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**Subject:** Niagara Falls Wastewater Treatment Plant Secondary Upgrades Project – Green Municipal Funding Update

**Report to:** Public Works Committee

**Report date:** Tuesday, March 7, 2023

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## Recommendations

1. That Regional debt in the Niagara Falls Wastewater Treatment Plant Secondary Upgrades Project (10SW1517) of \$7,165,400, **BE SUBSTITUTED** by \$6,230,730 of Federation of Canadian Municipalities Debt funding and \$934,670 of Federation of Canadian Municipalities Grant funding from the Green Municipal Fund; and
2. That the necessary amending By-law **BE PREPARED** and **PRESENTED** to Council for consideration.

## Key Facts

The purpose of this report is to:

- Advise Council of the increased grant funding of \$934,670 from the Federation of Canadian Municipalities (FCM) as part of the Green Municipal Fund (GMF) to be used in the Niagara Falls Wastewater Treatment Plant Secondary Upgrades Project (Project 10SW1517). This approval increases the total loan amount to \$22,752,530 and grant amount to \$3,412,870 (see Appendix 1).
- Obtain Council approval for the substitution of Regional debt with FCM debt and grant funding from the GMF for Niagara Falls Wastewater Treatment Plant Secondary Upgrades Project (10SW1517). Budget Control By-Law Section 6.5 requires Council approval for capital budget adjustment funded by external sources for amounts exceeding \$1 million.

## Financial Considerations

The Regional debt portion of the Niagara Falls Wastewater Treatment Plant Upgrades Project (10SW1517) of \$7,165,400 will be replaced by \$6,230,730 of Debt Funding and \$934,670 of Grant Funding from the GMF as shown below.

**Project Funding Sources – Niagara Falls Wastewater Treatment Plant Upgrades Project (10SW1517)**

<b>Funding Sources</b>	<b>Council Approved Budget</b>	<b>Budget Revisions PW 9-2023</b>	<b>Revised Council Approved Budget</b>
Regional reserves & debt (includes Federal Gas Tax Funding)	\$37,145,400	(\$7,165,400)	\$29,980,000
FCM GMF Debt	\$16,521,800	\$6,230,730	\$22,752,530
FCM GMF Grant	\$2,478,200	\$934,670	\$3,412,870
Development Charges	\$120,000		\$120,000
Capital Variance Project - Wastewater	\$5,767,129		\$5,765,129
<b>Total</b>	<b>\$62,030,529</b>	<b>\$0</b>	<b>\$62,030,529</b>

The Regional debt being replaced by FCM debt was originally transferred from the Niagara-on-the-lake Wastewater Treatment Plant Facility Decommissioning Project (10SW1528) through Report PW 38-2022 as the project was not moving into construction in the near future due to the Niagara Region working closely with Parks Canada and the Department of National Defence on decommissioning strategies for the lagoon.

A draft by-law to amend authorized long-term debt financing for the project has been included as Appendix 2 to this report.

**Analysis**

**Project Background**

The Niagara Falls Wastewater Treatment Plant (WWTP) is owned and operated by the Region and is located at 3450 Stanley Avenue, in the City of Niagara Falls.

The WWTP is a secondary treatment plant consisting of screening, aerated grit removal, flocculation, chemically enhanced primary treatment (CEPT), and rotating

biological contactor (RBC) units for biological treatment, final clarification, and chlorination/dechlorination for secondary effluent disinfection.

The original primary settling tanks and sludge digestion facility were constructed in the early 1960s. Upgrades have occurred since that time, most significantly in 1982 (plant expansion) and 1986 (conversion to secondary treatment). The existing sludge dewatering facility and the centrate equalization tank were added to the digestion system in 2006.

The WWTP has experienced operational challenges in recent years, including noncompliance of plant discharge, multiple failures of the RBC mechanical system, poor RBC treatment performance, insufficient sludge digestion capacity, and digester failures. The RBCs are at end of life and are failing on a regular basis.

### **Green Municipal Fund (GMF)**

GMF supports municipalities, through capacity-building and funding, to reduce pollution, improve energy efficiency, revitalize public infrastructure and more.

FCM's GMF is a unique mix of funding and training that leverages a \$1.65 billion endowment from the Government of Canada to give municipalities the tools they need to accelerate the transition to a low-carbon future. Their work focuses on five priority sectors: energy, waste, transportation, land use and water.

From its inception over two decades ago, GMF has been a direct response to the needs of the 2,000+ municipalities, which represent more than 90 percent of all Canadians, that are members of FCM. The FCM team co-created GMF with its members in response to their heightened sense of urgency around a lack of sustainable infrastructure funding.

### **Niagara Region and the Green Municipal Fund**

The Niagara Falls WWTP Secondary Upgrades – Phase 1 Project met the GMF Environmental Eligibility Criteria as a regulatory project, as well as its innovative nature.

Implementation of this project is critical, as the Niagara Falls WWTP potentially faces ongoing ECA non-compliances, and there is currently, an active compliance order from the MECP, and a written warning from EC.

