ECA Number: **023-W601**
Wastewater System Number: **120003619**

St. Catharines

City of St. Catharines

Wastewater Collection System

2023 Annual Performance Report

For submission to the Ministry of Environment, Conservation and Parks

March 2024

St. Catharines

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1.0 Introduction and Purpose

The City of St. Catharines (the City or St. Catharines) owns and operates the St. Catharines Wastewater Collection System, which is operated under a Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA), ECA Number: 023-W601, issued by the Ministry of Environment, Conservation, and Parks (MECP). The new CLI-ECA replaces the numerous pipe-by-pipe Environmental Compliance Approvals (ECAs) that were previously issued for components of the municipal sewage collection system. The streamlined CLI-ECA outlines pre-authorized conditions for changes to the sewage works system and ensures standardized operating and reporting conditions to safeguard accountability and oversight, with enhanced requirements for monitoring and system operation. One condition of this CLI-ECA is preparing an annual report outlining actions relating to the CLI-ECA. This report is intended to fulfill that requirement.

It is important to note this is the first annual report under the CLI-ECA and while the report covers the 2023 year (January 1 – December 31), the CLI-ECA was not in place for the entire time. Additionally, some of the CLI-ECA requirements are phased in and so not all the requirements were in place for the full period either. As additional requirements come into effect and additional information becomes available it will be reflected in future annual reports.

2.0 Background

2.1 Wastewater Collection System

The City of St. Catharines' wastewater collection system is classified by the MECP as a Class I System (Wastewater System Number: 120003619) and services a population of approximately 137,800 residents.

The St. Catharines Wastewater Collection System consists of approximately 563 kilometres of gravity sewers (including trunk sewers, separate sewers, partially separate sewers, nominally separate sewers, and combined sewers), one (1) sewage pumping stations, nine (9) wet-weather storage facilities, and associated forcemains.

Wastewater in St. Catharines is collected and treated at two Wastewater Treatment Plants (WWTPs), the Port Dalhousie and the Port Weller WWTPs. Wastewater from the western portion of St. Catharines and a portion of northwest Thorold is treated at the Port Dalhousie WWTP. Wastewater collected from the eastern portion of St. Catharines, northeast Thorold and a small portion of Niagara-on-the-Lake is treated at the Port Weller WWTP. Both the Port Dalhousie and the Port Weller WWTPs as well as 15 sewage pump stations are owned and operated by the Regional Municipality of Niagara and are beyond the scope of this report.

Appendix A shows the collection area for each Wastewater Treatment Plant.

Types of Sewers
St. Catharines is serviced through networks of combined, partially separated and fully separated sanitary and storm sewers. These types of sewers are defined as follows:

- Combined – All sanitary and storm flows are collected within the same sewer.
- Partially Separated – Stormwater from roadways is collected in a separate storm sewer. The partially separated sanitary sewer collects all sanitary flows and some stormwater from weeping tiles and roof leaders.
- Fully Separated – Only sanitary flows are collected within the sanitary sewer - there are no storm connections. All stormwater is collected within a separate storm sewer. These types of sewers are mandatory for all new developments where no new storm connections to the sanitary sewer are allowed.

NOTE: The above sewer type definitions are slightly different, than those defined in the CLI-ECA. The City is working to better align these discrepancies, as part of the ongoing transitional efforts for improved consistency.

