021 Development Charge background study and 2022 DC by-law
- To better understand risks and costs associated with the preferred solutions, the project team has completed several field investigations during the Class EA, including geotechnical, hydrogeological, environmental site assessment, cultural heritage and archeology. The archaeological assessment has been partially completed on the preferred site. The progress of the remaining field work has been impeded by weather. The results are needed in order to fully understand the archeological potential on the site. The intention is to complete the work by the end of August 2021.
- Construction of most projects, including the new WWTP and trunk sewer are not anticipated to commence until 2023 and 2024, respectively.
- Region is actively pursuing funding from provincial and federal government.

Financial Considerations

The total approved budget for the SNF WWTP projects is $325.1M across ten different projects. As of July 18, 2021, there is approximately $2.8M spent and committed in the projects. The expenditures to date primarily consist of Environmental Assessment costs.

Of the approved budget of $325.1M , approximately $38.7M is initiated for the Class EA, land acquisition and design phases of four of the SNF WWTP projects (outlined in PW 39-2020). The remaining budget dollars will require subsequent reports to Council to initiate funds closer to the construction phases, with initiation contingent on confirmation of external funding. Staff continues to advocate with various levels of government for external funding to support the project.

Based on revised estimates to four of the SNF WWTP projects as described below, a total gross increase of $88.85M will be requested through the 2022 Capital Budget process. There are also two projects with revised cost estimates less than the approved budgets in the amount of $14.30M. The budget for those projects will be appropriately reduced to reflect the revised estimated value. Therefore the net increase to the SNF WWTP budgeted gross expenditures is $74.55M. The full impact of the changes to the budget including funding sources is provided in Appendix 1.

The primary reasons for the increase in cost from the 2020 estimates as outlined in PW 39-2020 to the current 2021 estimates are as follows:

- The 2020 estimates were based on the conceptual information prepared during Phase 2 of the Class EA process. Phase 3 of the Class EA process is nearing completion. Detailed information on the infrastructure and facility requirements has been utilized to develop the current cost estimates.
- Most significantly, new information has been made available regarding the geotechnical conditions (soils) in the area for the WWTP site as well as the trunk sewer alignment. The WWTP site has soil conditions that will require deeper pile foundations and additional costs. The trunk sewer also has difficult soil conditions. The detailed geotechnical work undertaken under Phase 3 indicate these conditions are prevalent across the study area. Based on constructability reviews during the Class EA, a risk management and cost management plan has been developed for the project. Construction teams will be provided information regarding existing conditions, hydraulics and connections to allow the teams to determine their preferred methodology and approach to construct the infrastructure and manage costs. The geotechnical conditions represent an increase from 2020 of approximately $20M at the WWTP site and $15M for the trunk sewer.
- The preliminary design of the new WWTP included best practice review, staff review, and project team workshops. The scope of the facility was optimized to

provide long term benefit for operation and maintenance, consideration for green / energy applications while being mindful of project budget. There are also some elements that have been sized to support future expansions. Areas that contributed to the additional costs (represents $15 million increase) include:

  - Optimal sizing for the inlet pumping station, headworks, digestion, and disinfection
  - Waste activated sludge thickening for improved operations
  - Enhanced road network, RV station and hauled sludge facility to support Region-wide activities

- Capital inflation rate of 4% per year dependent on timing of project cash flow/construction has been estimated

The appraised value of the property is within the approved budget allocated for property purchase. The final purchase price of the property has not been finalized or negotiated. It should be noted that the overall wastewater strategy and capital cost estimates continue to be reviewed and refined under the Class EA process. Finalized Class C cost estimates (with +/- 30% level of accuracy) will be provided at the end of the Class EA.

Cost estimates have been reviewed as part of constructability reviews. Final Class C estimates will be reviewed by a certified cost estimator at the completion of the Class EA. Further to this cost estimate, the costs will continue to be refined and estimated with greater accuracy and detail as the projects move through detailed design and prior to tendering for construction. The cost estimates have been developed in accordance with Canadian construction cost estimation standards and industry best practice.

It should also be noted that during the recent year, particularly influenced by conditions related to COVID-19, it has been difficult to provide improved accuracy for the cost estimates as well predict forward looking indices. There has been significant fluctuation in the construction market conditions including material and equipment costs as well as tendered prices received. There is potential that these fluctuations could persist over the next few years that could further impact the program costs.

The incremental project budget increase of $74.55M is to be funded as follows:

- $36.67M external funding
- $37.88M debt

Of the incremental debt, $29.24M will be recovered by Development Charges (DCs) over the term of the debt (30 years). The difference of $8.64M will be funded by the wastewater operating budget and rate requisition. Note that staff is monitoring the affect of debt on its Standard and Poor Ratio (S&P). Impacts on the S&P rating will be assessed by staff with the 2022 Capital Budget at Budget Review Committee of the Whole in October.

As discussed in PW 39-2020, staff are budgeting for 2/3 of the estimated plant costs as externally funded. External funding estimates are in alignment with the funding formula for the new Niagara-on-the-Lake WWTP of 2/3 grant funding from the Provincial and Federal sources. External funding pertaining to the incremental budget increase of plant construction is estimated at $55.01M x 2/3 = $36.67M.

The 2/3 grant estimate excludes land and design costs as expenditures incurred before formal Federal/Provincial approval were historically ineligible costs under prior funding programs (and land costs in itself not typically eligible for funding). The total revised SNF WWTP budget excluding land and design costs (assuming the budget increase is approved with the 2022 budget) is $217M x 2/3 = $145M total external funding budget.

The revised total estimated capital costs of the projects are $399.64M. The revised total amount of debt to fund the SNF projects is approximately $253.01M. Of this debt, $177.45M will be recovered by development charges over the life of the debt (30 years). The difference of $75.56M will be funded by the operating budget and rate requisition.

To fund the incremental capital budget of $74.55M required for the SNF WWTP projects, an additional $0.6M of non growth related debt charges is required to be funded from the operating budget. This will be accommodated by an equivalent reduction to transfer to capital reserves similar to the 2021 strategy. Staff is preparing the 2022 operating budget on the premise of a 5.15% rate increase in accordance with the W/WW financial plan as per CSD 40-2021. The incremental operating budget impacts are outlined below:

Table 1 – Summary of Annual Operating Budget Impact Changes

Description	2022 Financing Strategy	2021 Financing Strategy	Difference
Annual Debt Charge Budget (net of DC recovery)	$15.0 M (10.6) M $4.4M	$12.5 M (8.7) M $3.8M	$0.6M
Transfer to WW Capital	$12.2M	$12.8M	($0.6M) *
Plant Operations	$5.2M	$5.2M	0

* Reduction in transfer to reserves required to offset increase in debt charges

In accordance to the strategy approved in PW 39-2020, the incremental $0.6M of net debt charges will be transferred to the wastewater capital budget to fund replacement of existing infrastructure within each years capital budget until those funds are required for operating purposes. The above increased debt charges/contributions to capital reserve will be accommodated within the 5.15% financial sustainability plan annual increases.

With these revised capital budgets, the estimated impact on wastewater development charges levied to developers as part of the 2022 DC background study are an increase of 46% assuming all else being equal in the 2017 DC background study. For context, the impact of the SNF WWTP projects estimated an increase of approximately 34% based on project costs included in the 2021 capital budget (increase of 12%). The total increase on residential and non-residential DCs are estimated at 11% and 13% respectively assuming all else being equal in the 2017 DC background study and will be subject to change as the 2022 DC background study is developed.

Given the new information and the 2051 planning basis moving forward, the WWTP and associated projects have been re-evaluated. This has resulted in a change in proportion of costs attributed to Benefit to Existing (BTE), DC eligible, and Post Period Benefit/Out of By-Law (OBL). The DC cost proportions will need to be further reviewed as part of the current Niagara Region 2021 Master Servicing Plan Update and finalized at that time using best available information on the cost estimates and planning projections.

Analysis

Project History

As part of Niagara 2041, there was an update to the Water and Wastewater Master Servicing Plan (MSP). Niagara Region retained GM BluePlan Engineering Ltd. (GMBP)

to review, evaluate and develop water and wastewater servicing strategies for all servicing within the urban areas of the Region. The MSP Update used updated population and employment growth forecasts based on a 2041 planning horizon. Niagara Region is in the early stages of the current 2021 MSP Update which is looking at potential growth out to 2051. Based on the preliminary stages of the Niagara 2051 planning review, the implementation and timing of the preferred solution continues to be supported and is required to support growth.

In Niagara Falls, there is not enough capacity in the existing sewer system nor at the existing treatment plant to meet the increasing system demands resulting from growth as well as the increased wet weather flows due to aging infrastructure and climate change. The SNF Servicing Solution is essential to unlocking the development potential in the broader South Niagara area.

The ability to redirect existing flows to the south, provide additional capacity in the new trunk sewer, provide flexibility for storage in the trunk sewer, and ultimately treat the wastewater flows at the new WWTP all contribute to a significant wet weather management program. In addition, the location of the new WWTP will provide flexibility for the potential for additional wet weather management through potential connections of other service areas such as Chippawa.

Through the analysis undertaken as part of the Class EA process, it is estimated that the new South Niagara Wastewater Solutions strategy, will result in a reduction of over 60% of wet weather volume overflow to the environment.

Development Opportunities

There are increasing development pressures and a strong interest in the South Niagara Falls area for servicing capacity, which is currently impacted by wet weather constraints. The proposed capital program is anticipated to provide the much needed servicing capacity to unlock the development potential in this area. Some developments include Thorold South/Rolling Meadows, Grand Niagara Secondary Plan, redevelopment of existing golf courses, including Oaklands Golf Club and other potential employment interests. The City of Niagara Falls is working on an overall Secondary Plan Study for the South Niagara Falls area with a servicing strategy to align the anticipated growth and optimize this new investment in infrastructure.

This new WWTP is integral to the overall growth servicing strategy that supports the anticipated residential and employment growth in the Niagara Falls, NOTL, and Thorold South service areas. This total growth is estimated to be over 75,000 people and jobs in the area out to the year 2051 with the new WWTP servicing approximately half of this growth along with the existing residents and businesses in South Niagara Falls and Thorold South. The new WWTP and collection system strategy is also considering potential long term growth beyond 2051. There are also ongoing discussions with the Region and City Planning Departments considering the potential for any settlement urban boundary expansions. As the planning for the new WWTP progresses, development interest in South Niagara Falls continues to increase.

The South Niagara Hospital represents a significant investment of approximately $1 Billion for health care in Niagara which will generate associated growth and development surrounding this area. The development along Fourth Avenue near the new St. Catharines Hospital is an example that demonstrates how a new Hospital is a catalyst for growth. The new WWTP will support this development area and timing of construction is being considered with intention to align in-service dates.

The capital program to support the new WWTP will provide greater flexibility for development servicing in St. Catharines, Niagara Falls, Thorold, and Niagara-on-the-Lake.

Environmental Assessment and Conceptual Design

In November 2018, in response to the recommendations from the MSP Update, the Region retained GMBP via a public, competitive bid process (2018-RFP-34) to complete a Schedule C Environmental Assessment (EA) and an enhanced conceptual design for the entire capital program associated with the new South Niagara Falls WWTP. This includes determination of the preferred site, outfall location and sewer alignments. Appendix 2 outlines the overall study area.

Since award, the team has been working diligently to develop a solution that will support servicing for growth, minimize sewage pumping stations, reduce combined sewer overflows and maximize flexibility for the future. The project team is continuing to conduct extensive consultation with key stakeholder groups, approval agencies, property owners, residents, and Indigenous communities. There have been three (3) public information centres held (May 2019, November 2019 and March 2020). The PICs were held prior to COVID-19 restrictions and were open house format with

representation from residents in the study area. The Region invited Councillors and media to dedicated sessions at each of the PICs.

