GEORGINA

Town of Georgina

2024 CLI-ECA Annual Sanitary Collection System Performance Report

Environmental Compliance Approval (ECA) 119-W601

Review period: January 1st – December 31st, 2024

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Introduction

The Town of Georgina owns and operates the Sanitary Collection System, which collects and transports all sewage from individual establishments – homes, workplaces, schools, buildings, parks etc.– and all other civic establishments to larger sewer pipes which convey waste to York Region Treatment Plant.

The Town of Georgina's Sanitary Collection System is operated under Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) Number 119-W601, dated January 22, 2024. This CLI-ECA is issued by the Ontario Ministry of Environment, Conservation and Parks (MECP).

This system encompasses sewers, gravity mains and force mains, sewage pumping stations (SPS) and other wastewater assets managed by the Town's Water//Wastewater/Waste Division. Additionally, the Asset Management and Capital Delivery Division oversees various contracts related to the Town of Georgina's Sanitary Collection System, including CCTV sewer inspections, condition assessments, Inflow and Infiltration (I&I) evaluation, as well as planning for future development and rehabilitation efforts.

A recent history of collection system ECA approvals is as follows (table 1).

System-Wide ECA Number	Date of Issue	Reason for Issue
5614-5T2LZW	April 24, 2024	Corrected error re: discovery of existing works not previously documented in Schedule B of ECA
119-W601	January 22, 2024	New approval format for Consolidated Linear Infrastructure (CLI)

Table 1 – System-Wide ECA Approvals History

This report has been prepared in compliance with Schedule E, CLI-ECA No.119-W601 and provides results of the operation and maintenance of the Town of Georgina's Sanitary Collection System.

Report Details

The Town provides sanitary collection service to the communities of Keswick and Sutton.. CLI-ECA Schedule E, section 6 requires the Owner of the Authorized Sanitary Collection System to prepare an annual performance report, to be submitted on or before March 31 of each year. This report is to cover the period from January 1 to December 31 of the preceding calendar year.

This report is organized to address the following aspects of the Town's Sanitary Collection System:

1. Operating problems and corrective actions
2. Calibration, maintenance and repairs
3. Complaints
4. Alteration to the Authorized system
5. Collection system overflows and spills of sewage
6. Improvement efforts to the Sanitary Sewage Collection System

System Overview

The Sanitary Collection System is owned and operated by the Town of Georgina and is classified as a Class II Wastewater Collection System. The collection system includes:

- 192 km of gravity sanitary sewer (assumed and unassumed)
- 19 km of forcemains
- 20 sewage pumping stations (SPS)
- 2,562 maintenance holes (MH)
- 3 Odour Control Units
- 14 residential grinder pumps

The Town's Sanitary Collection System is a combination of linear sewer mains and pumping stations that collect wastewater and in turn discharges that wastewater into the Region's transmission mains. This wastewater is eventually transferred to the Region's Wastewater Treatment Plants, where it is treated and discharged into Lake Simcoe. The Town's Wastewater Collection System is designed to collect residential, industrial, commercial, and institutional wastewater.

The Town's wastewater assets can be categorized into two groups, wastewater linear and wastewater facilities. The wastewater linear asset group includes force mains, gravity mains, laterals, maintenance holes and valves, and the wastewater facility asset group includes pump stations

Reference the Town of Georgina Sanitary Collection System map in below (image 1).

Image 1: Sanitary Collection System

1. Operating Problems and Corrective Action

Operating problems at the Town of Georgina Sanitary Pump Stations (SPS) for 2024 are displayed below (table 2).

The most common problems are communication failure between the pumping station and SCADA and utility power failures. However, generators and UPS units are equipped at the pump station as a backup preventative measure.