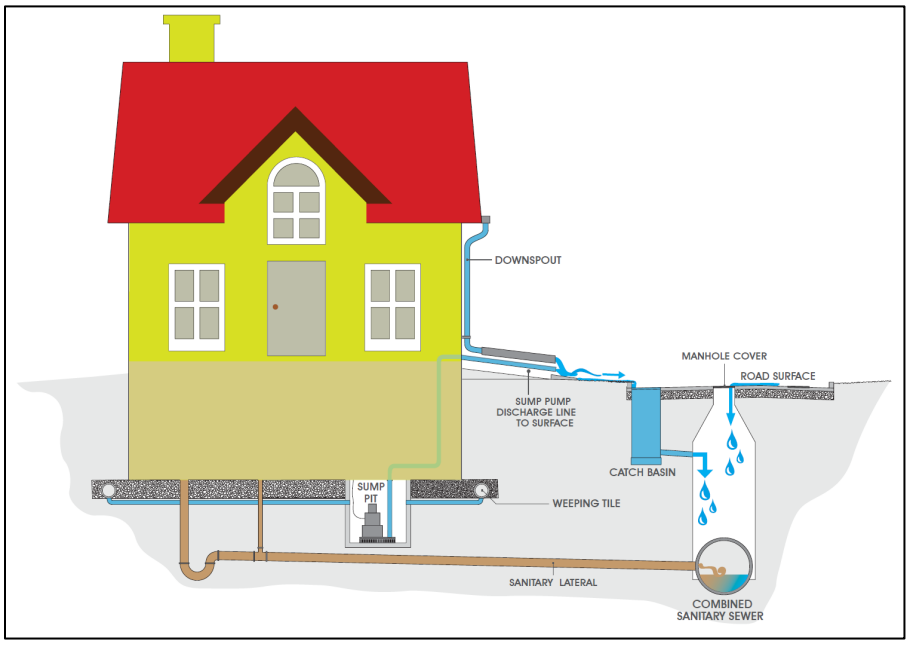

Figure 1: Typical Combined Sewer System

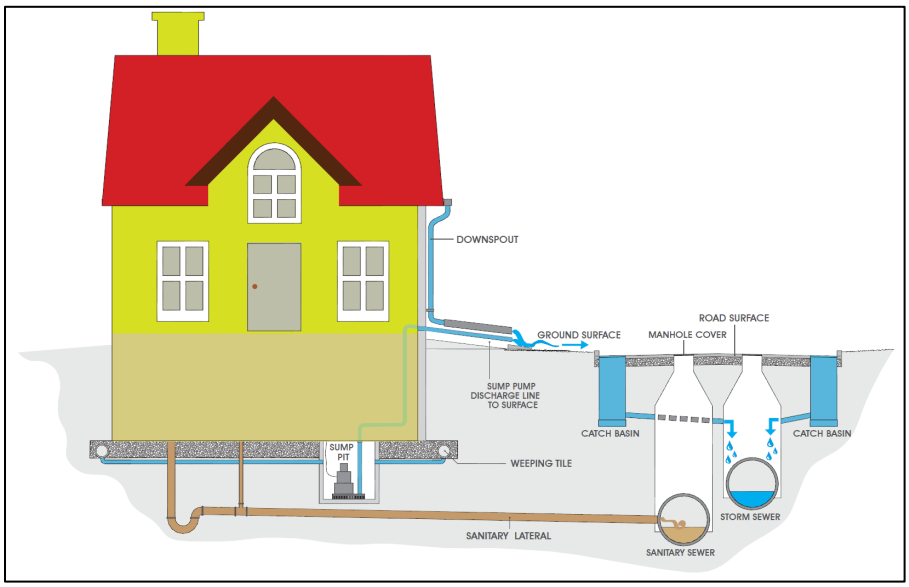

Figure 2: Typical Separated Sewer System

Procedure F-5-5

The MECP's Procedure F-5-5, *Determination of treatment requirements for municipal and private combined and partially separated sewer systems*, outlines the rules for treating the wastewater from municipal and private combined and partially separated sewage systems. A Combined Sewer Overflow (CSO) discharge, which is an untreated mixture of wastewater and stormwater, often contains high levels of pollutants such as pathogenic microorganisms, suspended solids, nutrients, oils, and grease. The CSOs represent a potential health hazard and can have the potential for adverse effects on aquatic life, recreational uses, and water supplies. The goals of Procedure F-5-5 are to:

- Eliminate the occurrence of dry weather overflows;
- Minimize the potential for impacts on human health and aquatic life resulting from CSOs; and
- Achieve as a minimum, compliance with recreational water quality objectives at beaches in the summer months.

Combined Sewer Overflows

Combined sewers were designed to transport both sanitary sewage and stormwater in the same pipes and were generally installed prior to the mid-1900s. During dry weather these sewers transport all the flow to a wastewater treatment plant. However, during large rainstorms, the volume of flow can exceed the capacity of the sewer system. When this happens, a portion of the flow is diverted away from the wastewater treatment plant and untreated sewage mixed with stormwater is released directly into local water bodies and ultimately Lake Ontario. The outfalls where this discharge happens are called Combined Sewer Overflows (CSOs). The regulating structures (e.g. weirs) in the system where the flow can be diverted are called CSO regulators. Within

St. Catharines, there are over 250 hectares which are serviced by combined sewers. These are generally located in the older neighbourhoods of Port Dalhousie, Merritton and central St. Catharines. There are 99 CSO regulating structures (e.g. weirs) in the St. Catharines Wastewater Collection System and 51 CSO outfalls.

Sanitary Sewer Overflows
A Sanitary Sewer Overflow (SSO) refers to an overflow within the sanitary sewer system that occurs under dry weather flow conditions and is not influenced by wet weather. There are no SSOs located within St. Catharines.

A summary of the wastewater system characteristics is provided in **Table 1**.