As summarized in PW 39-2020, at the onset of the project, the project team reviewed the study area to determine suitable sites for the new WWTP that were the proper size, close to receiving waterbodies, close to existing and future service areas, and have limited environmental features. There were ten (10) long list site alternatives that were screened from a high level using multiple-bottom line criteria, including environmental, social-cultural, legal-jurisdictional, technical and financial. Four (4) site alternatives were screened for feasibility and were further evaluated using similar multiple-bottom line criteria. A map of the alternatives is available in Appendix 3. The following preferred solution was selected and presented to the public in March 2020:

- New WWTP site located at 6811 and/or 7047 Reixinger Rd.
- Plant outfall location at Chippawa Creek, east of the QEW
- New trunk sewer that will connect existing and future service areas from the existing South Side High Lift Sewage Pumping Station (SPS) to the new WWTP
- New SPS, forcemain and trunk sewer connecting existing and future services areas in South Thorold to the new WWTP
- Decommissioning of existing SPS in the study area that are no longer necessary with the implementation of the gravity sewer.

Throughout the study, the project team has actively been tracking and assessing project related risks. Specifically for due diligence, throughout 2020 and 2021, the project team conducted a comprehensive field study program to help better understand existing conditions and to support the preferred solution. This field study program is above the requirements of the Class EA, but is intended help manage risks and costs early on in the project. These site-specific field studies include archaeology, geotechnical, hydrogeological, natural environment, environmental site assessment (i.e. soil contamination) and cultural heritage. There is some remaining stage 2, as well as marine, archaeological assessment that is expected to be complete by August 2021.

These additional supporting investigations along with more detailed evaluation and engineering led to the refinement of the preferred solution. Supplemental field studies will still be required during detailed design.

The proposed trunk sewer alignment has been confirmed along Montrose Road, on the west side of the QEW. The gravity sewer ranges from 15 to 25m deep, and will connect the South Side High Lift Pumping Station catchment area to the new WWTP, with connections to existing and future growth areas throughout. The project team will formally present this information to the public at the Fall PIC.

The project team completed a comprehensive review and analysis of various layout configurations within the entire preferred site using the multiple bottom line criteria and assessing risks. The new WWTP and outfall pipe is proposed to be constructed solely at 6811 Reixinger Road. Utilization of the full property at 6811 Reixinger Road allows the Region to:

- Provide the maximize buffer from existing and future neighbouring properties
- Ensure available land is secured now for future expansion beyond the planning horizon
- Optimize WWTP layout and process configuration within the preferred site
- Minimize the required archaeological remediation and impact to environmental features.
- Coordinate the property purchase with a single land owner

The Ministry of Environmental Conservation and Parks (MECP) is undertaking amendments to the guidelines related to separation distances between wastewater facilities and sensitive land uses. The amendment includes increasing the minimum separation distance between WWTP similar in size to the new WWTP and sensitive land uses from 150 metres to 500 metres from property line. This is based on 10 years of MECP's documented complaint data for noise, dust and odour.

The project team has considered the applicable guidelines, together with the Region's need to accommodate ultimate build-out and minimize archaeological and environmental impact when developing the land needs for the WWTP site, the plant layout and the configuration within the preferred site.

With these additional risks and field conditions that were discovered and as cost estimates have been refined through the Class EA process, the project team reconfirmed the MSP recommendation of building a new WWTP as well as the proposed associated preferred solution from the EA.

For reference, the MSP had previously evaluated the new WWTP option versus constructing new trunk infrastructure through the existing built area of Niagara Falls and expanding the existing Stanley Ave WWTP ("Go North"). The Go North option would be similarly subject to inflation costs, anticipated poor soils, confined area for construction, additional property acquisition, technical challenges related to twinning Stamford Interceptor through the OPG corridor or surrounding area as well as managing social and environmental issues. The existing Niagara Falls WWTP on Stanley Avenue would require significant structural and process upgrades, management of poor soil conditions, and property acquisition would be challenging given the constraints at each property limit.

Building the new WWTP is still required to support growth, free up capacity in the existing system and at the WWTP, better manage wet weather flows and allow operational flexibility at the existing WWTP. Expanding the existing system through the City would result in significant impact to the businesses, residents, their properties, tourism, major streets and the environment and is anticipated to be subject to similar cost increases. Furthermore, 6811 Reixinger Road is the optimal solution of the short-listed sites when considering all evaluation criteria. The solution best supports growth in South Niagara Falls and Chippawa, has adequate land size to support expansions well into the future will be positioned to minimize impact to sensitive land uses and archaeological and environmental features and is close to receiving water body that MECP supports.

The above-noted review and evaluation supports the recommendation for the South Niagara Falls Wastewater Solution including new WWTP.
It should be noted that the updated servicing strategy outlined above has not yet been presented publicly and is considered draft. Once the final investigations have been completed and the site is confirmed, the project team will provide a full project update, including additional information and evaluation process, to the public and stakeholders. The final Public Information Centre (PIC) is tentatively scheduled for late fall 2021.

The Class EA will fully document the evaluation process as well additional preliminary design details is anticipated to be complete and filed for public review by early 2022.

Property Acquisition

Like with many public infrastructure projects, the acquisition of private property is required to accommodate the construction of the new SNF WWTP. Phase 2 of the Class EA process identified a larger block near Reixinger Road, east of the QEW. From the detailed review during Phase 3 of the Class EA process, it is recommended to locate the WWTP on 6811 Reixinger Road.

Municipally known as 6811 Reixinger Rd, the land comprises an area of 109 acres and is currently held by a single property owner. The land is zoned industrial and the Official Plan identifies it as Resort Commercial. The full 109 acres is required for the ultimate planning for the facility and it is anticipated the full acquisition will benefit the property owner by not severing the block of land and devaluing remaining areas.

Regional staff will be providing the owner with an offer based on an independent opinion of value in the form of a full narrative appraisal report prepared by an AACI-accredited appraiser. In an effort to acquire the property amicably, the owner has been provided a copy of the appraisal report, and staff have offered the owner funds to commission his own independent valuation of the site.

If the offer is not accepted by the property owner, at the appropriate time, Regional staff with external legal counsel will be requesting to initiate formal expropriation proceedings to acquire the property on a compulsory basis in accordance with the Expropriations Act. The Region's external counsel have advised that obtaining possession of the lands through expropriation can take up to 12 to 14 months by virtue of the steps prescribed in the legislation. With that said, they have also undertaken to make every effort to condense this timeframe and have also advised us that negotiations with the owner ought to and can continue in parallel with the expropriation process. The owner has been cooperative to date and understands the need of the wastewater treatment plant. The expropriation process will allow third party adjudication to decide the final purchase price.

In summary with respect to property acquisition, Regional staff will make further efforts to acquire the required lands amicably, but if necessary will proceed with expropriation in the near future to maintain project timelines. The expropriation requirements and Council approval will be provided under separate report at that time.

Project Resources

How We Flow (Master Servicing Plan) (https://www.niagararegion.ca/2041/master-servicing-plan/default.aspx)

SNF WW Solutions Project Webpage (https://www.niagararegion.ca/projects/south-niagara-falls-treatment-plant/default.aspx)

Alternatives Reviewed

The SNF WW Solutions program is being completed as a Schedule C project as part of the Municipal Class Environmental Assessment process. The project team reviewed the study area to determine suitable sites for the new WWTP that were the proper size, close to receiving waterbodies, close to existing and future service areas, and have limited environmental features. There were ten (10) long list site alternatives that were screened from a high level using multiple-bottom line criteria, including environmental, social-cultural, legal-jurisdictional, technical and financial. Four (4) site alternatives were screened for feasibility and were further evaluated using similar multiple-bottom line criteria. The study has included enhanced public and stakeholder consultation.

The information provided within this report aligns with the Class EA process and satisfies the study objectives. Therefore, staff do not recommend the consideration of any further alternatives.

Relationship to Council Strategic Priorities

The SNF WW Solutions capital program achieves several priorities of the 2019-2022 Council Strategic Plan, including the following:

- Supporting Businesses and Economic Growth - The servicing strategy will help support growth by providing new servicing options south of Welland River.

- Healthy and Vibrant Community – Improving wastewater infrastructure in south Niagara Falls supports the Growth Plan for the Greater Golden Horseshoe. This project protects what matters most by improving Niagara's ability to manage wastewater and help mitigate future impacts of climate change that translates into the effective safeguarding of our Great Lakes and generating healthy sustainable communities.

- Responsible Growth and Infrastructure Planning – Planning for growth enables Niagara to remain open for business, strengthens local employment, and delivers the critical infrastructure that meets the needs of residents and businesses

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

PW 39-2020 – South Niagara Falls Wastewater Treatment Plant Update

BRC-C-1-2020 – Councillor Information Requests from October 15, 2020 Budget Review Committee of the Whole

Prepared by:
Lisa Vespi, P.Eng.
Senior Project Manager
Public Works Department

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

Submitted by:
Ron Tripp, P.Eng.
Acting Chief Administrative Officer

This report was prepared in consultation with Dan Ane, Manager Program Financial Support, and reviewed by Tony Cimino, Associate Director W-WW Engineering and Joseph Tonellato, Director Water and Wastewater Services.

Appendices

Appendix 1 Project Estimates and Funding

Appendix 2 Study Area Overview

Appendix 3 Alternative Wastewater Treatment Plant Sites

PW 39-2021 Appendix 1

Project Estimates and Funding

Approved Budget to Date							
Project	**DC Portion**	**Total Project Cost**	**External Funding**	**DCs**	**DCs Debt**	**Debt**	**Total**
New SNF WWTP (NF) - prior to 2021	65%	$ 4.91	$ -	$ 1.96	$ -	$ 2.95	$ 4.91
New SNF WWTP (NF) - approved in 2021	65%	187.74	108.00		51.84	27.90	187.74
Total SNF WWTP		*192.65*	*108.00*	*1.96*	*51.84*	*30.85*	*192.65*
New South West Trunk Sewer - South Niagara Falls (NF)	70%	85.34	-	-	59.74	25.60	85.34
New South West Trunk Sewer (NF/TH)	85%	9.77	-	-	8.30	1.47	9.77
Black Horse Sewage Pumping Station (SPS) (TH)	85%	4.39	-	-	3.73	0.66	4.39
New SNF WWTP Outfall (NF)	65%	10.63	-	-	6.91	3.72	10.63
Black Horse Forecemain (TH)	85%	12.73	-	-	10.82	1.91	12.73
Peel Street SPS Upgrades and Forcemain (TH)	85%	5.92	-	-	5.03	0.89	5.92
South Side High Lift Pumping Station Decommissioning (NF)	50%	0.63	-	-	0.32	0.32	0.63
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	50%	1.14	-	-	0.57	0.57	1.14
McLeod Road Overflow Diversion (NF)	50%	1.89	-	-	0.95	0.95	1.89
Total SNF Projects		**$ 325.10**	**$ 108.00**	**$ 1.96**	**$ 148.20**	**$ 66.94**	**$ 325.10**

