
Memorandum

PDS-C 1-2024

Subject: Combined Sewer Overflow Control Program Update

Date: January 10, 2024

To: Planning and Economic Development Committee

From: Ilija Stetic, Manager W-WW Infrastructure Planning

The purpose of this memo is to respond to a Council information request about the Combined Sewer Overflow (CSO) Control program outstanding projects and unused funding.

Background

The CSO Control Cost Share Program has been in place since 2007 and is intended to facilitate shared funding for Local Area Municipalities (LAM) projects to help mitigate the impacts of wet weather events on the Region-wide sanitary system and the environment. As a result, the Region benefits from this program by gaining capacity and improved operations at regionally owned trunks, sewage pump stations and wastewater treatment plants, which in return, could be used for growth by reducing and deferring the need for oversizing Regional infrastructure throughout the system. The main purpose of this program is to reduce and remove stormwater that is overwhelming the local sanitary collection system which results in potential basement flooding, overflows to the environment, and reduced system capacity for growth.

The CSO Control and Wet Weather Management Policy was approved by Regional Council in 2007 and revised in 2014. The policy statement recognizes the inter-dependent nature of wastewater collection and treatment systems in Niagara. This policy facilitates the shared funding of strategic, prioritized, and coordinated solutions that mitigate the impacts of wet weather events on municipal sanitary systems and the environment. The policy acknowledges the joint responsibility and shared role of the LAMs and the Region in their efforts to timely eliminate, reduce, and report on the CSO and wet weather flow as they negatively impact the health, safety, environment, and economy of Niagara. The policy promotes the “Optimal Solution.” including the best return on investment, independent of ownership and partnership share between the municipalities for the benefit of all.

The CSO Working Group includes representation from all 11 urban serviced LAMs that meet several times during the year to review the CSO Program, projects, priorities, and improvements. This group has developed administrative procedures and criteria to evaluate project submissions in accordance with the CSO guiding principles. CSO Funding Applications are typically submitted by LAMs in Q1 of each year and evaluated. The ranking system is based on the order of priorities starting with elimination of extraneous flows and continuing with reduction and control of extra flow entering the wastewater collection system. Successful projects are reported to Council in Q2 and the respective funding agreements are then completed. Appendix 1 provides the CSO Control Funding percentages depending on project type and Appendix 2 has the CSO Control Program Terms and Funding Conditions.

Regional staff administer the program and agreements, initiate opening of individual projects for financial tracking, approves Region funding portion of project invoices, follows up on their status and completion with LAM, closes completed or inactive projects with written confirmation from LAM.

Financial Process

Once the CSO Projects are approved, a purchase order is initiated for each of the individual approved projects and the operating funding is encumbered at the end of the year. Encumbered means the funds are set aside specifically for that project application. If the budget is unspent at the end of year, the funding is transferred to the Encumbrance Reserve. The Budget Control By-Law provides that the total amount of each years Encumbrance Reserve gets set up (rolled over) in the next years' operating budget to provide the budget flexibility to allocate funds in line with the LAM timing of project completion. If an encumbered project is completed or cancelled and then closed out in the year with surplus funding remaining, it will result in an operating budget surplus in the year it is completed. The 50% DC portion would be returned to DC reserve and 50% wastewater rate funded portion rolls up as surplus and returned to the wastewater reserve in accordance with reserve policy.

CSO Program Summary 2007 – 2023

From 2007 to 2023, there have been 434 CSO applications/projects approved with 314 closed, and 120 ongoing. The total CSO Program Budget to date includes approximately \$75.7 million awarded for applications/projects with \$44.9 million invoiced, and \$12.2 million is remaining for open projects. There has been

approximately \$18.7 million returned to the reserves due to projects being closed with surplus funds as either under budget or cancelled.

Appendix 3 provides a table with the CSO Program Summary from 2007-2023 showing the total awarded funding, total invoiced, outstanding/remaining balance, amount returned to reserves (either wastewater or development charges), number of approved and closed projects for each municipality.

Appendix 4 provides a table showing the types of works for the CSO applications from 2007-2023 for each municipality. Please note that the number of projects will not be the same as the number of works as multiple works could be included in a project (e.g., sewer separation that included repair or rehabilitation).

Based on CSO applications received, the grand total of estimated CSO volume reduction cumulated to just under nine million cubic meters per year for the entirety of the CSO program from 2007 – 2023. Moving forward, post flow monitoring has been identified as a requirement at the end of a completed project to determine the measured reduction more accurately for inflow and infiltration impacting the sanitary system. As an alternative, hydraulic modeling work and reporting can be used to estimate extraneous flows reduction as well.