Table 1: Wastewater Collection System Characteristics

Total Length of sanitary sewers	~568 km
• Length of combined and partially separated sewers	~422 km
• Length of separated sanitary sewers	~124 km
Length of storm sewers	~406 km
# CSO Outfalls	51
# CSO Regulating Structures	99

3.0 2023 Wastewater Activities

The City undertook a number of projects and programs related to the wastewater collection system in 2023. For the purposes of this report the actions are categorized as Environmental Education and Public Outreach; Operations and Maintenance; Capital Works Projects; and System Monitoring. These actions were taken, in part, to address CLI-ECA requirements and Procedure F-5-5 requirements.

3.1 Environmental Education and Public Outreach Activities

Environmental Education
Public education and awareness campaigns have always been an important and highly visible component of the City's wastewater activities. The City participated in the annual Niagara Children's Water Festival at the new location of Brock University (previously held at Ball's Falls Conservation Area). Last year, the festival was held from April 25 to 27 and provided engaging presentations and activities focused on water themes, with approximately 2,100 students attending in person.

Additionally, the City hosted a booth the Spring and Garden Home Show on April 14 to 16, 2023. Residents were engaged with games, information, a rain barrel raffle and free give aways (including reusable metal straws and pet litter bags) to encourage

conversations about the link between local water quality through a lens of consumer habits and pet ownership responsibilities.

In addition to public education initiatives, the City has targeted awareness campaigns related to specific concerns, such as specific messaging to restaurants and residential areas about the proper disposal of fats, oils, and grease.

Rain Barrel Subsidy

On May 6, 2023 the City of St. Catharines held its 16th annual rain barrel sale for residents. The City subsidized the cost of 324 rain barrels, offering them for sale at a cost of $60. It is estimated that the installation of each new rain barrel removes 1.2 m^3 of stormwater annually, and that approximately 20% are installed on properties serviced by a combined sewer, with the rest being installed on properties serviced by separated, nominally separated, or partially separated sewers. On average each rain barrel is filled six times per year (Region of Waterloo).

Weeping Tile Disconnection

The Flood Alleviation Program (FLAP) is a grant program that subsidizes the cost of installing flood prevention devices (e.g. a backwater valve) on qualifying residential properties. Requirements of the program include disconnecting weeping tile connections from the sanitary sewer lateral of the home and redirecting them to a sump pump, as well as disconnection the home's downspouts as required by St. Catharines Sewer Use By-Law. In 2023, 41 homes applied to the FLAP program, with 15 homes having flood prevention devices installed.

In 2023, as part of the FLAP Program, the weeping tiles / foundation drains of six homes connected to the sanitary sewer system, were removed and the flows redirected to the surface via a sump pump. Weeping tiles are known to be a significant source inflow and infiltration into the combined sewers and removing these flows from private properties results in significant system improvements. It is estimated that the installation of each new sump pump removes 110 m^3 annually from the combined sewer system. Grant expenditures on this program were approximately $55,000 not including staff time and other internal resources.

Weeping tiles are also disconnected in some infill projects. In recent years, there were a number of in-fill projects where existing residential houses are demolished, and new units are built. In other cases, existing sewer laterals were repurposed. The current building code does not allow weeping tile connections to sanitary or combined sewers, instead a sump pit and pump are installed which directs flows overland (typically). While infill developments create an increase in sanitary flows, the wet weather flows from the weeping tile connections are significantly reduced. In 2023, three properties were demolished, and the sewer laterals were removed/capped. In addition, four other properties had their sewer lateral repurposed (i.e. weeping tile directed to a sump pit).

3.2 Operations and Maintenance Activities

Sewer Flushing and Cleaning Program

The City has an annual sewer flushing program. Components of this program include cycle flushing, annual flushing, and semi-annual flushing. Cycle flushing is the City's regular flushing program which is intended to clean the entire system every five years. The annual and semi-annual components of the program are specifically implemented to address areas of the system with known performance concerns which are susceptible to blockages and debris such as grease, stone, and infrastructure issues (e.g. flat sewers). Information from the flushing program is evaluated as needed and reviewed at the end of each program cycle. In 2023 the annual budget for this program was $254,500.

Through normal operational activities, as well as a review of the flushing program information, areas of the wastewater system are identified that require enhanced maintenance. This is often the result of hardened grease deposits or calcite in the pipes which cannot be entirely or effective removed by flushing activities. These locations are then scheduled for reaming activities as required. The 2023 budget for the program was $24,580.

Sewer Repairs

Regular operations activities as well as the CCTV program identify locations where immediate repairs are required to sections of the sewer system. The 2023 budget for the program was $300,000.

Emergency Response - Main Sewer Surcharging

In 2023, City staff responded to 35 main sewer surcharge events. These events were generally the result of debris such a grease or stone reducing capacity in the system during wet weather. The City's typical response to these issues is to remove the debris through flushing and vacuuming the impacted sections of sewer and restore the normal flow.