Total Debt **$ 215.14**

PW 39-2021 Appendix 1

Project Estimates and Funding

Revised Budget Estimates (per PW-39-2021							
Project	**DC Portion**	**Total Project Cost**	**External Funding**	**DCs**	**DCs (Debt)**	**Debt**	**Total**
New SNF WWTP (NF) - prior to 2021	65%	$ 4.91	$ -	$ 1.96	$ -	$ 2.95	$ 4.91
New SNF WWTP (NF)	59%	242.75	144.67		57.87	40.21	242.75
Total SNF WWTP		*247.66*	*144.67*	*1.96*	*57.87*	*43.16*	*247.66*
New South West Trunk Sewer - South Niagara Falls (NF)	80%	107.82	-	-	86.26	21.56	107.82
New South West Trunk Sewer (NF/TH)	80%	19.61	-	-	15.68	3.93	19.61
Black Horse Sewage Pumping Station (SPS) (TH)	80%	5.91	-	-	4.73	1.18	5.91
New SNF WWTP Outfall (NF)	64%	5.74	-	-	3.67	2.07	5.74
Black Horse Forecemain (TH)	80%	3.32	-	-	2.66	0.66	3.32
Peel Street SPS Upgrades and Forcemain (TH)	80%	5.92	-	-	4.74	1.18	5.92
South Side High Lift Pumping Station Decommissioning (NF)	50%	0.63	-	-	0.32	0.31	0.63
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	50%	1.14	-	-	0.57	0.57	1.14
McLeod Road Overflow Diversion (NF)	50%	1.89	-	-	0.95	0.94	1.89
Total SNF Projects		**$ 399.64**	**$ 144.67**	**$ 1.96**	**$ 177.45**	**$ 75.56**	**$ 399.64**

Total Debt	**$ 253.01**

PW 39-2021 Appendix 1

Project Estimates and Funding

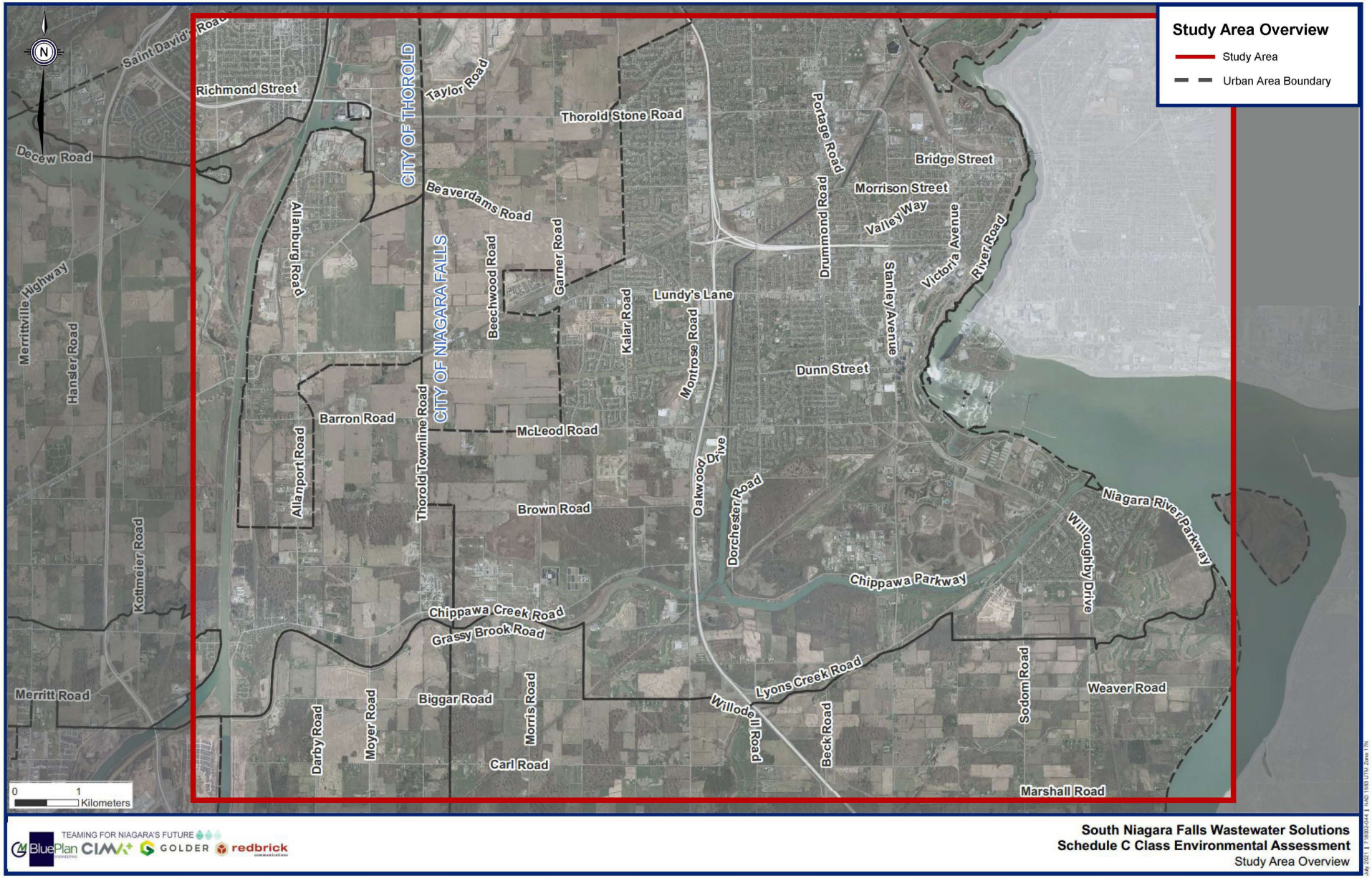
Differences							
Project	**DC Portion**	**Total Project Cost**	**External Funding**	**DCs**	**DCs (Debt)**	**Debt**	**Total**
New SNF WWTP (NF)	-6%	$ 55.01	$ 36.67	$ -	$ 6.03	$ 12.31	$ 55.01
New South West Trunk Sewer - South Niagara Falls (NF)	10%	22.48	-	-	26.52	(4.04)	22.48
New South West Trunk Sewer (NF/TH)	-5%	9.84	-	-	7.38	2.46	9.84
Black Horse Sewage Pumping Station (SPS) (TH)	-5%	1.52	-	-	1.00	0.52	1.52
Project Additions		**88.85**	**36.67**	**-**	**40.93**	**11.25**	**88.85**
New SNF WWTP Outfall (NF)	-1%	(4.89)	-	-	(3.24)	(1.65)	(4.89)
Black Horse Forecemain (TH)	-5%	(9.41)	-	-	(8.16)	(1.25)	(9.41)
Project Reductions		**(14.30)**	**-**	**-**	**(11.40)**	**(2.90)**	**(14.30)**
Peel Street SPS Upgrades and Forcemain (TH)	-5%	(0.00)	-	-	(0.29)	0.29	(0.00)
South Side High Lift Pumping Station Decommissioning (NF)	0%	-	-	-	-	-	-
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	0%	-	-	-	-	-	-
McLeod Road Overflow Diversion (NF)	0%	-	-	-	-	-	-
Total SNF Projects		**$ 74.55**	**$ 36.67**	**$ -**	**$ 29.24**	**$ 8.64**	**$ 74.55**

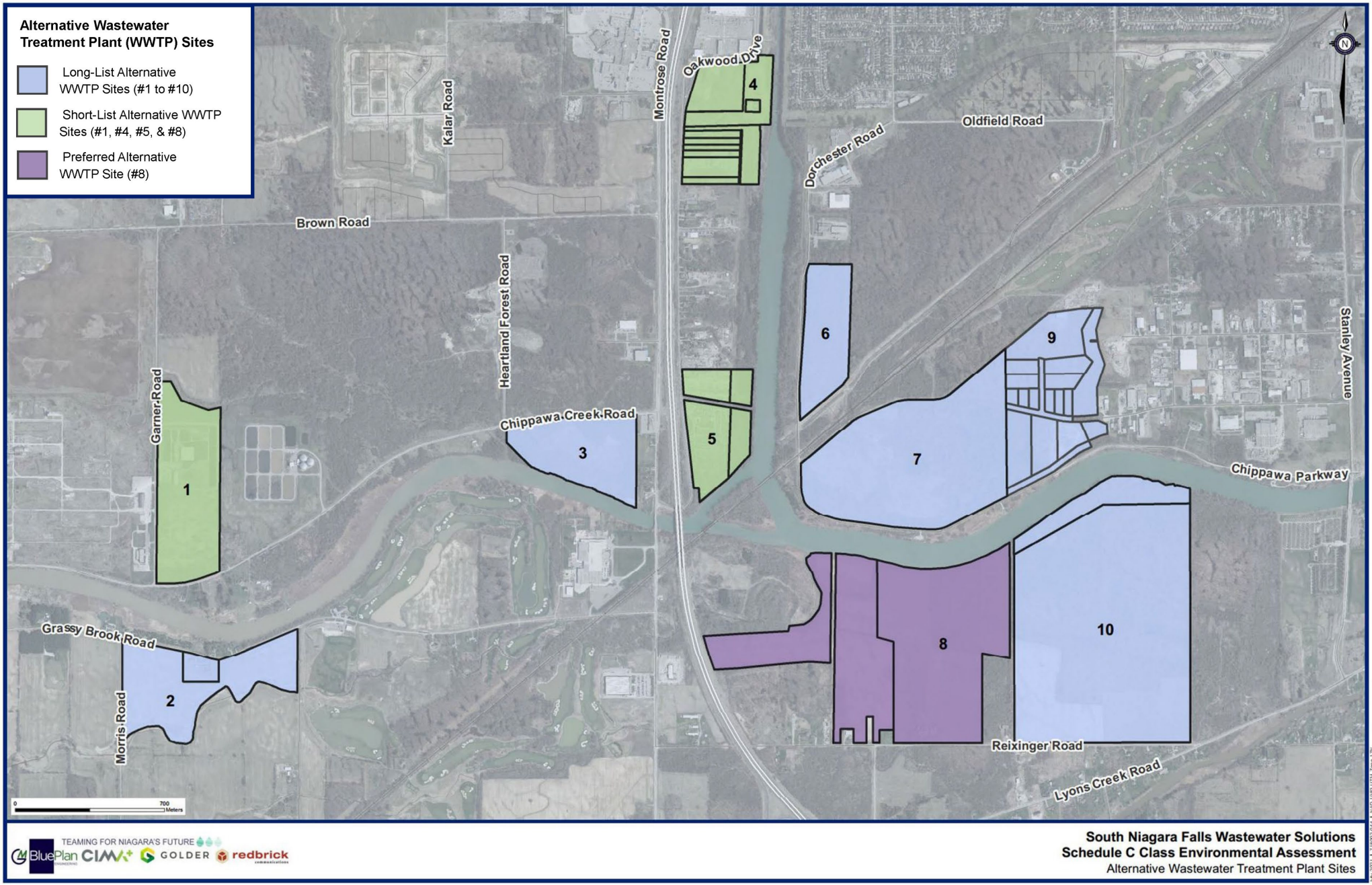
Total Debt **$ 37.88**

Municipality Located:

(NF) - Niagara Falls

(TH) - Thorold


Study Area Overview
Study Area
Urban Area Boundary
Saint David's Road
Richmond Street
Taylor Road
Thorold Stone Road
CITY OF THOROLD
CITY OF NIAGARA FALLS
Decew Road
Beaverdams Road
Allanburg Road
Beechwood Road
Garner Road
Kalar Road
Lundy's Lane
Montrose Road
Portage Road
Drummond Road
Bridge Street
Morrison Street
Valley Way
Victoria Avenue
River Road
Stanley Avenue
Merrittville Highway
Hansler Road
Barron Road
McLeod Road
Thorold Townline Road
Allanport Road
Dunn Street
Oakwood Drive
Dorchester Road
Niagara River Parkway
Willoughby Drive
Brown Road
Kottmeier Road
Chippawa Parkway
Chippawa Creek Road
Grassy Brook Road
Merritt Road
Biggar Road
Darby Road
Moyer Road
Morris Road
Willodell Road
Lyons Creek Road
Beck Road
Sodom Road
Weaver Road
Carl Road
Marshall Road
0
1
Kilometers
TEAMING FOR NIAGARA'S FUTURE
BluePlan
CIMA+
GOLDER
redbrick
South Niagara Falls Wastewater Solutions
Schedule C Class Environmental Assessment
Study Area Overview