Sanitary Pump Station	Number of problems	Operating Problem	Corrective Action
Station 601	4	Utility Power Failure, Pump Fault	SCADA check and start, pump and inspect
Station 602	2	Utility Power Failure, Low Temp, Pump Fault	SCADA check and start, check heater and louver vent
Station 606	2	Utility Power Failure	SCADA check and start
Station 607	4	Utility Power Failure, Generator Fault, Pump Fault	SCADA check and start, generator troubleshooting, pump and inspect
Station 608	7	Utility Power Failure, Pump Fault, Hi Alarm, Low Level Lockout	SCADA check and start, pump and inspect, check level and run pump, disable alarm, check floats
Station 611	2	Utility Power Failure	SCADA check and start
Station 612	2	Utility Power Failure	SCADA check and start
Station 613	1	Utility Power Failure	SCADA check and start
Station 617	3	Utility Power Failure, Low Level Lockout	SCADA check and start, check heater and louver vent
Station 618	2	Utility Power Failure	SCADA check and start
Station 619	7	Pump Fault, Low Level Lockout, Utility Power Failure	Pump and inspect, disable alarm, check floats, SCADA check and start
Station 620	11	Utility Power Failure, Pump Fault	SCADA check and start, pump and inspect
Station 621	8	Pump Fault, Utility Power Failure, Illegal Entry, Low Level Lockout	Pump and inspect, SCADA check and start, check doors and reset alarm, disable alarm, check floats
Station 622	4	Pump Fault, Utility Power Failure	Pump and inspect, SCADA check and start
Station 623	5	Utility Power Failure, Generator Fault, Pump Fault	SCADA check and start, generator troubleshooting, pump and inspect
Station 624	3	Utility Power Failure, Low Level Lockout	SCADA check and start, check heater and louver vent
Station 625	2	Utility Power Failure	SCADA check and start
Station 626	3	Utility Power Failure, Pump Fault	SCADA check and start, pump and inspect
Station 628	7	Generator Fault, Pump Fault,	Generator troubleshooting, pump

		Low Temp, High Temp	fault, check heater and louver vent
Station 629	4	Pump Fault, Utility Power Failure	Pump and inspect, SCADA check and start

Table 2: SCADA alarms

2. Calibration, Maintenance and Repairs

All sanitary pumping stations are inspected weekly and monthly by Water/Wastewater Operators. All inspections, maintenance, calibration and repair activities are recorded in a web-based/map-based application software and in logbooks, which are kept at the Water/Wastewater Operations Facility. Water/Wastewater Operators conduct scheduled calibration, maintenance and repair work on the sanitary pumping stations and respond to pump station alarms received by the SCADA system located at the Water/Wastewater Operations Facility.

The Town utilizes a Real-Time Control system via SCADA (Supervisory Control and Data Acquisition) Instrumentation and Control systems at its Sanitary Pumping Stations. Pump operations are managed by remote processing units that connect direct to the Town's SCADA system. Each station is outfitted with a level transmitter, auto dialer, temperature switch and an on-site antenna. Three (3) stations have flow measurement devices (SPS 612, 617 and 626), and all stations are equipped with corresponding WIN 911 alarms.

Upgrading of the SCADA system for the Town's water and sanitary sewer stations are planned for 2025. Upgrading will include hardware and software.

To ensure the effective operation of all sewage pumping stations, regular preventative maintenance is carried out through a combination of in-house efforts and contracted services. In-house tasks include cleaning floats and grates, conducting general inspections onsite, and monitoring via the SCADA system.

Additionally, the Water/Wastewater/Waste Division works closely with the Asset Management and Capital Delivery Division to coordinate essential activities, including CCTV inspections, sewer flushing, condition assessments, and inflow and infiltration studies. The Capital Delivery team further manages the rehabilitation and replacement of sanitary sewer infrastructure.

Contracted services, such as wet well cleaning and instrumentation upkeep, are planned and scheduled annually. Below (table 3) details maintenance, calibration and repair activities.

Pump Station	Maintenance, Calibration and Repair Activities
Station(s): 601, 602, 606, 607, 608, 611, 612, 613, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 628, and 629	Weekly scheduled tests include inspection of pumps, visual panel inspection, test run of pumps, visual inspection of wet well, grounds keeping / snow removal, float testing and cleaning, and grate cleaning. Station(s) 612, 623, and 624 have a Bioxide system for H2S
All stations	Generator testing - Load Test (monthly) Pump maintenance - pull pumps and look fully over (annually) SCADA calibration/Clean up (annually) Fall Arrest/Protection & Lifting Points Inspection (annually)

	Pump Chains Inspection (annually) Electrical Safety Authority Inspection (annually) Wet Well cleaning (bi-annually) Backflow inspections (annually)

Table: 3 – Pump Station Maintenance

Sewer Flushing maintenance

Gravity sewers undergo regular, scheduled maintenance, with sewer flushing carried out on a four-year cycle and tracked electronically. Annually, 25% of the linear infrastructure is flushed. In 2024, a total of 57.148 kilometers of sanitary sewers were flushed, which included 12.556 kilometers of sensitive sewer areas, or “hot spots,” requiring bi-annual flushing. The map below (image 2) illustrates flushed areas.