Emergency Response - Sewer Laterals

In 2023, the City responded to 304 requests for service due to blocked sewer laterals (including both public side and private side deficiencies). Blocked drains normally occur when debris or roots affect the ability of residential wastewater to drain properly to the main sewer causing wastewater to backup into the house or building.

Sanitary Sewer Related Public Complaints

In 2023 the City received eight complaints regarding the wastewater system. These included odour complaints and loose manhole covers. All complaints were investigated and corrective actions were taken as needed. These complaints were in addition to the

various service requests (e.g. blocked sewer laterals) noted elsewhere in this report.

Suspended Sewer Inspections
The St. Catharines wastewater system has eight elevated or suspended sewers. These sewers cross over sensitive areas such as watercourses. These sewers are visually inspected twice a year to ensure they remain in good working order.

Sewer Lateral Replacements
In 2023 the City repaired or replaced 96 service connections to the wastewater system. These activities were either undertaken by the City or were completed by private contractors. Issues with service connections are most often identified due to blocked drain calls, inspections due to reported basement flooding and other regular operations activities.

Combined Sewer Overflow Inspections and Maintenance
St. Catharines overflow regulators are regularly inspected by City staff. Any that cannot be safely visually inspected are included on the enhanced flushing list. Operational issues are dealt with on an ongoing basis as they are identified, and as budgetary allocations allow.

Wet Weather Storage Facility Operation and Maintenance
The City owns and operates nine combined wet weather storage facilities. The location of these facilities is shown in **Appendix A and Table 2**.

Table 2: Wet Weather Storage Facilities

Asset ID	Location
STOT220	Corbett Street (within the road allowance)
STOT122	Kernahan Park 381 Queenston Street
STOT121	Guy Road Park 61A Duncan Drive
STOT103	166 Westchester Crescent
STOT140	2 Welland Avenue
STOT120	Lockview Park 28A Rochelle Drive
STOT240	Glengarry Park 63 Glengarry Road
STOT123	Walkers Creek Park 142a Parnell Road
STOT180	Main Street (within road allowance)

In 2023, the wet weather storage facilities captured over 37,840 m^3 of combined sewage, which was subsequently treated at one of the two wastewater treatment plants. In 2023, the City retained Xylem Inc. to perform routine inspections and preventative maintenance of the pumps and associated equipment at the wet weather storage facilities. Site FC-9029 (Glengarry Park) operates in an automatic mode; Sites FC_9019 (Corbett Street) FC-6054-N (Main Street) do not have any pumps. The remaining sites are operated in a manually mode, due to a communications issue between the sensors and the control panels. The performance of these facilities has not been affected. Condition assessments for these facilities are scheduled in 2024.

In 2023, the City did not receive any odour complaints with regards to the storage facilities.

Sewage Pumping Station

The City owns and operates one sewage pumping located on Nadine Crescent. This pumping station services an area of approximately 2 hectares (serving 10 single detached properties). The station is connected to a forcemain of which discharges into the sanitary sewer on Erion Road. In 2023, the pumping station received maintenance which included the replacement of its three pumps.

3.3 Capital Works Projects

Sanitary Sewer Improvement Projects

In 2023, the City completed a number of sanitary sewer improvements with overall sanitary sewer improvement project expenditures of $884,000. In addition, the City will cost share two sanitary sewer projects in conjunction with Regional roadworks, with the Regional Municipality of Niagara. This information was derived from capital works projects completed in 2023. A summary of all the projects and their status is included as **Appendix B**.

Storm Sewer Projects

In 2023, the City invested $1,258,000 into a number of storm sewer projects. These capital investments resulted in improvements to the system specifically to reduce stormwater impacts in these catchments. In addition, the City cost shared one storm sewer project in conjunction with Regional roadworks, with the Regional Municipality of Niagara. A summary of all the projects and their status is included as **Appendix B**.

3.4 System Monitoring Activities

Rainfall and Sewer Flow Monitoring Program

In 2023, the City retained GM BluePlan Engineering (GMBP) to complete a Flow Monitoring and System Inflow and Infiltration Characterization Study (GMBP Inflow and Infiltration Characterization Study) to support enhancing the City wastewater system understanding, and to support future planning and wastewater system management decisions. As part of the program, 30 temporary flow monitors were deployed across the city. The data collection portion of the program has since concluded but the results are still pending.

As well, the City uses site specific flow monitoring data to help characterize system functionality on an as needed basis for development planning and validate sewer works. The City also operates four SmartCover type sewer monitors. These are level sensors specifically designed for monitoring flows in sanitary sewers. The data is used to measure flows in real time.