Alternative Wastewater Treatment Plant (WWTP) Sites
Long-List Alternative WWTP Sites (#1 to #10)
Short-List Alternative WWTP Sites (#1, #4, #5, & #8)
Preferred Alternative WWTP Site (#8)
Brown Road
Kalar Road
Montrose Road
Oakwood Drive
Dorchester Road
Oldfield Road
Heartland Forest Road
Garner Road
Chippawa Creek Road
Stanley Avenue
Chippawa Parkway
Grassy Brook Road
Morris Road
Reixinger Road
Lyons Creek Road
1
2
3
4
5
6
7
8
9
10
0
700
Meters
N
TEAMING FOR NIAGARA'S FUTURE
BluePlan
CIMA+
GOLDER
redbrick
South Niagara Falls Wastewater Solutions
Schedule C Class Environmental Assessment
Alternative Wastewater Treatment Plant Sites

PW 39-2021 Appendix 1

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PW 39-2021 Appendix 1

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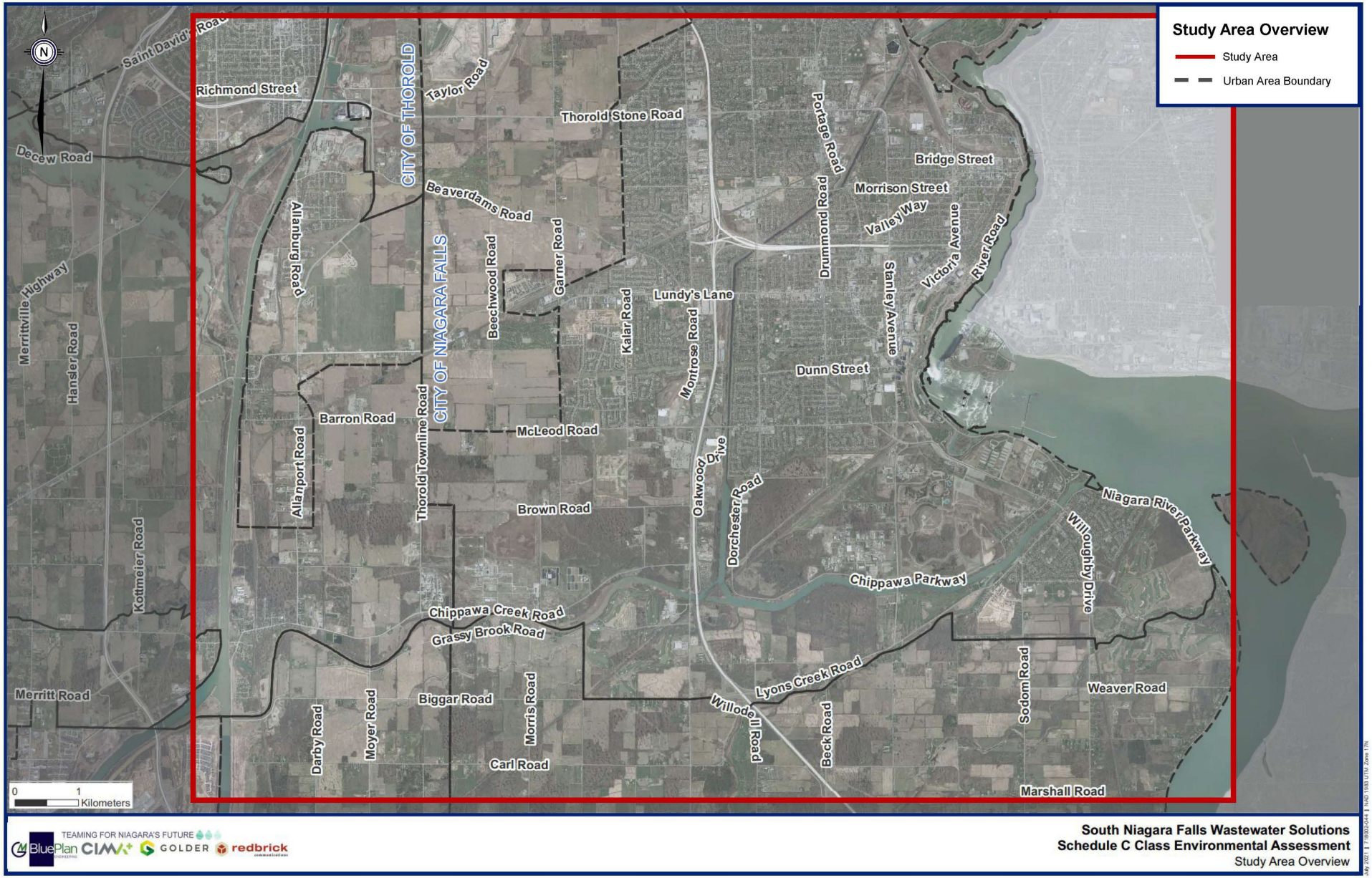
Project Reductions		**(14.30)**	**-**	**-**	**(11.40)**	**(2.90)**	**(14.30)**
Peel Street SPS Upgrades and Forcemain (TH)	-5%	(0.00)	-	-	(0.29)	0.29	(0.00)
South Side High Lift Pumping Station Decommissioning (NF)	0%	-	-	-	-	-	-
Garner, Oakwood, Grassy Brook SPS Decommissioning (NF)	0%	-	-	-	-	-	-
McLeod Road Overflow Diversion (NF)	0%	-	-	-	-	-	-
Total SNF Projects		**$ 74.55**	**$ 36.67**	**$ -**	**$ 29.24**	**$ 8.64**	**$ 74.55**

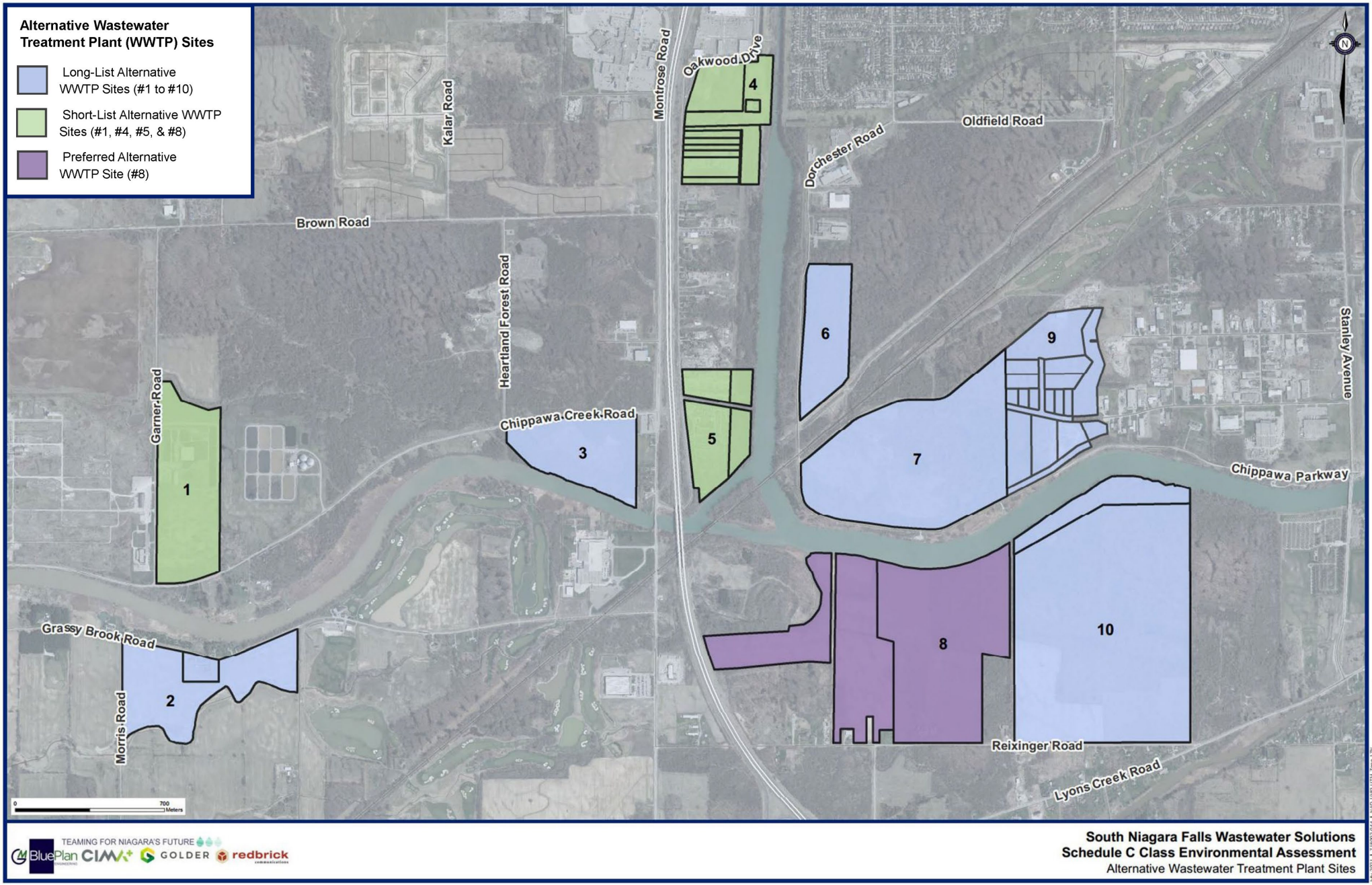
Total Debt **$ 37.88**

Municipality Located:

(NF) - Niagara Falls

(TH) - Thorold


Study Area Overview
Study Area
Urban Area Boundary
Saint David's Road
Richmond Street
Taylor Road
Thorold Stone Road
CITY OF THOROLD
CITY OF NIAGARA FALLS
Decew Road
Beaverdams Road
Allanburg Road
Beechwood Road
Garner Road
Kalar Road
Lundy's Lane
Montrose Road
Portage Road
Drummond Road
Bridge Street
Morrison Street
Valley Way
Victoria Avenue
River Road
Stanley Avenue
Merrittville Highway
Hansler Road
Barron Road
McLeod Road
Thorold Townline Road
Allanport Road
Dunn Street
Oakwood Drive
Dorchester Road
Niagara River Parkway
Willoughby Drive
Brown Road
Kottmeier Road
Chippawa Parkway
Chippawa Creek Road
Grassy Brook Road
Merritt Road
Biggar Road
Darby Road
Moyer Road
Morris Road
Willodell Road
Lyons Creek Road
Beck Road
Sodom Road
Weaver Road
Carl Road
Marshall Road
0
1
Kilometers
TEAMING FOR NIAGARA'S FUTURE
BluePlan
CIMA+
GOLDER
redbrick
South Niagara Falls Wastewater Solutions
Schedule C Class Environmental Assessment
Study Area Overview


Alternative Wastewater Treatment Plant (WWTP) Sites
Long-List Alternative WWTP Sites (#1 to #10)
Short-List Alternative WWTP Sites (#1, #4, #5, & #8)
Preferred Alternative WWTP Site (#8)
Brown Road
Kalar Road
Montrose Road
Oakwood Drive
Dorchester Road
Oldfield Road
Heartland Forest Road
Garner Road
Chippawa Creek Road
Stanley Avenue
Chippawa Parkway
Grassy Brook Road
Morris Road
Reixinger Road
Lyons Creek Road
1
2
3
4
5
6
7
8
9
10
0
700
Meters
N
TEAMING FOR NIAGARA'S FUTURE
BluePlan
CIMA+
GOLDER
redbrick
South Niagara Falls Wastewater Solutions
Schedule C Class Environmental Assessment
Alternative Wastewater Treatment Plant Sites

THE REGIONAL MUNICIPALITY OF NIAGARA
COMMITTEE OF THE WHOLE
FINAL AGENDA

COTW 4-2021
Thursday, September 09, 2021
6:30 p.m.
Meeting will be held by electronic participation only
This electronic meeting can be viewed on Niagara Region's Website at:
https://www.niagararegion.ca/government/council/

Due to the efforts to contain the spread of COVID-19 the Council Chamber will not be open to the public to attend meetings until further notice. To view live stream meeting proceedings, please visit: niagararegion.ca/government/council

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1. CALL TO ORDER

2. DISCLOSURES OF PECUNIARY INTEREST

3. DELEGATIONS

3.1 South Niagara Falls Wastewater Treatment Plant - Budget and Property (Report PW 39-2021 (Agenda Item 5.1))

3.1.1 Peter Inman, Resident, City of Welland

The delegation submission is attached to this agenda item as COTW-C 5-2021.