CSO Program Improvements

Greater review of the timelines of project starts and completion has been implemented to address the older approved CSO projects with encumbrances. Regional staff connects with LAM representatives on a regular basis for project updates to better understand if these older projects are to proceed, closed, or canceled as priorities may have shifted and focused on other targeted areas. As per the CSO Control Program Terms and Funding Conditions presented in Appendix 2, funding of a project by the Region may expire if the LAM does not invoice the Region within three years of the date of approval. If a project does not proceed, it can be closed and Regional funding will be returned to the reserves.

Regional staff have connected with all LAM representatives from the CSO Working Group on the status of older CSO projects over this year. Based on these discussions, it was agreed that for the 2024 application year, if any CSO projects from 2019 or prior remained open, then the LAM would not be eligible for submitting applications for new projects in 2024. This requirement has been effective to assist with addressing the older projects.

An update to the CSO project remaining budget encumbrances by LAMs to the end of 2023 will be provided to Council in Q2 of 2024 with the 2024 CSO Funding Award Report.

Respectfully submitted and signed by

Ilija Stetic, B.Sc., CET, PMP
Manager W-WW Infrastructure Planning
Growth Strategy and Economic Development

CSO Control Program Funding Options

Project Category	Project Types	Funding %	Region %	Municipality %
1.	Sewer Separation	40%		
	Work Examples of Sewer Separation:			
	Disconnection of road drainage		40	60
	Disconnection of private		60	40
	Disconnection of road, previous disconnection of private or opposite		50	50
2.	Studies	15%		
	Work Examples of Studies:			
	PPCP as per the PPCP guide		50	50
	I&I and extraneous flow investigation including cctv/smoke dye testing ¹		50	50
	Mandatory flow monitoring - pre and post		60	40
	Investigative work on municipal/private side		50	50
	Public education/water conservation and efficiency measures		50	50
	Sewer use by-law development/update and municipal policies		50	50
3.	Source Control - Private Side	20%		
	Disconnection of roof leaders to be done by homeowners/municipalities as a prerequisite for other works on the private side.			
	Work Examples of Source Control – Private Side:			
	Disconnection of roof leaders		60	40
	Disconnection of weeping tiles from sanitary including applicable works		60	40
	Disconnection of private sump pumps		60	40
	Backflow preventer installation on sanitary		40	60
4.	Conveyance and Flow Control/Storage	15%		
	Work Examples of Conveyance and Flow Control/Storage:			

Project Category	Project Types	Funding %	Region %	Municipality %
	Real time control for detention		60	40
	In-line flow controllers design and construction (e.g. weirs)		60	40
	Off-line conveyance and pumping design and construction		60	40
	In-line/ off-line storage		40	60
5.	Repair/ Rehabilitation/ Replacement of Sewers Estimated $\geq 50\%$ flow reduction during WW events	10%		
	Work Examples of Repair/ Rehabilitation/ Replacement of Sewers:			
	Repair of sanitary/ manholes - gel sealing, spot repairs		30	70
	Spot repair lining		30	70
	Full length liner		30	70

Note 1: CCTV inspection - only site/project specific. Regular city-wide inspections should be part of municipal O&M.

CSO Control Program Terms and Funding Conditions

The terms and conditions under which funding will be offered to the successful applications, include the following:

1	Amount of Funding, Studies - The Region shall contribute 50% of total study costs for the PPCP and I&I studies, and 60% for the Pre and Post Flow monitoring projects provided the Region participates on a committee overseeing the study and the study covers the entire area tributary to the Wastewater Treatment Plant(s) and includes both local and Regional infrastructure.
2	Amount of Funding, Design & Construction projects – The Region shall contribute defined percentage of the cost based on the Funding Options matrix, provided that; the facility or measure is supported by a recommendation from a current CSO study, life cycle cost comparisons of alternative solutions were undertaken and the Region agrees with the cost comparisons, the Region agrees with the ‘best overall solution’, and the Region participates on a committee overseeing the design.
3	Third Party Funding – The Region’s funding shall be net of any third party funding approved for the project. If third party funding is obtained after Regional funding approval, the amount of Regional funding will be adjusted to be net of any third party funding. Payment of the funding to the Area Municipality shall be based on actual expenditures incurred up to the maximum amount approved by Regional Council based on the budget submitted with the application.
4	Project Lead Studies – Lead by either the Area Municipality or the Region based on a mutual agreement prior to initiation of study.
5	Project Lead Design & Construction – A project located in the Area Municipal wastewater system shall be managed by the Area Municipality while a project in the Regional wastewater system shall be managed by the Region. On a case-by-case basis the Region may consider managing a project in the local system, if requested by the Area Municipality.
6	Ownership and Operation of Assets – The ownership and operation of all new and existing assets shall remain the responsibility of the current owner. The Area Municipality, on a case by case basis, may request the Region to operate and maintain an existing or new CSO control facility on behalf of the Area Municipality on a direct charge back basis.
7	Follow up Flow Monitoring – On a case-by-case basis, the Region may include a condition or approval of funding that requires follow up flow monitoring to assess project’s effectiveness.
8	Expiry of Funding – Funding of a project by the Region may expire if the local Area Municipality does not invoice the Region within three (3) years of the date of funding approval by Regional Council. Also, if an Area Municipality decides not to proceed with a project, the Region may revoke funding. The Region may also withdraw funding for future phases if a project does not proceed on a continuous basis toward completion.
9	Indemnity – The Region, or its directors, officers, employees, agents or consultants will not be held liable as a result of providing funding for any project.
10	Regional Recognition – The Area Municipality is to ensure that the Region is to be acknowledged in all advertising and publicity related to the project for which funding was provided.

CSO Control Program Terms and Funding Conditions

The terms and conditions under which funding will be offered to the successful applications, include the following:

11	Project Deliverables – The Region shall receive copies of all project deliverables, including, but not limited to, reports, flow monitoring data, hydraulic modelling files, GIS layers/data, and technical memorandums.
12	Funding Agreement - A letter formalizing the funding in accordance with the Region's CSO Funding Policy will be issued to the Area Municipality for signature and used as the agreement to the terms and conditions of the funding.

Appendix 3: CSO Program Summary 2007 – 2023

Municipality	Total Awarded Funding	Total Invoiced	Outstanding Balance	Returned to WW Reserves/DC	Projects Approved	Closed Projects
Fort Erie	\$ 5,213,134	\$ 2,604,226	\$ 2,143,846	\$ 465,062	42	17
Grimsby	\$ 2,401,893	\$ 1,117,987	\$ 987,730	\$ 296,176	13	8
Lincoln	\$ 2,985,253	\$ 1,723,809	\$ 996,500	\$ 264,944	29	24
Niagara Falls	\$ 25,028,530	\$ 13,075,427	\$ 3,320,149	\$ 8,632,955	131	96
NOTL	\$ 1,633,906	\$ 824,049	\$ 204,452	\$ 605,405	26	21
Pelham	\$ 836,742	\$ 93,750	\$ 692,992	\$ 50,000	6	4
Port Colborne	\$ 3,432,403	\$ 2,231,649	\$ 728,155	\$ 472,599	15	7
St. Catharines	\$ 15,567,811	\$ 11,879,654	\$ 1,134,371	\$ 2,553,787	49	39
Thorold	\$ 4,786,690	\$ 3,916,925	\$ -	\$ 869,765	20	20
Welland	\$ 13,257,405	\$ 7,094,183	\$ 1,846,318	\$ 4,316,904	95	73
West Lincoln	\$ 585,700	\$ 329,840	\$ 121,225	\$ 134,635	8	5
Total	\$ 75,729,467	\$ 44,891,499	\$ 12,175,738	\$ 18,662,230	434	314

Appendix 4: Distribution of CSO Program Works 2007 – 2023

Municipality	Sewer Separation	Study	Source Control	Storage/Conveyance	RRR	Total Works
Grimsby	0	9	0	5	1	15
Fort Erie	0	26	1	0	22	49
Lincoln	1	13	6	2	15	37
Niagara Falls	109	16	9	3	20	157
NOTL	0	23	0	0	7	30
Pelham	0	3	0	0	4	7
Port Colborne	0	3	7	0	12	22
St.Catharines	20	16	0	9	6	51
Thorold	0	7	7	3	8	25
Welland	35	46	10	2	8	101
West Lincoln	0	4	1	0	3	8
Total Works	165	166	41	24	106	502

*Note that number of projects will not be the same as number of works as multiple works could be included under a project.

RRR – Repair, Rehabilitation, Replacement