The Region has taken a holistic approach throughout the design process, to ensure the proper solution is implemented. This solution serves to mitigate construction risk, while providing a well performing system. Consultants, vendors and Region staff have invested significant resources, in terms of time and effort, to ensure selection of the “right” technology.

The MBBR process originated in Scandinavia in the late 1980s and is well established worldwide as a sustainable treatment system in the industrial and municipal wastewater markets. MBBR is also a well-proven technology in North America, however there are only a handful of installations in municipal WWTPs in Canada.

The MBBR system will be a new treatment technology for Niagara Region, as the existing WWTPs utilize conventional activated sludge (CAS) or extended aeration biological treatment. Site tours and calls with vendors and owners in Ontario and the United States, were conducted to determine if this technology was truly suitable and applicable to the Region’s wastewater volume, characteristics and climate. Once satisfied with the approach, the Region finalized the selection of the MBBR and continued the detailed design phase, and is now in the construction phase.

The project could be reviewed and adopted by other municipalities for the following reasons:

- Many WWTPs are reaching the end of their useful service life, and will require full treatment or process upgrades with similar constraints, to maintain operation;
- Influent flows continue to increase due to extreme events and the effects of both climate change and growth;
- Property continues to become less available and more expensive to acquire;
- Regulatory compliance requirements continue to become more strict;
- Capital budget prioritization;
- Regulatory asset management requirements (O. Reg. 588/17).

This project demonstrates innovation with “out-of-the-box” solutions, while effectively addressing the regulatory needs.

The FCM in partnership with the Government of Canada, oversees public announcements regarding GMF initiatives (with the exception of reporting to Council).

## **Compliance and Performance**

A new ECA was issued to the Region for the Niagara Falls WWTP on August 22, 2021. The new ECA requires that all proposed works be constructed, installed and in operation within five (5) years of the approval date, thus, secondary treatment upgrades must be commissioned by August 22, 2026.

The ongoing plant upgrades aim to bring the Niagara Falls WWTP back into compliance with relevant federal and provincial treated effluent limits. The upgrades have been divided into two phases. Within the first phase of the upgrade (“secondary treatment”), the Region will replace the existing secondary (biological) treatment process, thereby eliminating the ongoing operational and performance issues with secondary treatment. The second step (“digestion”) phase involves design and construction of a more robust and adequately-sized solids treatment and handling process (digesters).

## **Alternatives Reviewed**

Council could consider not accepting the FCM grant, however this would result in not reducing the debt burden for this project.

## **Relationship to Council Strategic Priorities**

This recommendation is related to the Responsible Growth and Infrastructure Planning, Objective 3.3: Maintaining Existing Infrastructure. Through asset management planning, the Niagara Falls WWTP upgrades project is required to ensure sustainable investments in the infrastructure needed to provide proper treatment of wastewater which meets MECP effluent quality requirements.

## Other Pertinent Reports

- [PW 38-2022 Asbestos Remediation with the Niagara Falls Wastewater Treatment Secondary Upgrades](https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=a9972d29-13ff-4e8f-9318-aeae86a746cc&Agenda=Agenda&lang=English&Item=21&Tab=attachments)  
(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=a9972d29-13ff-4e8f-9318-aeae86a746cc&Agenda=Agenda&lang=English&Item=21&Tab=attachments>)
- [PW-53-2021 Niagara Falls Wastewater Treatment Plant Secondary Treatment Upgrades Contract Award](https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=b17015c6-f064-4a98-9663-96710d69cc3c&Agenda=Merged&lang=English&Item=16&Tab=attachments)  
(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=b17015c6-f064-4a98-9663-96710d69cc3c&Agenda=Merged&lang=English&Item=16&Tab=attachments>)

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### Prepared by:

Jamie Anderson  
Senior Project Manager  
Water & Wastewater Services  
Public Works Department

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### Recommended by:

Bruce Zvaniga, P.Eng.  
Commissioner of Public Works  
Public Works Department

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### Submitted by:

Ron Tripp, P.Eng.  
Chief Administrative Officer

This report was prepared in consultation with Tony Cimino, C.E.T., Associate Director, W-WW Engineering; and Benjamin Collins, Program Financial Specialist, Renee Muzzell, Manager of Program Financial Support and reviewed by Joseph Tonellato, P.Eng, Director, Water & Wastewater Services.

## Appendices

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| Appendix 1 | Letter dated January 13, 2023, from Alan De Sousa, Chair, Green Municipal Fund Council to Regional Chair Jim Bradley and Members of Council |
| Appendix 2 | Draft by-law to amend By-law 2022-76 to Authorize Long-Term Financing   |



**President  
Présidente**

Taneen Rudyk  
Councillor  
Town of Vegreville, AB

January 13, 2023

**First Vice-President  
Premier vice-président**

Scott Pearce  
Maire  
Municipalité de  
Canton du Gore, QC

Regional Chair Jim Bradley  
and Members of Council  
Regional Municipality of Niagara  
1815 Sir Isaac Brock Way  
Thorold, Ontario  
L2V 4T7

**Second Vice-President  
Deuxième vice-président**

Geoff Stewart  
Deputy Mayor  
Municipality of the  
County of Colchester, NS

**Project Title:** Niagara Falls Wastewater Treatment Plant Moving Bed Biofilm Reactor (MBBR) Retrofit  
**Application Number:** GMF-20-0003

**Third Vice-President  
Troisième vice-présidente**

Rebecca Bligh  
Councillor  
City of Vancouver, BC

Dear Regional Chair Jim Bradley and Members of Council:

**Past President  
Présidente sortante**

Joanne Vanderheyden  
Mayor  
Municipality of  
Strathroy-Caradoc, ON

On behalf of the Green Municipal Fund (GMF) Council and FCM's Executive Committee, I would like to congratulate the Regional Municipality of Niagara on its successful funding application for the above-noted initiative.