4. ITEMS FOR CONSIDERATION

4.1 PW 39-2021

South Niagara Falls Wastewater Treatment Plant - Budget and Property

A presentation will precede consideration of this item.

5. PRESENTATIONS

5.1 Niagara Region: Core Housing Need and Growth Management

Paul Smetanin, President and CEO, Canadian Centre for Economic Analysis (CANCEA)

5.2 Niagara's Affordable Housing Strategy

Adrienne Jugley, Commissioner of Community Services, and Michelle Sergi, Commissioner, Planning and Development Services

6. CONSENT ITEMS FOR INFORMATION

6.1 *CWCD 2021-191*

A memorandum from B. Zvaniga, Interim, Commissioner, Public Works, dated September 3, 2021, respecting Response to Councillor Information Request re Ministry of Environment, Conservation and Parks Investigation.

This item was added to the agenda at the request of Councillor Gale.

7. OTHER BUSINESS

8. NEXT MEETING

The next meeting is scheduled for Thursday, October 7, 2021 at 4:00 p.m.

9. ADJOURNMENT

South Niagara Falls Wastewater Solutions Schedule C Class Environmental Assessment

Committee of the Whole

September 9, 2021

South Niagara Falls Wastewater Solutions Schedule C Class Environmental Assessment

PW-39-2021

Wastewater Program and Cost Estimate Update

Thursday, September 9, 2021

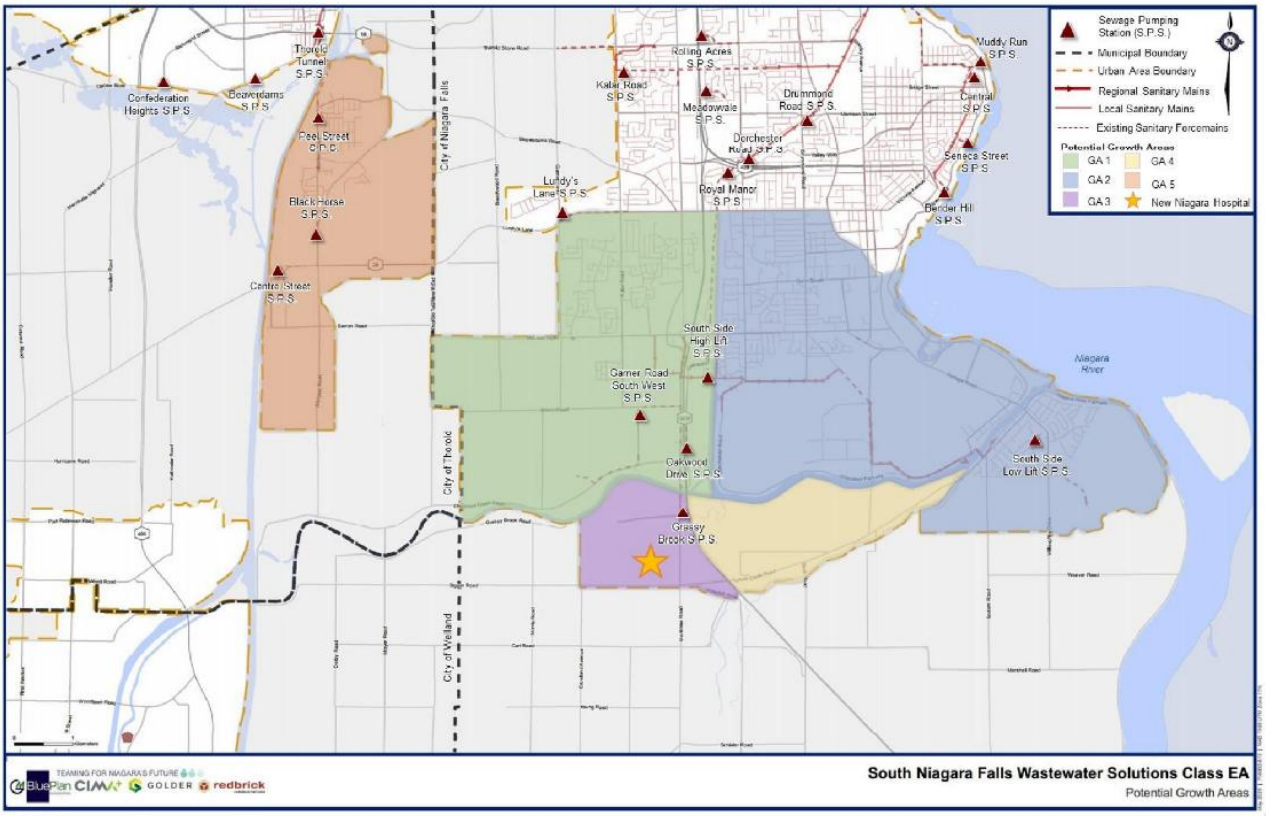
Workshop Agenda

1. Project Background and Strategy Update
2. Cost Estimates
3. Financial Review
4. Key Considerations and Risk Management
5. WWTP Property Update
6. Next Steps
7. Q & A

2017 MSP Overview and Recommendations

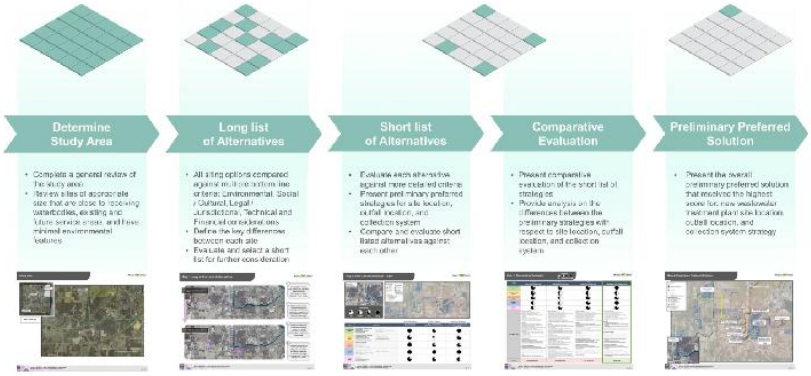
- 2041 growth projections were developed through the Municipal Comprehensive Review (MCR) process, approved by Council and utilized in the Master Servicing Plan (MSP) Update
- The MSP developed Region-wide servicing strategies and established the Niagara Falls strategy including the new WWTP
- Niagara Falls Strategy:
  - Go North vs New Plant
  - Rationale for selection (financial, technical feasibility of expanding existing system, development pressures/growth)
  - Foundation moving forward into Class EA
- Identified need for new South Niagara Falls Wastewater Treatment Plant (SNF WWTP)
- Recommended moving forward to Schedule C Class EA

Projected Growth



SNFWWS Class EA Process Overview

- Pre-Consultation and Stakeholder Engagement
- 3 Public Information Centres (PICs) to date, 1 more anticipated in late fall 2021
- Extensive Development and Evaluation of Alternatives
  - Treatment Plant Site
  - Collection System Strategy
  - Outfall Location

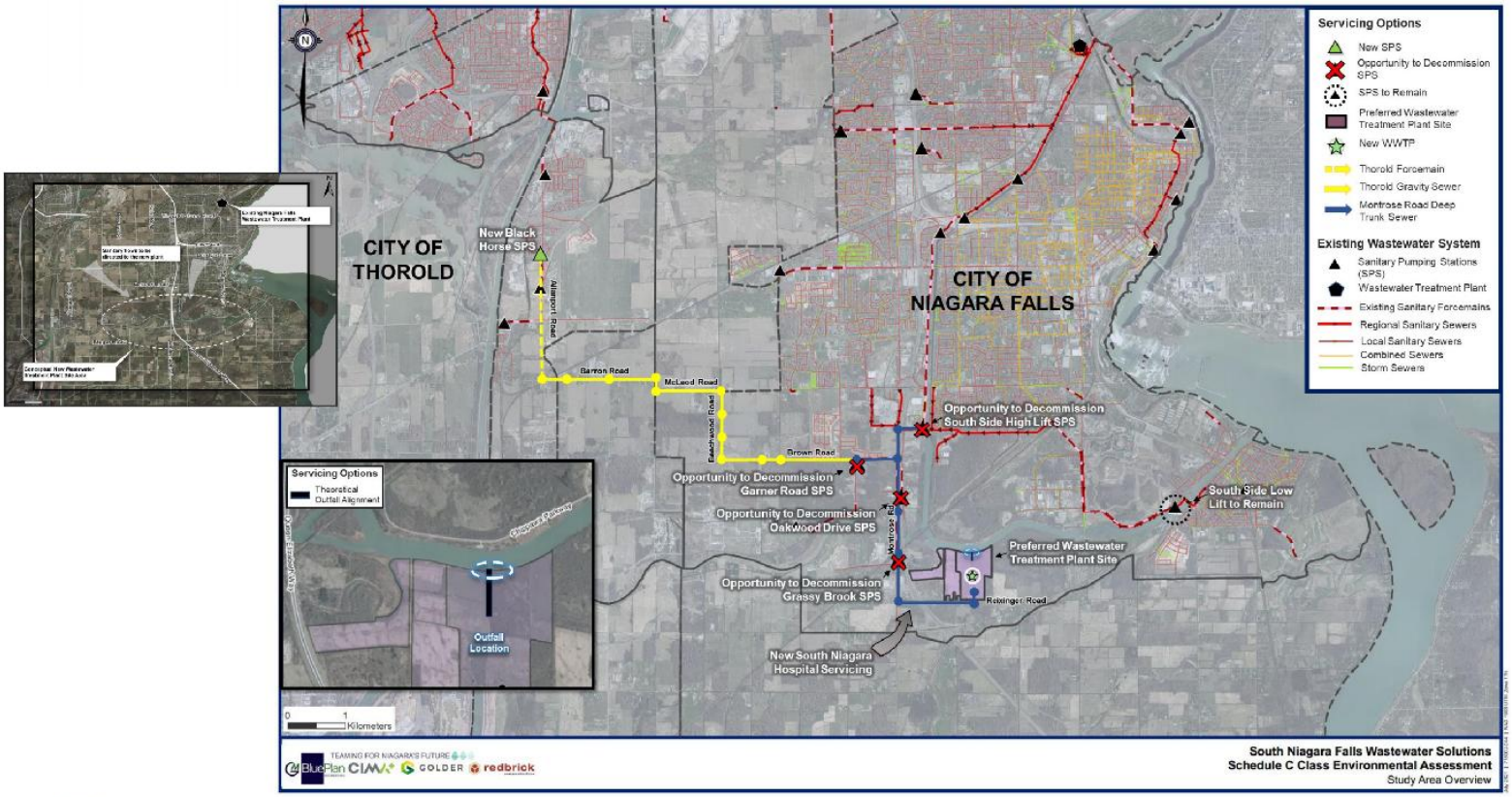


- Presented Preliminary Preferred Solution to the Public on March 11, 2020
- Supported Preferred Solution – Moving forward with Design Concepts

