

Belleville Sewage Collection System

2025 Annual Report



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1. Introduction

The City of Belleville’s Consolidated Linear Infrastructure (CLI) Environmental Compliance Approval (ECA) for the Belleville Sewage Collection System (# 151-W601) lays out reporting requirements including an annual performance report to be submitted to the MECP by March 31st each year.¹

The CLI-ECA is administered by Ontario’s Ministry of the Environment, Conservation and Parks (MECP). It is issued under the Environmental Protection Act to fulfill requirements of the Ontario Water Resources Act.² It is the City’s permission and set of conditions for operating, maintaining, and altering the sewage collection system in Belleville. This report has been created to satisfy the requirement in Schedule E, section 4 of the CLI-ECA and covers the reporting period January 1, 2025 to December 31, 2025. It will be made available to the public on the City’s website.

2. Sewage Collection System Overview

The Belleville Sewage Collection System is a Class III wastewater facility.³ The system is owned and operated by the Corporation of the City of Belleville and consists of approximately 225 km of sanitary sewer mains and 13 sewage pumping stations. Two of these pumping stations are operated on the City’s behalf by the Ontario Clean Water Agency (OCWA) and are reported on by OCWA in a separate annual report submitted to the MECP. The entire system drains to the Belleville Water Pollution Control Plant (WPCP), operated under ECA # 1053-CX4QPN, which provides secondary treatment and disinfection prior to discharge.

The collection system consists of a series of underground pipes, as described in Table 1, and appurtenances such as maintenance holes and valve chambers.

Table 1: Sewer Types Found in the Belleville Sewage Collection System

Sewer Type	Size (Diameter)	Conveyance Method
Trunk	Large diameter, ≥ 750mm	Gravity
Collector	Vary, 250 – 750 mm	Gravity
Local	Smaller diameter, ≤200mm	Gravity
Forcemain	Vary, 50 – 600mm	Pressurized by pumps
Pressure sewer	Vary, 375 – 1500mm	Pressurized from the weight of the sewage built up within them

¹ “Environmental Compliance Approval For a Municipal Sewage Collection System, ECA Number: 151-W601, Issue Number: 5.” Ontario Ministry of the Environment, Conservation and Parks, Dec. 19, 2025.

² “Municipal Consolidated Linear Infrastructure Environmental Compliance Approvals.” Ontario Ministry of the Environment, Conservation and Parks, Sep. 24, 2024. Available: <https://www.ontario.ca/page/municipal-consolidated-linear-infrastructure-environmental-compliance-approvals>

³ “Certificate of Classification, Belleville Wastewater Collection, Certificate Number 1459.” Ontario Ministry of the Environment, Conservation and Parks, May 01, 2013.

Sewers that convey wastewater by gravity make up approximately 94% of the system by length.

Collection system facilities include both large and small capacity sewage pumping stations and a small bore system, as listed in Table 2. A sewage pumping station collects wastewater from lower-elevation sewers and pumps it up to a higher elevation so it can keep flowing by gravity to other parts of the collection system or to the Belleville WPCP. Typically, it includes a wet well (holding pit), pumps, valves/controls, level sensors, and alarms/backup power to prevent overflows and maintain reliable wastewater conveyance. The Small Bore System is a low-pressure sub-system serving ten (10) properties at the end of the Cannifton Road sanitary main equipped with pumps that discharge each property's wastewater to a small diameter forcemain in the road allowance.

Table 2: List of Belleville Sewage Collection System Facilities

Facility Type	Facility Name
Larger capacity pumping stations	• Dundas/Palmer SPS (operated by OCWA) • Front Street SPS (operated by OCWA)
Smaller Capacity Sub-Area Pumping Stations	• West Moira SPS • Forest Hill SPS • Symington SPS • Moira Lea SPS • Millennium SPS • Sherwood SPS • Bridge Street West SPS • Avonlough SPS • College Street East SPS • Cascade SPS
Small Bore System	• Cannifton Road Small Bore System

3. Monitoring and Analysis

Schedule E, Section 4.6.3 of the CLI-ECA requires that the annual report include a summary of all required monitoring data, if applicable, along with an interpretation of the data and conclusions drawn from this about the need for future modifications to the system or operations. No monitoring data was required within the municipal sewage collection system for the reporting period. It is anticipated that monitoring as part of future operations will be informed by the MECP's guidelines.

3.1. Voluntary Monitoring

In 2025, staff conducted voluntary monitoring in the sewage collection system to better understand wastewater quality across Belleville's sewersheds and to support proactive compliance with the City's Sewer Use Bylaw. Using portable autosamplers, staff collected wastewater samples from maintenance holes at strategic locations throughout the City and submitted them to an accredited laboratory for analysis. Testing typically included a core suite of wastewater quality indicators such as pH, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), and nutrients (e.g., ammonia, nitrogen and phosphorus).

Results were used to try to establish baseline conditions and help prioritize targeted follow-up in areas where elevated concentrations may indicate improper or higher-risk discharges. This program supports protection of the collection system and downstream infrastructure, helps safeguard performance at the water pollution control plant, and contributes to protecting receiving water and the broader environment.