**Chief Executive Officer  
Cheffe de la direction**

Carole Saab  
Ottawa, ON

It is my pleasure to confirm that the Regional Municipality of Niagara has been approved for an additional loan up to a maximum of \$6,230,730 and an additional grant of \$934,670 up to 15% of the loan amount which will bring the total approved loan amount from \$16,521,800 to \$22,752,530 and the grant amount from \$2,478,200 to \$3,412,870.

In the near future, Ulana Fries will contact the Regional Municipality of Niagara to finalize the agreement for this funding. FCM's obligation to fund the above-noted initiative will only become binding once the agreement is signed.

FCM, in partnership with the Government of Canada, oversees public announcements regarding GMF-funded initiatives. In the coming weeks, our media relations team will contact the Regional Municipality of Niagara to discuss the process for a public announcement. Until that time, before making any public statements related to the status of the application process for GMF funding (with the exception of reporting to Council), please contact the FCM media team at 613-907-6395 or by email at [media@fcm.ca](mailto:media@fcm.ca).

24, rue Clarence Street  
Ottawa, Ontario, K1N 5P3

T. 613-241-5221  
F. 613-241-7440

[www.fcm.ca](http://www.fcm.ca)

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Thank you for your interest in GMF. We look forward to working with you to improve the quality of life in your community, and to sharing the results of your initiative with communities across Canada.

Sincerely,



Alan De Sousa  
Chair, Green Municipal Fund Council

ADS/UF:nk

cc: Lisa Vespi, Manager Capital Projects Engineering, Regional Municipality of Niagara





THE REGIONAL MUNICIPALITY OF NIAGARA

BY-LAW NO. 2023-XX

A BY-LAW TO AMEND BY-LAW 2022-76 TO AUTHORIZE LONG-TERM FINANCING  
(1-30 YEARS) IN THE AMOUNT OF \$22,752,530  
NIAGARA REGION CAPITAL PROJECTS

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WHEREAS Section 403, Municipal Act, 2001, S.O. 2001, c.25. as amended, authorizes the Council of The Regional Municipality of Niagara (Regional Council) to authorize long-term borrowing by the issue of debentures on the credit of the Regional Corporation for its own purposes and for the purposes of one or more of its lower-tier municipalities, and

WHEREAS long-term financing for capital projects included in the 2021 Capital Budget that was adopted by the Regional Council on January 21, 2021 and approved by By-law No. 2021-01 and By-law No. 2021-02 on January 21, 2021, is deemed to be amended as shown on the Treasurer's Report attached to this by-law (Appendix I).

WHEREAS long-term financing for capital projects included in PW38-2022 Appendix 3 that was adopted by the Regional Council on September 22, 2022 and approved By-law No. 2022-76 on September 22, 2022 be amended as shown on the Treasurer's Report attached to this by-law (Appendix 1)

NOW THEREFORE the Council of The Regional Municipality of Niagara enacts as follows:

1. That the amounts of long-term financing (1-30 Years) for project 10SW1517 authorized in the 2021 Capital Budget and amended in By-law No. 2022-76 respectively be amended as shown on the Treasurer's Report attached to this by-law (Appendix I);
2. That the Treasurer be authorized to execute the Treasurer's Report attached to this By-law as Appendix I; and
3. That this by-law shall come into force and effect on the day upon which it is passed.

THE REGIONAL MUNICIPALITY OF NIAGARA

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James Bradley, Regional Chair

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Ann-Marie Norio, Regional Clerk

Passed:

Appendix I – Treasurer’s Report:

## TREASURER'S REPORT

### PROJECT IDENTIFICATION AND FINANCING INFORMATION

Project ID	Niagara Falls WWTP Upgrade Program (2021 Capital Budget)	Long-term Financing	Term (min-max)
J_10SW1517	FCM Debt	\$22,752,530	1-30
J_10SW1517	FCM Grant	\$3,412,870	
J_10SW1517	<b>TOTAL</b>	<b>\$26,165,400</b>	

### TREASURER'S VERIFICATION REPORT

#### (REQUIRED ONLY ON PROJECTS INVOLVING DEBENTURE FINANCING)

This confirms that I have checked the "Debt Repayment Limit" for Regional Niagara and passage of the by-law to approve these projects will not cause the Region to exceed its limit.

DATE \_\_\_\_\_ SIGNATURE \_\_\_\_\_