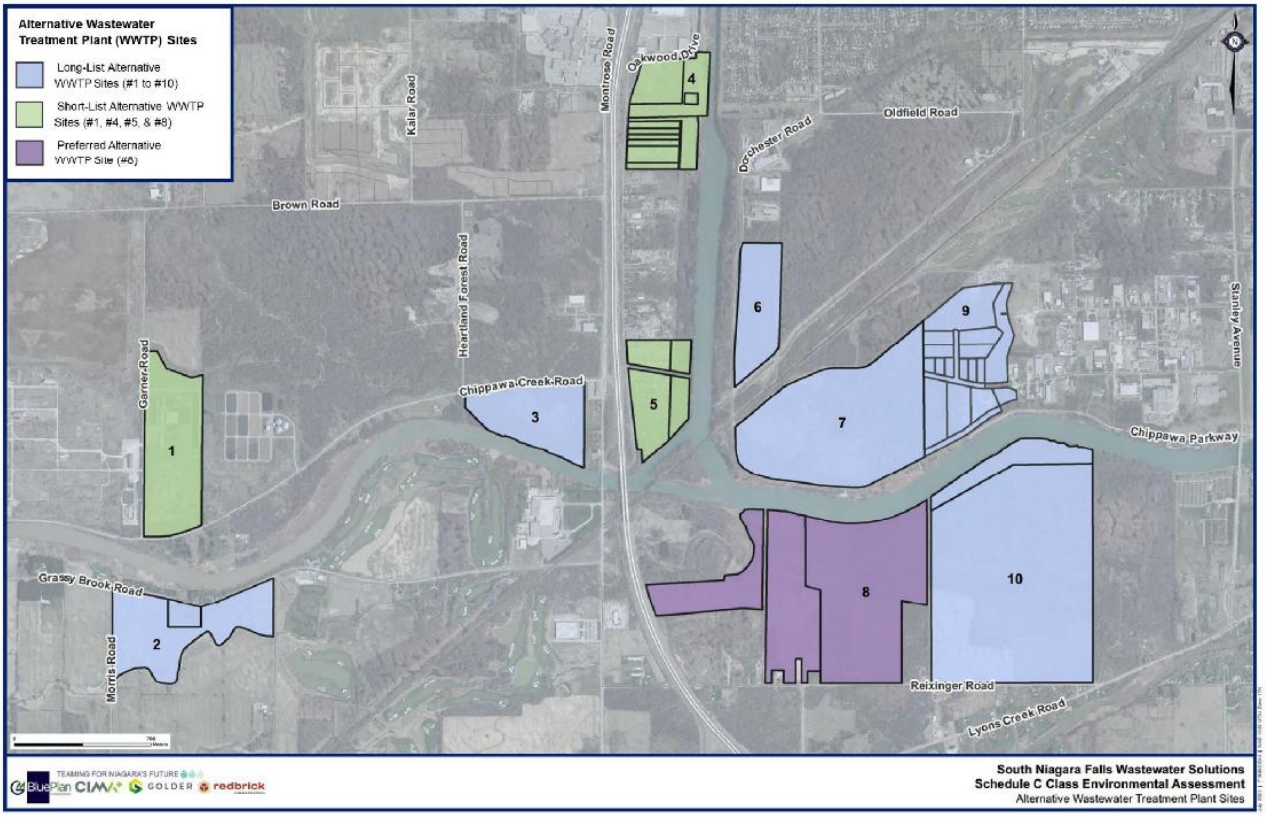
SNFWWS Class EA Process Overview

- Phase 3 of the Class EA process – summer 2020 to summer 2021
  - Completed more detailed environmental, cultural/heritage and archaeological investigations on the site and for the trunk sewer alignment
  - Completed more detailed geotechnical/hydrogeotechnical investigations on the preferred strategy
  - Addressed new archaeological information that came forward in fall 2020 related to the site
  - Confirming orientation of the facilities on the site as well as the outfall location at Chippawa Creek
  - Confirmed Montrose Road for trunk sewer alignment
  - Significant coordination and stakeholder engagement throughout Phase 3, including with the City of Niagara Falls, City of Thorold, Region Planning and Development Services, and Corporate Services
  - Minimizing risk and surprises in next steps of implementation
- Anticipate final Public Information Centre (PIC) late fall 2021
  - Update on investigations
  - Final alignments and WWTP site
  - Final technical considerations including WWTP design concept
- Complete conceptual design in late fall 2021
- File complete Class EA Environmental Study Report (ESR) with all supporting documentation in early 2022

SNFWWS Class EA Preferred Solution



Sites Considered

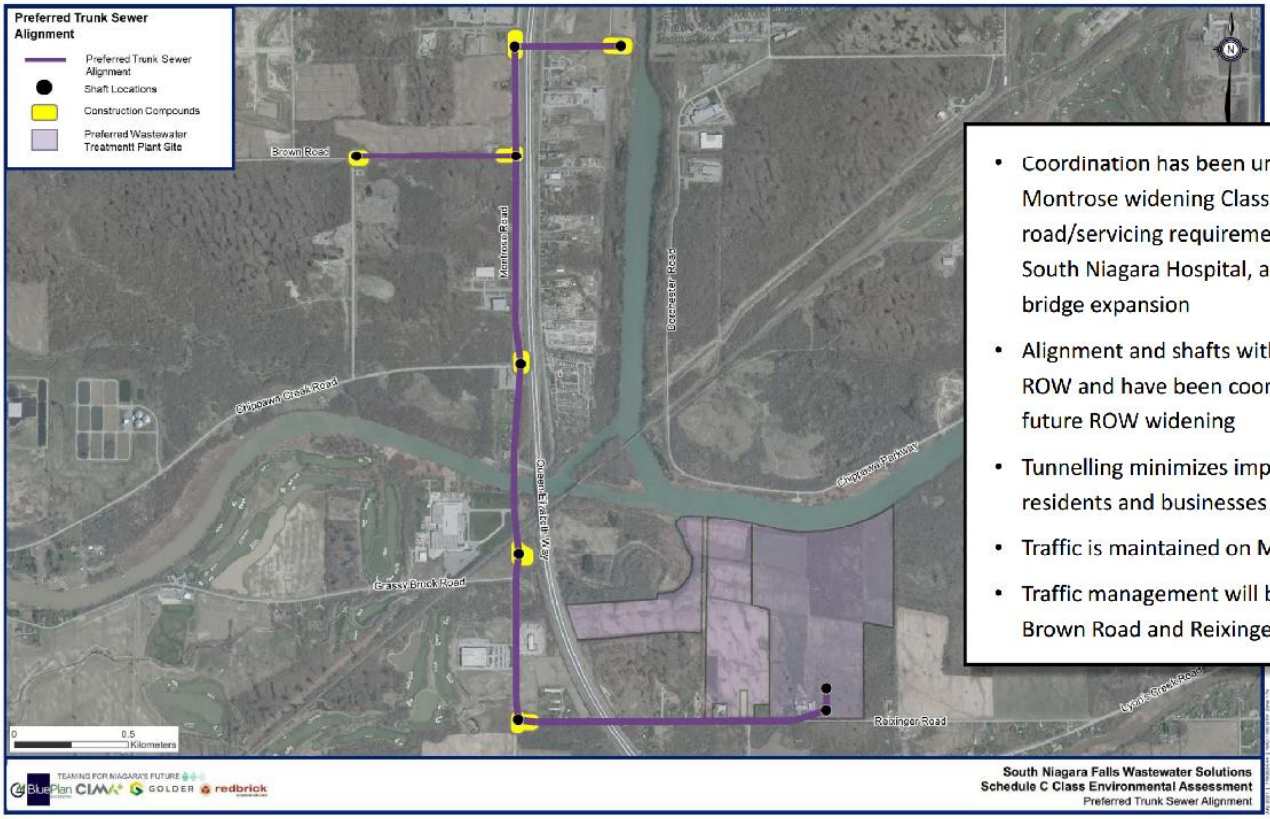


Preferred WWTP Site

Selection Rationale:

- In the heart of the future growth areas
- Strategic location to maximize gravity servicing to the new WWTP – cost effective collection system strategy
- Expansion flexibility, supports 2051 and beyond growth areas
- Supportive location with MECP for outfall discharge to Chippawa Creek
- Sufficient site area to work within environmental and archaeological constraints
- Manageable property costs
- Site location and sewer alignment provides for:
  - SPS decommissioning and reduced long term operating costs
  - Significant wet weather overflow reductions

Preferred Trunk Sewer

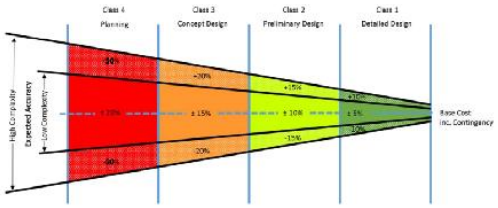


- Coordination has been undertaken with Montrose widening Class EA, the road/servicing requirements for the South Niagara Hospital, and the future bridge expansion
- Alignment and shafts within existing ROW and have been coordination with future ROW widening
- Tunnelling minimizes impacts to residents and businesses
- Traffic is maintained on Montrose Road
- Traffic management will be required at Brown Road and Reixinger Road

Cost Estimation Principles and Accuracy

- Cost estimating accuracy will improve as a project moves through concept to design stages
- The MSP cost estimates are truly planning level, anticipate normal levels of complexity and constructability, and in some cases have limited information for costing
- Class EA cost estimates will start at planning/conceptual level in Phase 2 and will continue to improve in accuracy to conceptual/preliminary design level in Phase 3
- The Class EA process will result in complete refinement of the projects technically (design basis) as well as result in a more accurate budget level cost estimate

	Estimate Class	Estimate Class Description	End Usage / Major Deliverables	Accuracy Range (+/-)	
				Low Complexity	High Complexity
D	Class 4	Planning Cost Estimate	Concept Screening; justification for project planning funding. Minimum information requirements.	20	50
C	Class 3	Concept Design Cost Estimate	Basis for budgeting and approvals.	15	20
B	Class 2	Preliminary Design Cost Estimate	Used for project cost control during design; initial detailed estimate.	10	15
A	Class 1	Detailed Design Cost Estimate	Final cost review in preparation for construction; tender ready.	5	10



Cost Estimation Approach

- Unit rates
- Specific project review
- Reference to previous/ongoing Region projects
- Industry benchmark
- Include construction as well as internal/external engineering costs etc
- Contingency
- Current year dollars
- Phase 2 and Phase 3 constructability and certified cost estimating reviews

- Class EA Phase 3 Cost Estimate has resulted in increased costs compared to Sept 2020

Cost Estimate Update

- Moving from conceptual Phase 2 information to more detailed information under Phase 3
- Program Cost Increase from $325.10M to $399.64M ($74.55 or 19% increase) from previous 2020 estimate
- Some component estimates have increased while others have decreased
- Ensuring review and discussion at each point of program update and cost update

Cost Estimate Increase Rationale

- Most significant impact: geotechnical conditions (soils) in the area for the WWTP site as well as the trunk sewer alignment
  - Prevalent across the Study Area
  - Impacts WWTP foundation – requires piles
  - Impacts trunk sewer tunnelling constructability
  - $20M increase at the WWTP (9% increase), $15M increase for the trunk sewer (16% increase)
- Better detail from the conceptual design of the new WWTP
  - Reflects best practice review, staff review, and project team workshops.
  - Overall site and facility optimization to provide long term benefit for operation and maintenance, consideration for green / energy applications while being mindful of project budget.
  - Sizing of some elements to support future expansions.
  - Areas that contributed to the additional costs (represents $15M or 7% increase) include:
    - Optimal sizing for the inlet pumping station, headworks, digestion, and disinfection
    - Waste Activated Sludge (WAS) thickening for improved operations
    - Enhanced road network, RV station and hauled sludge facility to support Region-wide activities

Cost Benefit Validation

- MSP undertook a cost benefit evaluation of the Go North vs New Plant options
- In 2017, the New Plant was selected as preferred
  - Better ongoing financial risk management (capacity phasing, greenfield construction)
  - Greater flexibility and ability to service long term growth
  - More efficient and cost effective post period capacity
  - Avoids difficult and costly construction related to existing infrastructure within urban developed areas as well as site constraints at the existing Stanley Ave WWTP
- SNF strategy provides broader benefit:
  - Supports servicing and mitigating system issues in Niagara Falls, including North NF and Chippawa, and Thorold South
  - Frees up capacity for NOTL and St. Catharines

Cost Benefit Validation

- Given the enhancements to the strategy and change in cost estimates, the cost benefit evaluation was reviewed under the Class EA
- The South Niagara Falls (SNF) strategy reflects updated principles compared to the 2017 review
  - Greater emphasis on wet weather management, environmental protection and overflow control
  - Greater emphasis on longer term planning for servicing – ensuring flexibility for growth beyond 2051
  - More information for servicing needs – South Niagara Hospital, Thorold South and Niagara Falls growth areas
- Cost Benefit Analysis
  - Go North alternative was reviewed at a high level to better understand alignment opportunities and Stanley Ave WWTP expansion options
  - Similar conditions influencing the SNF cost increase as well as constraints related to the trunk sewer alignment and Stanley Ave WWTP site would increase the Go North costing
  - The current review indicates that the cost gap between Go North and SNF has narrowed
  - The evaluation validates the rationale to implement the SNF strategy
  - The Region's independent project advisor actively commented, reviewed and supported the updated cost benefit analysis
- The planning work under the current Master Servicing Plan and the development interest indicates that the proposed location for the sewer alignments and the WWTP under the SNF strategy facilitate and support the Region's long term vision
- Council endorsed the SNF strategy in 2017. The detailed analysis completed to date plus the continued interest and progress in South Niagara Falls demonstrates this was a good decision.