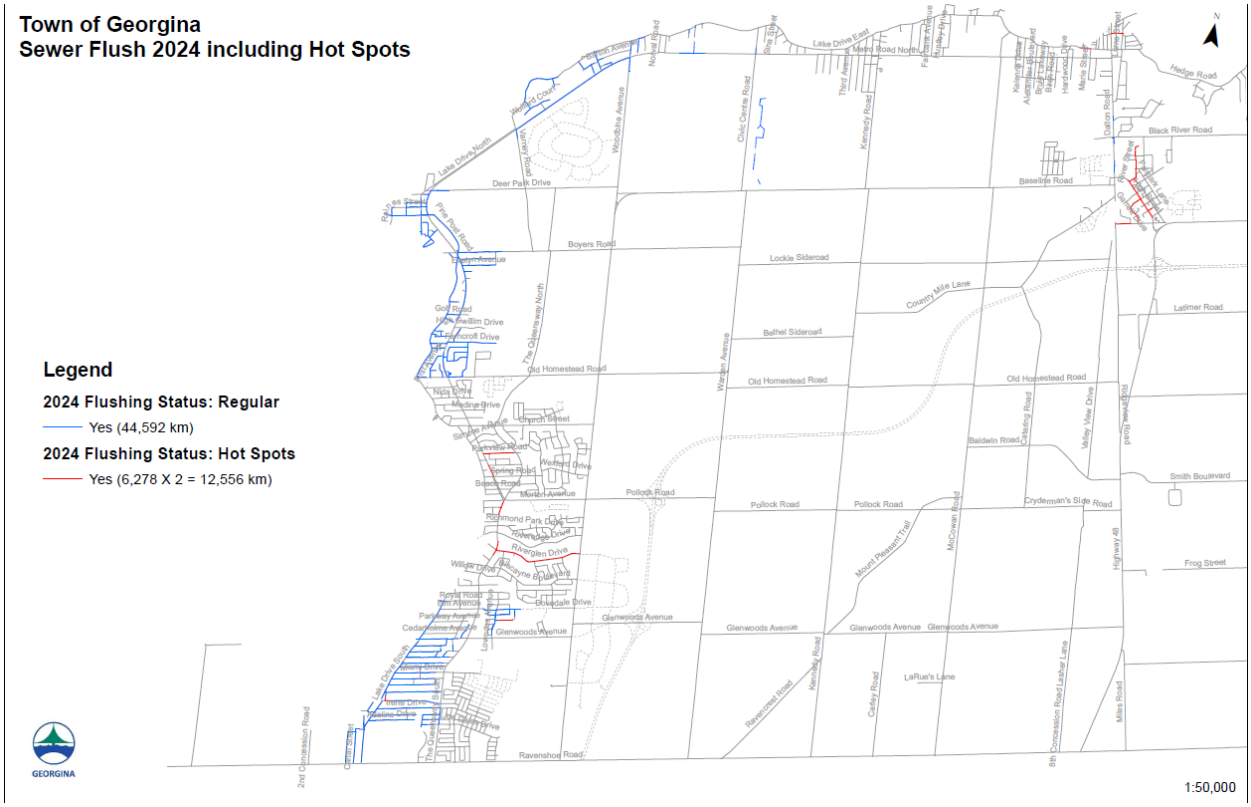

Image 2: Sewer Flushing map 202

Maintenance Hole repairs

In 2024, a total of four (4) maintenance holes were successfully repaired as part of ongoing maintenance efforts. The work carried out on these maintenance holes involved addressing various issues such as replacing damaged, missing or offset covers, which are essential to ensuring the safety and functionality of the system. These repairs were necessary to maintain the integrity of the system, prevent potential hazards, and extend the lifespan of the maintenance holes, ensuring they function optimally for future use.