In 2023, the City retained GMBP to complete an analysis of the wastewater system effluent, producing an Overflow Reporting Technical Memo (GMBP Overflow Tech Memo), **Appendix C**. Rainfall analysis for the City was completed, as part of the works for this memo. For F-5-5 requirements rainfall data is analyzed for the period of April to November. **Table 3** summarizes the total rainfall volume, maximum one-hour volume and maximum twenty-four-hour volume for the seven-month period of April to November (F-5-5 Reporting Period).

Table 3: Rainfall Summary April to November compared to a Typical Year

Area	Rain Gauge	Total Rainfall (mm)	Max 1-hr Rainfall (mm)	Max 24-hr Rainfall (mm)
North St. Catharines	Port Dal WWTP	431.75	31	36
South St. Catharines	Env Centre	450.25	18.5	41.5
Typical Year Rainfall (1989)		519.10	27.5	47.6

From 2016 to 2023, total rainfall, within the F-5-5 reporting period, ranged from 276 mm to 692 mm, with an average rainfall of 449 mm. The rainfall in 2023 was the closest to the "average year" based on the rank-sum of the difference from the average based on the total volume and max 1-hr and max 24-hr rainfall intensity.

The Typical Year (1989) rainfall was slightly above the 2016 to 2023 average, at 15% above the total volume, 23% above the max 1-hr rainfall intensity (22mm per hour), and 2% above the max 24-hr intensity (46mm per day).

The information collected through these programs is used to upgrade the computer models of the sewers and determine collection system constraints. The locations of the rain gauges and outfalls are shown in the GMBP Overflow Tech Memo in **Appendix C**.

St. Catharines Action Plan and Master Servicing Plan Update

In 2023, the City commissioned a State of the Sewer Report to better understand the current challenges with the wastewater system. Some highlights of the findings in the report are:

- A substantial portion of the wastewater system was constructed over 70 years ago and will be reaching the end of their useful life in the coming years.
- The City has undertaken initiatives to better understand the systems existing condition and performance, such as sewer condition inspections and developing an all-pipes model of the sewer system.
- Some upgrades to the system to address legacy issues have been completed.
- These systems were designed for flows based on the expected occupancy of the property when the sewer was constructed (e.g. for residential properties it is based on a per capita amount). In some cases, developments are now being proposed with densities much higher than what currently exists.
- On a system-wide basis there is significant sewer capacity available; however, there are constraints in localized areas that will constraint or restrict certain development opportunities.
- The system's capacity concerns are related to peak flows under wet weather conditions.
- These systems were also designed to climate conditions and performance targets that do not account for climate change and modern performance standards.

The report concluded that undertaking a comprehensive and proactive management approach addressing wet weather impacts will result in a number of benefits including:

- Optimizing the use of existing sanitary infrastructure by freeing up potential development capacity currently being taken up by stormwater.
- Improving environmental outcomes by reducing wastewater impact to the environment by reducing CSO incidents.
- Reducing the basement flooding risk from surcharging sewers in significant rainfall events.
- Removing stormwater flows from the sanitary sewers will avoid the corresponding wastewater treatment costs over the long term (future cost avoidance).

On July 24, 2023, City Council approved an Action Plan including short-term and long-term actions. One of the recommendations of the Action Plan was for the City to initiate a Master Servicing Plan (MSP) with the goal of developing a long-term management plan that clearly outlines the short-term and long-term system upgrade needs as well as support maintenance and management activities. The MSP was awarded to GMBP by City Council on November 13, 2023. The MSP update is currently underway and is expected to be completed in 2025. The full State of the Sewers Report is attached as **Appendix D.**

Pollution Prevention and Control Plan Update Study

The City retained Hatch Engineering to update the St. Catharines Pollution Prevention and Control Plan (PPCP). A Pollution Control Plan (PCP) was originally developed in 1990 and included a number of recommendations aimed at reducing combined sewer overflows. The PCP has subsequently been updated with the most recent occurring in 2008. The PPCP Update Study is an opportunity to summarize and evaluate the structural and non-structural work that has been done to date; quantify the impacts of growth; re-evaluate alternatives to reduce the volume and frequency of CSOs; and provide long term strategies for the effective management of the wastewater collection system. A Public Information Centre was held on November 30, 2023, and the PPCP Update Study is expected to be completed in 2024.

4.0 2023 Wastewater Collection System Performance

Annual Wastewater Treatment Plant Flows

In 2023, the St. Catharines contribution of annual flow to the wastewater treatment plants was 19,804 Mega Litres (ML). The annual wastewater flows in St. Catharines has slightly decreased over the past decade. These flows vary significantly over time due to a number of factors including annual precipitation. **Figure 3** illustrates the annual flows to the wastewater treatment plants from 2013 to 2023.