Gross Cost Comparison (in millions)

Project	Revised Estimates	Prior Estimates	Difference
SNF WWTP	$ 247.66	$ 192.65	$ 55.01
New South West Trunk Sewer - South Niagara Falls	107.82	85.34	22.48
New South West Trunk Sewer	19.61	9.77	9.84
Black Horse Sewage Pumping Station	5.91	4.39	1.52
Project Additions	**$ 381.00**	**$ 292.15**	**$ 88.85**
New SNF WWTP Outfall	5.74	10.63	(4.89)
Black Horse Forecemain	3.32	12.73	(9.41)
Project Reductions	**9.06**	**23.36**	**(14.30)**
Peel Street SPS Upgrades and Forcemain	5.92	5.92	-
South Side High Lift Pumping Station Decommissioning	0.63	0.63	-
Garner, Oakwood, Grassy Brook SPS Decommissioning	1.14	1.14	-
McLeod Road Overflow Diversion	1.89	1.89	-
Projects With No Changes	**9.58**	**9.58**	-
Total SNF Projects Budget	**$ 399.64**	**$ 325.10**	**$ 74.55**

Project estimates are based on costs indexed to the year of expenditure

Incremental Impacts to Financing

Project	External Grants	DCs (Debt)	Debt	Total
New SNF WWTP	$ 36.67	$ 6.03	$ 12.31	$ 55.01
New South West Trunk Sewer - South Niagara Falls	-	26.52	(4.04)	22.48
New South West Trunk Sewer	-	7.38	2.46	9.84
Black Horse Sewage Pumping Station (SPS)	-	1.00	0.52	1.52
New SNF WWTP Outfall	-	(3.24)	(1.65)	(4.89)
Black Horse Forecemain	-	(8.16)	(1.25)	(9.41)
Peel Street SPS Upgrades and Forcemain	-	(0.29)	0.29	(0.00)
Total SNF Project Incremental Funding	**$ 36.67**	**$ 29.24**	**$ 8.64**	**$ 74.55**

Total Debt **$ 37.88**

The net increase of *$74.55* million to the project budgets is to be funded by:

- External Grants - $36.67M
- Debt - $37.88M
  - $29.24M of debt recovered by DCs
  - $8.64M funded through rate requisition

Operating Budget – Background

As per policy, the operating budget impact to fund additional debt and operating costs for capital works needs to be approved in the same year as the capital works are approved.

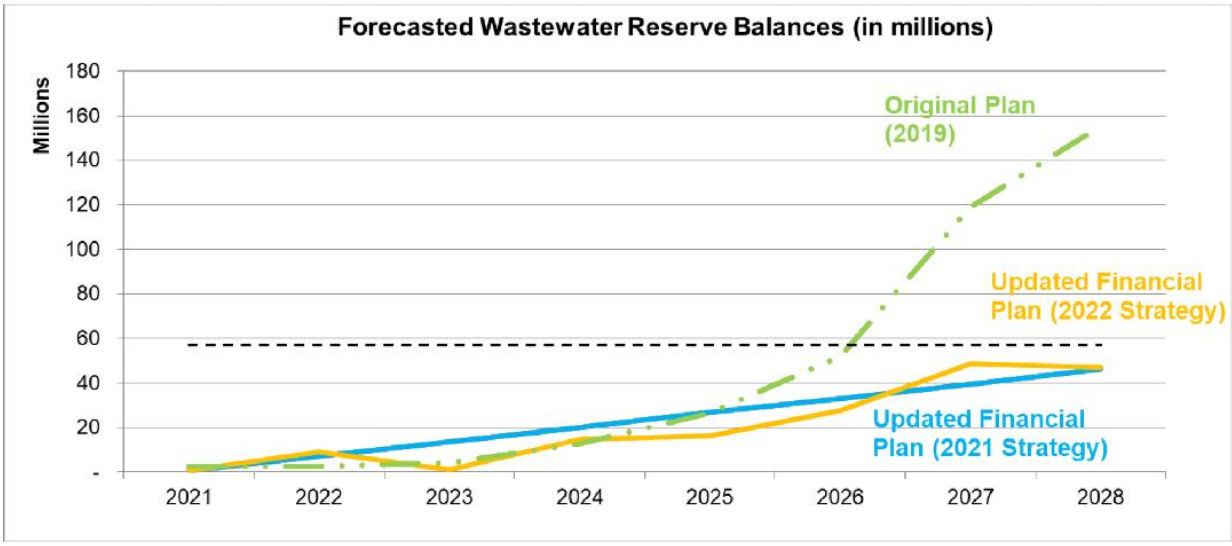
- In the 2021 Operating Budget, a placeholder to accommodate the plant operations and the debt repayment costs was included in the amount of $9M. This was funded from a reduction in the transfers to WW reserves.
- Debt charges and plant operating costs will not be required to be paid until the debt is issued and the plant is operational (2026/2027).
- Until the funds are needed for debt charges or the cost of operations, they can be used to fund other WW capital projects.

Operating Budget Impacts (in millions)

Description	2022 Financing Strategy	2021 Financing Strategy	Variance	Notes
Annual Debt Charge Budget (net of DC recovery)	$15.0 - Debt (10.6) - DC $4.4	$12.5 - Debt ($8.7) - DC $3.8	$0.6	• Increase in placeholder required to fund additional project debt
Transfer to WW capital	$12.2	$12.8	$(0.6)	• Reduction required to offset additional debt charges of SNF projects

To accommodate the additional debt required, the placeholder for debt charges will increase by $600K, and offset by a reduction in the transfers to reserves.

Capital Reserves Impact



- Increase to debt is offset by a reduction in transfers to reserves, however the current project estimate does not alter the 2021 reserve strategy.
- Capital reserves are estimated to reach $47M by 2028 vs. target of $57M

Other Finance Considerations

- Further initiation of the capital budget for future phases is contingent on external grant funding confirmation
  - Staff is still advocating for external grant funding to support the project (estimated at $145M with budget increase)

- Staff continues to monitor debt impacts on the S&P ratio and ARL
  - Total approved debt for the Region inclusive of these changes is within limits:
    - ARL estimated at 9.74%; limit is 25%
    - S&P ratio, which includes LAM debt as well, estimated at 116%; limit is 120%

Development Charges – Region Wide

DC Type	Current	Previous SNF Impact	Revised SNF Impact
Single	$4,946	$6,647	$7,221
Apartment 2+Bdrm	3,434	4,614	5,013
Apartment Bach/1 Bdrm	2,040	2,741	2,978
Other multiple	3,603	4,842	5,260
Spatial Care	1,807	2,513	2,730
Commercial (sq foot)	3.55	4.77	5.19
Industrial (sq foot)	1.48	1.99	2.16
Institutional (sq foot)	2.54	3.41	3.71
Increase % on WW DC Only		**34%**	**46%**
Increase on Total Res DC		**8%**	**11%**
Increase on Total Non-Res DC		**10%**	**13%**

- Based on the 2017 DC Study the estimated impacts to 2022 DC Study from the SNF Budget are:
  - **11%** increase to residential development charges
  - **13%** increase to non-residential development charges

SNFWWS Strategy Benefits

- The Class EA has established an optimized strategy that balances the needs for the plant, the outfall and collection system
- Meets the capacity needs for growth and addresses current limitations
- While costs have increased since the MSP, the long term strategy is enhanced and other efficiencies and cost savings have been gained
- The updated wastewater strategy that will provide improved level of service, enhanced ability to address wet weather flows, and greater flexibility for efficient servicing in the future
  - Incoming trunk sewer is at a depth to support servicing of broader growth areas including the Chippawa area
  - Trunk sewer is located to support future servicing east of the QEW, west of the QEW and other potential growth areas
  - Trunk sewer sizing will support managing wet weather flows to the plant (storage)
  - South Thorold infrastructure located to efficiently service future growth
  - The strategy will reduce wet weather overflow volume to the environment by over 60%
- Reduction of existing Operation and Maintenance costs from SPS Decommissioning
- Reduction of Lifecycle costs (sustainability upgrades, major maintenance/rehabilitation/replacement) from SPS Decommissioning

Ongoing Risk Management

- Site Investigations still require completion
  - Some Stage 2 archaeological assessments are still remaining. Further detailed field investigations will be completed to support the detailed design.
- Design and Construction approach for the trunk sewer will be developed to manage risks and provide competitive bidding
- Final Designs will be completed in the subsequent phases – design concept has been sufficiently moved forward at this stage
- Cost Uncertainty with respect to materials, equipment and overall market conditions – COVID-19 related, difficult estimating out to year 2027
- Property Acquisition
- Risk Management Plan and Risk Registry have been utilized throughout the project process

Property Discussions

- Multiple bottom line criteria evaluation and risk assessment resulted in the recommendation for the new WWTP and outfall pipe to be constructed solely at 6811 Reixinger Road. Utilization of the full property at 6811 Reixinger Road allows the Region to:
  - Provide the maximize buffer from existing and future neighbouring properties
  - Ensure available land is secured now for future expansion beyond the planning horizon
  - Optimize WWTP layout and process configuration within the preferred site
  - Minimize the required archaeological remediation and impact to environmental features.
  - Coordinate the property purchase with a single land owner
  - Address MECP property set back requirements

Property Discussions

- An accredited property appraisal has been completed
- Open discussions with the property owner have been undertaken to date
- Regional staff will be providing the owner with an offer
- If the offer is not accepted by the owner, Regional staff with external legal counsel will request to initiate formal expropriation proceedings to acquire the property
  - 3rd party adjudicated process
  - Helps finalize price
- Region staff and the property owner have made continued effort to work through the process and acquire the land amicably
- The property appraisal value for the preferred WWTP site is within the approved property budget. Final property purchase costs are not yet known. Staff will reengage Council as necessary throughout the property acquisition process.
- Recommend clarity on property status before filing Class EA document. Final property transfer required prior to 2024.