Inventory

The sewer system inventory consists of a total of 210 kilometers of infrastructure, comprising both gravity sewers and forcemains. Gravity sewers account for 191 kilometers, with the majority being 100–250 mm in diameter (167 km), followed by 300–525 mm (19 km), and 600–900 mm (5 km), with no pipes exceeding 900 mm. Forcemains make up 19 kilometers, primarily in the 38–250 mm range (15 km), with smaller contributions from 300–400 mm (4 km) pipes and none exceeding 400 mm in diameter. Please refer to table 4, Sanitary Sewer System Inventory for specifics.

System Type	Pipe Diameter (mm)	Length (km)	Total Length (km)
Gravity Sewers	100-250	167	191
	300-525	19	
	600-900	5	
	>900	0	
Forcemains	38-250	15	19
	30-400	4	
	>400	0	
		Total Length	**210**

Table 4 – Sanitary System Inventory

3. Inquiries/Complaints

In 2024, a total of thirty-nine (39) complaints and inquiries were received regarding the sanitary sewer system, all of which were investigated, and corrective actions were taken. Among the issues, there were three (3) instances of blockages in the sanitary main caused by fats, oils, and grease (FOG), which were addressed by flushing the main.

Two (2) reports of sinkholes prompted CCTV inspections, revealing no defective infrastructure. Odour complaints were also frequent, with five (5) cases linked to an unknown cause, though no corrective action was needed after inspection.

Six (6) odour complaints following the flushing of the main, which attributed to private plumbing issues; these were resolved by inspecting the house's plumbing and installing rubber plugs in floor drains.

Seven (7) complaints involved clogged pumps due to a buildup of debris and grease, which were cleared by removing the debris.

Lastly, sixteen (16) reports of sewer backups were received, often related to private plumbing or unknown causes, leading to further investigation of upstream and downstream maintenance holes, and consultation of the sanitary lateral policy. Through these investigations and actions, all complaints were appropriately addressed.

The table below illustrates all inquiries and complaints in 2024.

Total number of complaints	Nature of Complaint	Cause	Actions
3	Sanitary main blocked	Fats, Oils, Grease (FOG)	Flush sanitary main
2	Sink hole	Defective infrastructure	CCTV inspection on main
5	Odour	Unknown	Inspected, no corrective action
6	Odour after flushing main	Private plumbing	Inspected lateral in house, put rubber plug in the floor drain
7	Clogged pumps	Buildup of debris and grease	Pull pump and remove debris
16	Sewer backups	Unknown/private	Check upstream/ downstream, maintenance holes, refer to sanitary lateral policy

Table 5: Inquiries/Complaints

4. Alteration to the Authorized System

There were no alterations that posed a significant drinking water threat. Table 6 lists alterations made to the Authorized System in 2024.

Street	From / To	Nature of Alteration
Parallel to Woodbine Avenue	NE corner of Riverglen Dr. and Woodbine Ave / South on east side of Woodbine within the 404 Logistics Park.	New ~ 0.5 km of 150 mm dia. PVC sanitary forcemain.
Woodbine Avenue and Riverglen Drive	404 Logistics Park / Maintenance hole NW corner of Riverglen Dr. and Woodbine Avenue.	New ~ 41.4 meter of 200 mm dia. PVC sanitary sewer.

Table 6: Alterations in 2024.

5. Collection System Overflows and Spills of Sewage

There were no overflows from the sanitation collection system between January 1 and December 31, 2024.

The Water/Wastewater/Waste team collaborated to develop two (2) key Standard Operating Procedures (SOP):

1) Sanitary Sampling for Sewage Pumping Stations, and
2) Responding to Overflows within Wastewater Collection

On July 25, 2025, a total of eighty (80) samples collected from the twenty (20) Sanitary Pumping Station to evaluate contamination levels and establish baseline concentration data for discharges from the collection system. Sampling parameters included the following: Biochemical Oxygen Demand (BOD), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli.