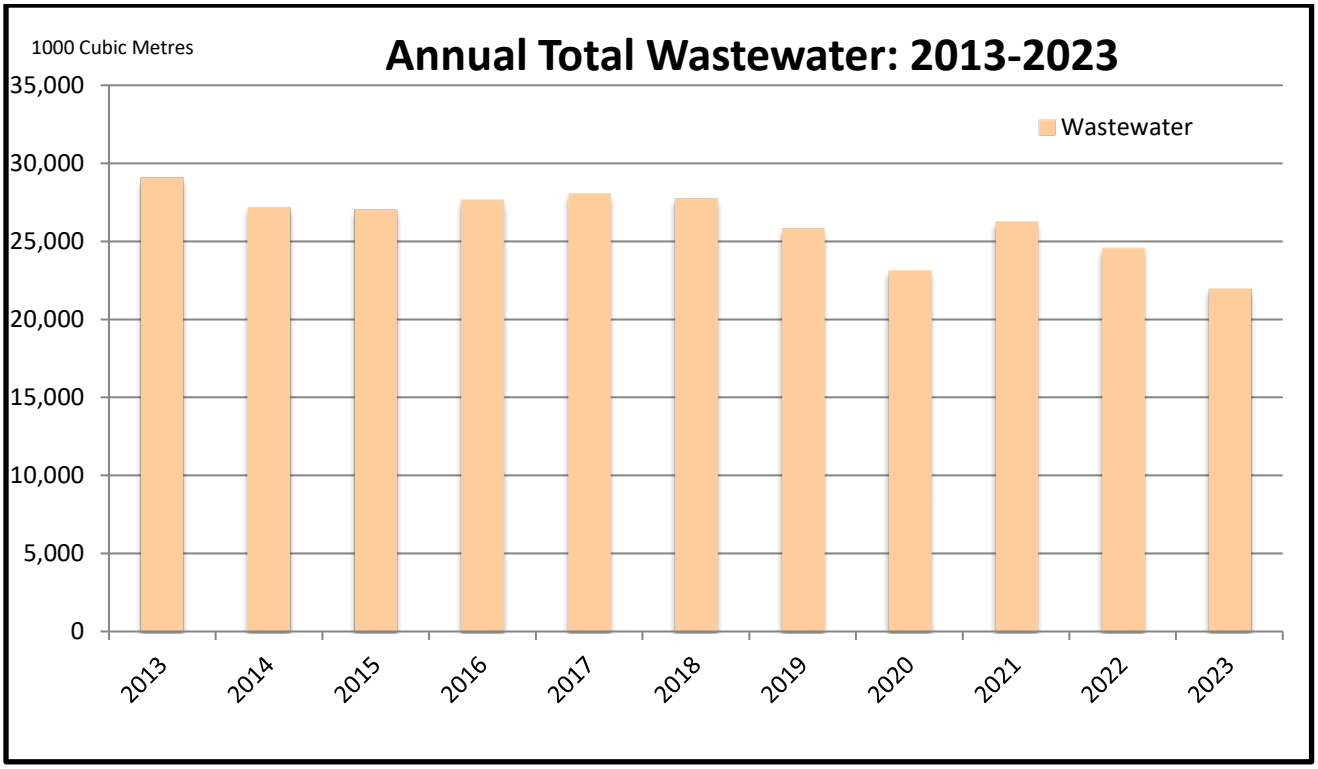

Figure 3: St. Catharines Annual Wastewater Flows to Treatment Plants 2013 - 2023

Combined Sewer Separation

The City actively pursues sewer separation opportunities where feasible. Sewer separation may be undertaken as part of the regular construction program, or in specific areas identified through the previous Pollution Control Plan, Environmental Assessments, Inflow and Infiltration investigations or regular operations activities.

Annual Mass Balance of Estimated Sewage Flows in 2023

A mass balance of estimated new flows into the combined sewer system and those flows removed are included below. As shown in **Table 4**, the results indicate a decrease

in the volume of sewage flows to the combined sewer. These estimates do not include the substantial decrease in volume from storm sewer separation projects due to the difficulty in obtaining accurate values. A summary of these projects is included as **Appendix B**.

Table 4: 2023 Mass balance of wastewater flows in Combined Sewers in St. Catharines

Item	Description	Annual Addition
New Connections	3 properties	510 m^3
Rain Barrels	75 rain barrels	-92 m^3
Weeping Tile Disconnection	6 properties with new sump basins	- 660 m^3
Demolition – Lateral Capped	3 properties – weeping tile removed	-840 m^3
Demolition – Lateral Repurposed	4 properties – weeping tile to sump	-440 m^3
Sewer Separation	Various sewer separation projects	Undetermined
TOTAL	Estimated annual decrease	**-1,522 m^3**

Note: See **Appendix E** for Assumptions used in these calculations.