Key Take-Aways

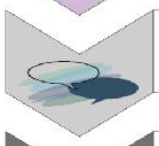
- SNF WW Program is a significant infrastructure program for the Region
- Multi-generational project, "100 year" investment
- SNF WW Program provides benefit to multiple municipalities
- The infrastructure is strategically located to support key planned and future growth areas
  - South Niagara Hospital
  - Active development interests
- A sustainable financial plan has been established to deliver the program
  - Balancing funding, DC, budget impacts
  - Region can continue to support ongoing capital programs and future budgets
  - Achieving goal of cost estimate transparency/clarity and understanding full program costs
  - Acknowledge that scope and costing will continue to be refined/updated as the process moves through detailed design and tendering
- There is a greater understanding of project risks and constructability at the Class EA stage of the program
  - Greater level of effort now to minimize surprises later during design and tendering
- Continued development of project plan and risk management plan
- Class EA process has been positive and successful to date
- Critical component of the Region's Strategic Plan and "How We Grow"

Class EA Process Next Steps

Schedule:

March 2020: Public Information Centre No. 3
(Presented preliminary preferred plant site, outfall location and collection strategy)

Spring 2020 – Fall 2021: Validate preferred solution and work through conceptual design



Fall 2021: Public Information Centre No. 4
(Select preferred design concept, provide updated details on the strategy)

Early 2022: Environmental Assessment completion

2022: Post EA - Design & Construction
2027: Post EA - Estimated plant in-service date

South Niagara Falls Wastewater Solutions
Class 'C' Environmental Assessment Update

Brief and Frequently Asked Questions for Council to accompany Report PW 39-2021

Purpose

Report PW 39-2021 recommends Regional Council "consider a budget increase to the capital projects associated with the new South Niagara Falls Wastewater Treatment Plant as part of the 2022 budget process."

The project team has prepared this document to help clarify and emphasize key points in the report, to answer anticipated questions, and to support elected officials in your conversations with members of the community.

Key takeaways

- The project is an investment in Niagara region's future for the next 100 plus years. It is an investment today to ensure we have the infrastructure we need to attract and serve people who live, work, visit and invest in our community for generations to come.
- The EA has validated the preferred solution, which will open up opportunities for:
    - ✓ growth and development
    - ✓ environmental sustainability
    - ✓ more efficient and flexible wastewater servicing
    - ✓ reduced future operating costs
    - ✓ benefits to Niagara Falls, Thorold, St. Catharines, and Niagara-on-the-Lake.
- The latest information is informed by extensive field testing and consultation and collaboration with internal teams, local municipalities, key stakeholders and the public.
- There is still work to do. We are on track, and the EA has been positive and successful to date. Through this comprehensive process, we are doing a lot of up-front work to identify potential issues now, so the Region is best positioned to plan ahead, anticipate challenges and mitigate risks. We know more today than we did a year ago and we are keeping our commitment to keep Council and the public up to date as we learn more.
- The 19% increase of the total budget estimate detailed in the report is well within the level of accuracy anticipated for this stage of the EA process. A sustainable financial plan has also been developed to deliver the program.

Frequently Asked Questions

1. *Why have the estimated costs risen?*
   Good information takes time to get, and we are able to give better estimates now as we complete Phase 3 of the EA, than we could when we presented to Council a year ago at the end of Phase 2.

   The most significant financial impacts are related to soils (geotechnical conditions) in the area and the trunk sewer alignment. Together, they represent approximately half of the increase we are presenting now, compared to 2020. Other factors in the increase include ensuring the scope allows us to optimize the design for future expansion and to leverage green energy applications.

   There are also two projects with revised cost estimates less than the approved budgets. These total a more than $14 million reduction.

   It is important to note that the COVID-19 pandemic presents challenges in predicting cost estimates. It is likely that fluctuations in market conditions for materials, equipment costs and labour will persist for the next several years.

2. *Will costs increase again?*
   Cost estimates are likely to be adjusted again as we move into the detailed design stages and continue to gather more information. At this stage, we are still within the level of accuracy expected. We will come back to Council on a regular basis with more realistic estimates are we progress. Please note that 3rd party certified cost estimator has been used in the EA. Another review will be completed before the EA is completed.

3. *How will these increased costs be covered?*
   The increase costs will be funded with a combination of debt and external funding, as per our previous strategy in 2021. We are using the same formula to estimate external funding where we expect that two thirds of the treatment plant costs (excluding design and land) will be funded with external grants ($36.67M).

   The remaining $37.87M will by funded by debt: $29.23M will be recovered by development charges; the remaining $8.64M will be funded from the rate requisition, resulting in a reduction in funds transferred to capital reserves.

4. *Is this solution still preferred over the "Go North" solution?*
   Yes. Based on the cost benefit analysis, this EA has validated the approach approved as part of the 2017 Master Servicing Plan. The "Go North" option would be subject to the same inflation costs, anticipated poor soils, a confined area for construction, additional property acquisition needs and technical challenges, as well as managing social and environmental issues, and needed upgrades to the Stanley Avenue WWTP.

   The long-term benefits achieved by building a new WWTP outweigh what could be achieved through the Go North option. As well, the latest growth projections through to

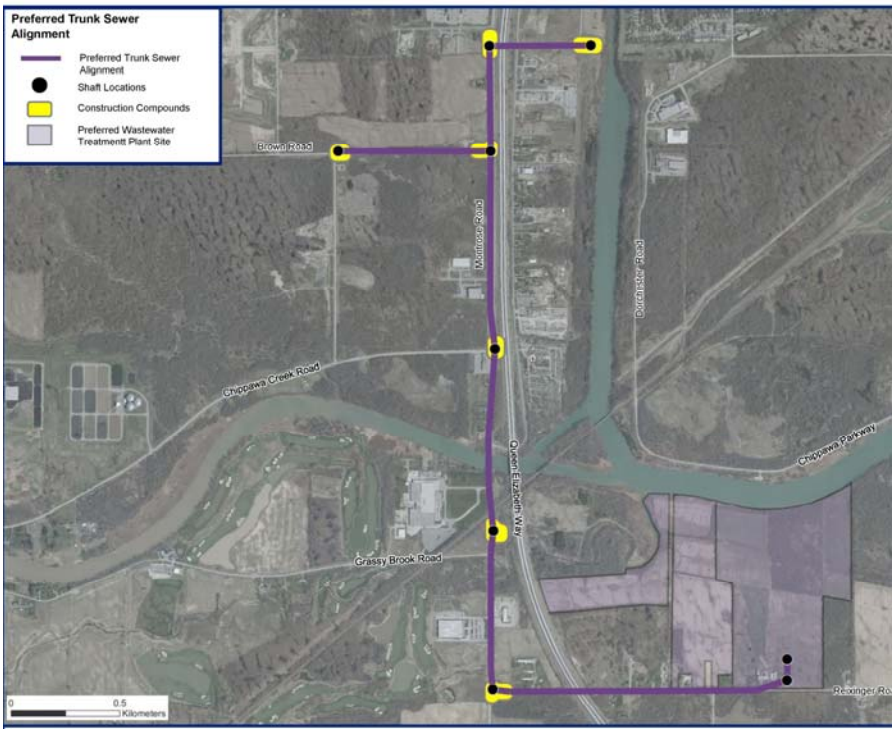
2051, also confirm the need for a South Niagara Falls Wastewater Treatment Plant and enhanced sewer system to take pressures off existing infrastructure.

5. *Will the Region be securing external funding for this project?*
   Yes. Staff are targeting to secure two thirds of the estimated WWTP costs ($145M) from external sources. This target is consistent with past investments made by other levels of government on large infrastructure projects, such as the new Niagara-on-the-Lake Wastewater Treatment Plant that received two thirds grant funding from Provincial and Federal sources. We are actively advocating for this funding now.

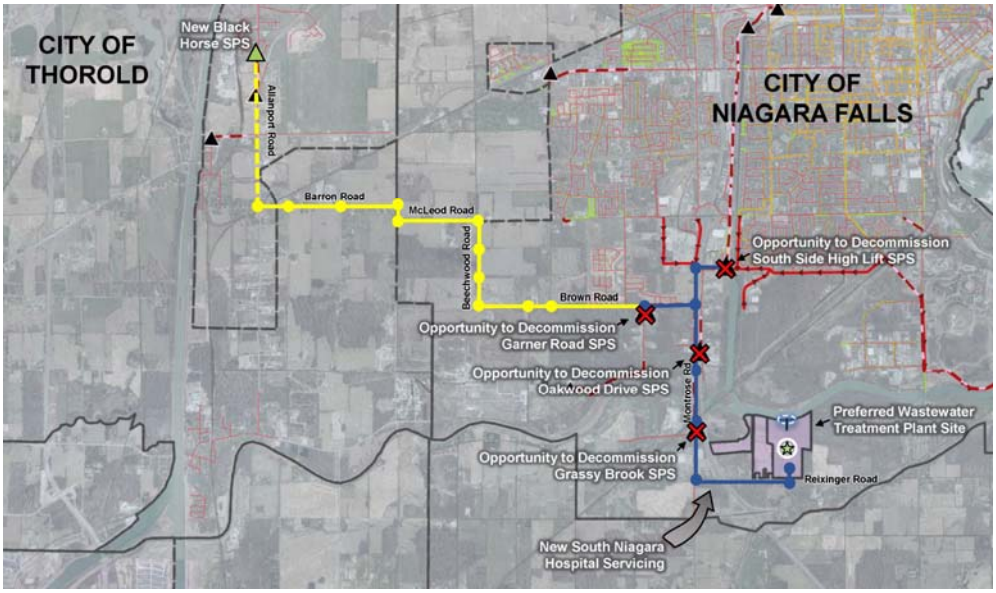
6. *Will the new wastewater treatment plant be completed in time to support for the new hospital?*
   The project team has been working closely with the Niagara Health System project team. We are reviewing the impacts of the updated flow projections from the new hospital. While the new plant and sewer may not initially be ready in time, we have an interim solution for the hospital through upgrades to the Grassy Brook sewage pumping station.

7. *What is the route for the sewer in south Niagara Falls?*
   Based on our more detailed investigations, we now propose the trunk sewer alignment to be along Montrose Road, on the west side of the QEW. This information is new and will be formally presented at the public information centre planned for fall 2021.

   We have been working closely with the Region staff team who leading the Montrose Road Widening and Development to align timing and ensure coordination.



8. *What is the preferred strategy to get existing and future flows from south Thorold to the new WWTP?*
   As recommended by the 2017 MSP, the team has reviewed and evaluated several options for the south Thorold strategy. The proposed strategy is to reverse the flows from the Peel Street and Black Horse sewage pumping stations through a new forcemain south along Highway 58 / Allanport Road to a new gravity trunk east along Barron Road, Mcleod Road, Beechwood Road and Brown Road. The new sewer will ultimately discharge to the new trunk sewer along Montrose Road. The project team has been working closely with the City of Niagara Falls and City of Thorold staff on this solution. As with the trunk sewer alignment, this information is new. We will be formally presenting it at the public information centre planned for fall 2021.



9. *The preferred site location is at 6811 Reixinger Road. What is the process and timing for the Region to purchase the property?*
   The Region has had a 3rd party conduct an appraisal on the value of the property and we have provided the report to the owner. The owner may opt to conduct his own independent appraisal. The Region intends to make an offer to the owner.

   Timing to complete the transaction depends on the owner's response. In the event that an agreement with the property owner cannot be reached, Regional staff, with external legal counsel, will request Council to approve the initiation of formal expropriation proceedings to acquire the property on a compulsory basis in accordance with the *Expropriations Act*. Expropriation allows for an adjudicated process to determine a price. This process could take up to 14 months. However, it remains our hope to avoid expropriation and acquire the lands amicably.

10. *What is the schedule for the project?*

    The project team intends to have a final Public Information Centre by fall 2021 and complete the Environmental Assessment by early 2022. The detailed design of the new WWTP, plant outfall and the Montrose Road sewer will commence in 2022. Construction is expected to start in 2023 if all funding sources are secured.