4. Operations and Maintenance

Schedule E, section 4.6.4 and 4.6.5 of the CLI-ECA requires that the annual report include a summary of operating issues encountered and corrective actions taken, as well as calibration, maintenance and repairs carried out on parts of the system.

Operations can be generally considered as split between sewage pumping stations and sanitary mains.

4.1. Sewage Pumping Stations

Sewage pumping station (SPS) maintenance is conducted on a scheduled basis and in response to alarms or noted deficiencies.

4.1.1. Operating Issues and Corrective Actions

Each SPS is monitored continuously for alarms and operators are notified when there is an issue. Operators check for and troubleshoot or repair issues when responding to alarms and while conducting regularly scheduled checks.

In 2025, there were 28 alarm calls for pumping stations and 10 regularly scheduled checks that resulted in corrective actions. Most alarm calls were simple, requiring an inspection of the station, minor adjustment, and alarm reset. This includes various power failures and level alarms requiring a reset. Events from alarm responses or from regularly scheduled checks that required a corrective action to resolve are summarized in Appendix 1.

4.1.2. Calibration, Maintenance and Repairs

Each pumping station is checked on at least a weekly basis. Operators complete checks and perform maintenance on pumps, floats, alarms, levels, and similar items. Flow meter calibration is conducted by a third-party qualified contractor. Flow meter calibration was completed on June 09, 2025. Other maintenance and repairs are described in Appendix 1 and Section 6.

Larger maintenance projects are scheduled through the capital budget process and implemented through consultants and contractors. None were completed in 2025.

4.2. Sanitary Mains

Sanitary mains and appurtenances are maintained both on a scheduled basis and in response to customer requests and complaints.

4.2.1. Operating Issues and Corrective Actions

There were no significant operating issues for sanitary mains in 2025. Staff responded to 177 customer requests related to service laterals, which is the sewer pipe that connects a building's plumbing to the municipal sanitary main. These requests are normally received from customers concerned about a backup or unusual odours, and result in investigation by staff. Where possible, the lateral is rodded to restore flow. When this is not possible, or there is damage, then repair or replacement is scheduled. Occasionally the issue can be related to a blockage in the sanitary main, in which case operators flush the main to reinstate the flow. An issue with a service lateral can also be caused by a main break in which case operators repair the break and reinstate proper operation of the lateral. There were two collector sewer breaks in 2025.

4.2.2. Calibration, Maintenance and Repairs

Handheld analysis equipment is calibrated by staff as recommended by the manufacturer. There are no flow meters or other equipment installed in sanitary sewer mains that require calibration.

Maintenance is both planned and unplanned. In 2025, this included:

- Repair and replacement of maintenance hole frames and covers.
- Maintenance hole frame and cover adjustments.
- Annual sewer flushing program, covering approximately 25% of the sanitary system.
- Clearing blockages (mains and service laterals).
- Flushing known problem areas for blockages.
- Customer requests for lateral rodding and repair.
- Closed-circuit television (CCTV) video inspection of sanitary mains.
- Grease removal (mains).

Larger maintenance/rehabilitation projects, such as structural relining of sewer mains, are scheduled through the capital budget process and implemented through consultants and contractors. None were completed in 2025.

5. Customer Feedback

Schedule E, section 4.6.6 of the CLI-ECA requires that the annual report include a summary of any complaints received related to the Sewage Works and steps taken to address them. Most customer service requests are normally received from customers concerned about a backup or unusual odours. These are discussed in Section 4.2.1.

6. Alterations to the Authorized System

Schedule E, section 4.6.7 of the CLI-ECA requires that the annual report include a summary of all alterations to the Authorized System, including a list of alterations that pose a Significant Drinking Water Threat.

Two alterations were approved with construction commencing within the sewage collection system in 2025. The approved alterations were for the replacement of sanitary sewers on portions of Henry Street and Octavia Street and for the replacement of the Moira Street West Sewage Pumping Station. The Henry and Octavia Street alterations were documented through a Form SS1, and the Moira Street West Sewage Pumping Station through a Form SS2.

There were no alterations to the system in 2025 that posed a Significant Drinking Water Threat.

7. Collection System Overflows and Mitigation

Schedule E, sections 4.6.8 and 4.6.9 of the CLI-ECA require that the annual report include a summary of all collection system overflows and spills of sewage, as well as efforts made to reduce overflows, spills, and bypasses.

7.1. Overflows and Spills of Sewage

An overflow is a controlled discharge of wastewater to the environment from a designated location within the collection system. An overflow occurs when rainwater, groundwater intrusion and/or unplanned situations result in additional flows entering sanitary sewers that overwhelm the system. In 2025, signage was installed at each of the City's two (2) combined sewer overflow points (CSO) and four (4) sanitary sewer overflow points (SSO) to notify the public of their location.

A spill of sewage is normally an unplanned discharge of wastewater to the environment.