Procedure F-5-5 Conformance

MECP Procedure F-5-5 outlines several controls to be implemented in relation to combined sewer overflows which are evaluated to measure combined system performance. **Table 5** lists those controls and the City's implementation status with relation to those controls.

Table 5: Combined Sewer Overflow Controls

Requirement	Status	Comments
Eliminate CSOs during dry weather	Complete	There are no known dry weather CSOs.
Establish pollution prevention programs	On-going	Programs include public education, water conservation, floatable control, downspout disconnection, rain barrels and by-law enforcement.
Establish operation, inspection, and maintenance programs	On-going	Programs include CSO regulator inspections, sewer flushing/cleaning, storage facility operation and maintenance programs.
Establish and implement a floatables control program	On-going	Includes source control activities (e.g. street sweeping) as well as physical removal (e.g. trash racks).
Maximize use of the collection system for wet weather storage	On-going	This includes a number of inter-connected sewers which allow the pipe to completely fill prior to a CSO occurring.
Maximize wet weather flows to the treatment plants	On-going	This includes the capture and temporary storage of wet weather flows in wet weather storage facilities and subsequent treatment at a WWTP.
Capture 90% of wet weather flows	On-going	Both the Port Dalhousie and Port Weller Sewershed has met the criteria for the past four years.

In 2023, the City retained GMBP to perform a hydraulic simulation of the wastewater collection system. This included undertaking a continuous simulation of the sewer system for the F-5-5 time period. The results of the model simulations are outlined in the wastewater system performance section. The annual simulation of the model provides data with regards the number of combined sewer overflow events, as well as volumes. **Table 6** lists total CSO volumes and percent capture by year from 2020 to 2023 for both the Port Dalhousie and Port Weller sewersheds based on the model results.

Table 6: Combined Sewer Overflow Volumes for St. Catharines from 2020 to 2023

Sewershed	2020	2021	2022	2023	Typical Year
Port Dalhousie					
Total CSO Volume	42,550 m^3	68,391 m^3	67,776 m^3	58,231 m^3	122,449 m^3
System Capture	98.9%	98.9%	98.9%	99.0%	91.7%
Port Weller					
Total CSO Volume	5,527 m^3	40,316 m^3	26,059 m^3	34,105 m^3	43,839 m^3
System Capture	97.9%	99.5%	99.5%	99.6%	93.5%

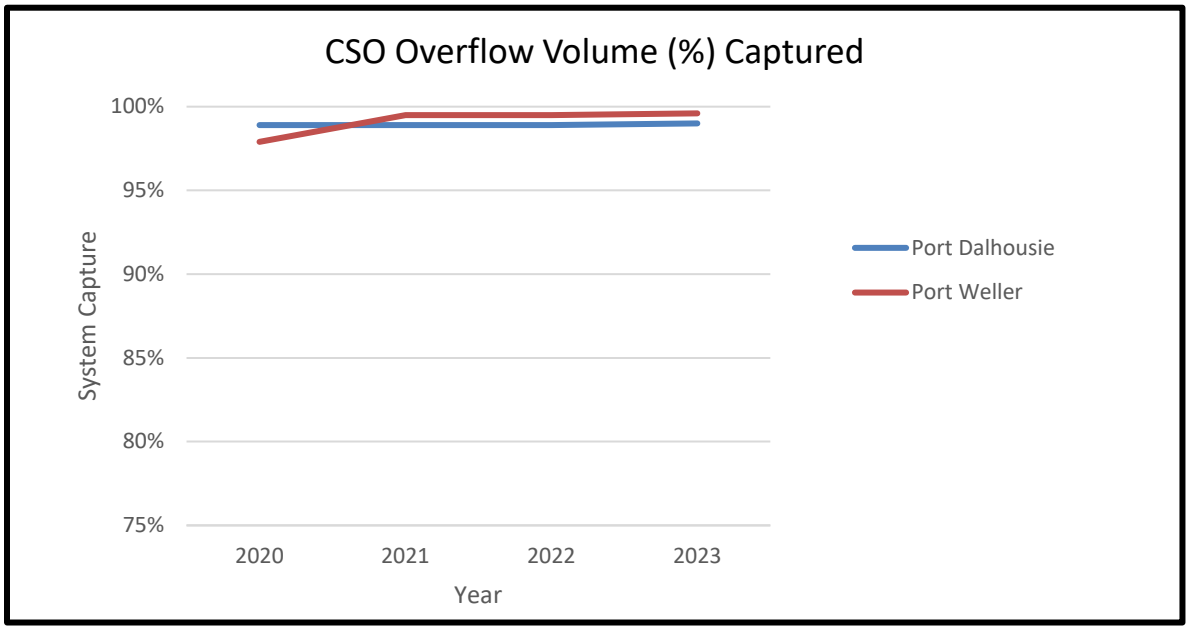

Figure 4: Combined Sewer Overflow Volumes for St. Catharines from 2020 - 2023

The total wastewater flow for both the Port Dalhousie and Port Weller treatment plants in 2023 was 19,804 ML. Based on the all-pipes hydraulic model the total wet weather flows were 12,337 ML and the total CSO discharges were 84 ML. In 2023, the City captured 99.6% of all wastewater flows, with 0.4% the flow being discharged to the environment from combined sewer overflows.