6. Improvement Efforts to the Sanitary Sewage Collection System

The Town of Georgina has undertaken several initiatives to reduce sanitary collection system overflows, spills and assess the system through condition assessment, inflow and infiltration study and flow monitoring programs.

Asset Management Plan and implementation plan

The Town of Georgina has an Asset Management (AM) Plan, for the Town's core municipal assets, including wastewater collection assets, short and long-term wastewater infrastructure improvements, critical infrastructure and maintenance.

Below are some of the key projects delivered in 2024:

- Sanitary pumping station (SPS) condition assessment
- Gravity sanitary sewer and maintenance hole condition assessment
- Inflow and infiltration study
- Flow monitoring

Sanitary Pumping Station (SPS)

In 2024, sanitary pump station(s) 612, 613, 617 and 620 have been conditionally assessed. The work consisted of inspecting and assessing the condition and performance of assets using various methodologies, including visual field inspections, non-destructive testing, and specialized assessments such as pump tests for noise and vibration, designated substance surveys, and arc flash analyses.

These evaluations determine the current state of the infrastructure, enabling the prioritization and forecasting of future maintenance, rehabilitation, and replacement needs. Result findings and recommendations serve as a planning tool and guide for capital expenditure forecasting over short-term (1-5 years), medium-term (6-10 years), and long-term (11-20 years) periods.

Gravity sanitary sewer and maintenance hole condition assessment.

As of 2024, the following inspection activities have been completed under the program:

Activities	Complete
Hydraulic cleaning (flushing) of sanitary sewers	18.50 km
CCTV inspection of sanitary sewer	16.84 km
Maintenance Hole inspections	256

Table 7: Gravity Sanitary Sewer and Maintenance Hole Condition Assessment Inspection Activities

Inflow and Infiltration Study

York Region and its local municipal partners developed a Target Inflow and Infiltration (I&I) framework for local municipalities to reduce I&I within their systems to help achieve the Region's overall goal of 40 Mega Litres per Day (MLD) reduction.

The target I&I reduction for the Town of Georgina was set at 0.27 MLD. The contractor retained by the Town to undertake the Inflow and Infiltration study identified the following.

- Identify quantifiable I&I sources and recommend mitigation and rehabilitation strategies to meet reduction goals.

- Develop a risk-based approach with remediation strategies and costing to proceed with the implementation of physical works to reduce the I&I found within the system.

Actions identified by the study to reduce I&I within the collection system included:

- Recommended repairs to sixteen (16) active infiltration sources in the public collection system to mitigate I/I into the system alongside the identification of seven (7) potential sources to be further assessed during wet weather events.

- Smoke testing and lot inspections revealed potential inflow sources on private property to be released through dye testing, to confirm hydraulic connectivity to the sanitary sewer, followed by rehabilitation of the confirmed I/I sources.

The improvements identified therein would result in an estimated volume reduction of 50.9 m3 (or 0.0509 MLD) during the 1–25 year storm event. The Town has an objective of reducing I/I by 0.27 MLD by 2026. Town initiatives such as the Sewer and Maintenance Hole Condition Assessment program, will further aid the Town in achieving this objective.

I&I analysis results, including priority areas and recommended actions, as well as resources and new tools are shared annually by York Region to the Town staff. Notably, FlowWorks is a tool used by York Region to monitor flows and rain gauges, and to generate notifications for real-time flow data, which the Region relays to the Town.

Flow Monitoring Program

The Town of Georgina is part of York Region's Long-Term Sewer Flow and Rainfall Monitoring Program, which collects data from strategically located flow monitors across the collection system. These monitors provide valuable flow information for Inflow and Infiltration (I&I) analysis, helping to assess the system's performance and identify potential impacts on the Keswick Wastewater Treatment Plant (WWTP) and Sutton Water Resource Recovery Facility (WWRF).

Summary

The Sanitary Collection System and Sanitary Pumping Stations operated by the Town of Georgina's Water/Wastewater/Waste Division are operating well and receive regular routine inspections and maintenance. Necessary repairs are promptly made and any complaints from the public are investigated and resolved. The Town has ongoing efforts to quantify and assess wet weather flows, decrease overflows, spills and bypasses from the collection system.