There were no collection system overflows or spills of sewage during the reporting period.

7.2. Efforts to Reduce Overflows, Bypasses, and Spills

7.2.1. Completed and Planned Projects

In 2025, approximately \$235,000 was allocated to assess the condition of 19 kilometers (approximately 8%) of the sanitary sewer system through CCTV inspections. In 2026, approximately \$100,000 has been allocated for planned CCTV inspections to assess the condition of an additional 8 kilometers (approximately 3.5%) of the sanitary sewer system. These inspections are expected to be completed in 2026. Inspection results will be incorporated into asset management planning and help inform where to direct capital spending on sewer rehabilitation and replacement projects in future years. It is expected that this work may help reduce bypass volumes at the Belleville Water Pollution Control Plant by identifying possible inflow/infiltration areas.

In 2025, \$2 million was allocated for the structural relining of approximately 3.4 kilometers of wastewater mains. \$2 million is also approved for 2026 for the structural relining of an additional approximate 3.4 kilometers of wastewater mains. Both projects are expected to be completed in 2026. The relining program is intended to rehabilitate pipes before they fail, extend their anticipated useful service life by 50 years, and reduce infiltration. The areas

proposed for relining have been selected based on the City's Asset Management Plan and condition data obtained from annual CCTV video inspections.

In 2025, reconstruction of portions of Henry and Octavia Streets commenced and will result in the elimination of approximately 250 meters of a combined sewer and the replacement of approximately 300 meters of sanitary sewers. The cost of the work to eliminate the combined sewer by installing a new storm sewer and appurtenances was approximately \$2.5 million. A further \$200,000 has been allocated for design work in 2026 associated with the Ann Street and Forin Street sewer separation project which will result in the elimination of approximately 350 meters of a combined sewer. The combined sewer, which conveys both storm water and sanitary sewage in the same pipe, will be replaced with new separate storm and sanitary sewers reducing the magnitude of overflows during wet weather events.

7.2.2. Details of the Establishment and Maintenance of a PPCP

Budget was approved for assistance in the implementation of the stormwater and sanitary sewer CLI-ECA's. One of the intended outcomes of the project, which is expected to conclude in 2026, is to update the PPCP in accordance with Schedule E, Section 8.2.2 of the CLI-ECA.

7.2.3. Conformance with Procedure F-5-1 and F-5-5

Conformance with Procedure F-5-1 and F-5-5 was assessed through the City's ongoing CLI-ECA implementation project. The "Conformance and Implementation Plan for Procedure F-5-5 (Wet Weather Assessment)" report was submitted to the Ministry on September 18, 2025.

7.2.4. Public Reporting

Work to reduce overflows, bypasses and spills is normally reported to the public through council meetings and the published minutes of these meetings as budgets are approved.

8. Summary and Conclusions

In 2025, staff successfully responded to a variety of operational issues at sewage pumping stations and in the collection system and conducted routine maintenance such as flushing, sewer rodding, maintenance hole repairs and CCTV inspections to prevent negative impacts to people, property, and the environment. To support Sewer Use By-law compliance and system protection, staff collected samples through its voluntary wastewater monitoring program to better understand baseline conditions and prioritize targeted follow-up. No collection system overflows or sewage spills and no MECP inspections occurred during the reporting period. Based on the monitoring, maintenance and repair activities conducted during the reporting period, staff have determined that the system is performing well.

Appendix 1 Summary of Sewage Pumping Station Operating Issues & Corrective Actions

Note: The Issue Date is when the issue began/was identified.

Issue Date	Pumping Station	Summary of Issue	Corrective Actions
January 10, 2025	Bridge St W	Pump hour-meter not working	Hour-meter replaced by a contractor.
January 12, 2025	Sherwood	Float not working properly intermittently affecting station operation.	Removed grease in attempt to fix float. Determined it was a faulty float in need of replacement. Contractor replaced float.
January 27, 2025	Moira Lea	Pump not working.	Pump removed to check for blockages. Replaced pump.
January 30, 2025	West Moira	Pump not working due to heavy grease build-up.	Flushed and removed grease from the station.
March 03, 2025	Millennium	Generator block heater failed.	Replaced block heater.
March 04, 2025	College St E	Pump failure alarm.	Removed pump and ensured no obstructions. Operators reinstalled pump. Contractor confirmed operational.
Prior to 2025	Moira Lea	Gas monitor failed.	Gas monitor sensor replaced by contractor.
March 30, 2025	Symington	Generator battery was low.	Replaced battery.
March 30, 2025	Cascade	Generator did not start during power failure.	Contractor replaced parts and fuel. Generator restored to full operation.
May 27, 2025	Bridge St W	Pump not working properly.	Removed grease from floats. Contractor replaced pump and capacitors.
July 08, 2025	Millennium	Generator battery failure.	Replaced generator battery.
November 02, 2025	Sherwood	Float not working properly intermittently affecting station operation.	Contractor replaced float.
December 29, 2025	Symington	Air compressor alternating relay failure affecting station operation.	Contractor replaced relay.