Annual CSO volumes can vary significantly from year to year as they are heavily dependent on the magnitude and pattern of rainfall. **Appendix C** lists all the CSO locations identified in the PCP, by sewershed and their annual overflow volumes and frequencies as modelled for a typical year, and 2020 through to 2023.

Sewage Spills
In 2023, the City reported one wastewater spill to the Spills Action Centre (SAC) SAC 1-3WG39A. The incident was resolved promptly with no adverse affects to the natural environment or human health, and no further issues are outstanding.

5.0 2024 Planned Activities

5.1 Planned 2024 Programs, Activities and Maintenance

The City will continue to monitor, improve, and eliminate flows to the combined sewer system. **Table 7** summarizes the various activities that the City will continue to implement for 2024, of which includes system monitoring activities and programs, environmental education and public outreach activities and operations and maintenance activities. The City has approved a multi-year budget for 2024, 2025 and 2026. The approved capital budget investment for sanitary sewer is:

- $9.4million in 2024
- $8.8 million in 2025
- $9.6 million in 2026

A copy of the approved multi-year capital budget can be found posted on the City of St. Catharines website.

Table 7: Planned 2024 Programs, Activities and Maintenance

Planned 2024 Programs, Activities and Maintenance	
Project	**2024 Budget**
System Monitoring Activities	
Sewer System Update	Ongoing
Rainfall and Sewer Flow Monitoring Program	Ongoing
Sewer Sampling	Ongoing
Extraneous Flow Elimination	$50,000
Pollution Control Priority Program	$1,000,000
Sewershed Analysis	$10,000
Environmental Education & Outreach Activities	
Environmental Education	Ongoing
2024 Rain Barrel Program	$37,000
Flood Alleviation Program	$120,000
Operation and Maintenance Activities	
Sewer Flushing - Operations	$254,500
Sewer Spot Repair - Operations	$38,570
Sewer Replacement - Operations	$33,230
Emergency Cleaning Main Sewer - Operations	$26,190
Sanitary Sewer Spot Repair Program	$250,000
Sanitary Sewer Reaming and Lining	$376,100
Sewer CCTV Inspections	$30,000

Wastewater Master Servicing Plan Update
The City retained GMBP to undertake a Wastewater Master Servicing Plan and is expected to be completed in 2025.

Additional Information
No additional information has been requested by the Niagara District MECP office.

6.0 Summary

The City of St. Catharines operates a Class 1 Wastewater Collection System consisting of approximately 570 kilometres of sewers and services a population of approximately 137,800 residents. The system is operated under Consolidated Linear Infrastructure Environmental Compliance Approval number: 023-W601; issued by the Ministry of Environment, Conservation, and Parks. One condition of this approval is an annual report outlining related actions for the previous year; this report is intended to fulfill that requirement.

This report summarizes the activities taken by the City in 2023 to operate, maintain, manage, monitor, and renew the wastewater collection system. A wide variety of activities were undertaken with a budget approval and expenditures of over $4 million excluding staff time. A copy of the approved Water and Wastewater budget for 2024 to 2026 can be found posted on the City of St. Catharines website. These activities demonstrate the City of St. Catharines is in full compliance with the various ECA requirements.

A number of metrics were used to assess the wastewater collection system in 2023. Notably 99.6% of all wastewater flows were captured and treated, with 0.42% of wet weather flow being discharged to the environment from combined sewer overflows. While there have been considerable improvements to the wastewater collection system over time CSOs still occur on a regular basis. This underscores the persistent nature of CSO issues and the long-term challenge they present. Continued efforts are required to fully meet the objectives of Procedure F-5-5 and eliminate the impact CSOs on the environment.

It is important to note this is the first annual report under the CLI-ECA and while the report covers the 2023 year (January 1 – December 31), the CLI-ECA was not in place for the entire time. Additionally, some of the CLI-ECA requirements are phased in and so not all the requirements were in place for the full period either. As additional requirements come into effect and additional information becomes available it will be reflected in future annual reports.

ECA Number: **023-W601**
Wastewater System Number: **120003619**

City of St. Catharines

Wastewater Collection System

March 2024

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