Town of Newmarket
2024 Annual Wastewater Collection System Performance Report

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Executive Summary

This 2024 Annual Performance Report (the Report) **provides the results of the operation and maintenance of the Newmarket Wastewater Collection System** (the Collection System), Facility # 2256.

This Report attempts to identify and create baseline information to assist the Town with ongoing monitoring, reporting and continual improvement of the system performance.

The Town's sewage is collected and conveyed primarily via gravity to the Duffin Creek Water Pollution Plant, located in the City of Pickering. The Duffin Creek Plant is jointly owned by the Regional Municipalities of York and Durham and is operated by Durham Region.

The Town of Newmarket Wastewater Collection system includes approximately 284.3 kilometres of sanitary sewer and six (6) Sewage Pumping Stations (SPS).

In 2024, the Town complied with all Ministry of the Environment, Conservation and Parks (MECP) regulatory requirements as per the Environmental Compliance Approvals (ECA). This primarily involves monitoring, reporting and record-keeping. In addition, performance indicators were identified, such as, sewer back-ups, spills, overflows, flow monitoring, alarm response and complaints from the public.

In 2024, the Town had two (2) reported sewage blockage(s) in the collection system that resulted in either property damage or a spill into the environment. In addition, the Town responded to 99 blockages in private sewer connections (laterals); and 0 odour complaints.

Introduction

This Report is prepared to satisfy new reporting requirements identified by the Ministry of the Environment, Conservation and Parks (MECP, or the "Ministry") as related to Sewage Collection Systems. In 2020, the Ministry informed municipalities of the new *Area-Wide* Consolidated Linear Infrastructure - Environmental Compliance Approval (CLI-ECA), which will replace all existing ECAs with a single over-arching approval document. The new *Area-Wide* CLI-ECA requires the submission of an annual performance report and more documentation of the operation of collection systems. It also provides benefits and efficiencies to the Town such as pre-authorizations for minor modifications, expansions, and alterations to the system.

Report Overview

The Town provides sanitary collection service to the community of Newmarket, with an approximate serviced population of 87,942. This Report is organized to address the following aspects of the Town's Collection System:

1. An overview of the Collection System performance including compliance with ECA requirements, and identification of operational indicators.
2. A description of the maintenance activities carried out in 2024.
3. An overview of the Town and Region's support programs for the Collection System.
4. A description of the monitoring equipment used and calibration frequencies.

Description of the Collection System

Both York Region and the Town of Newmarket own, operate, and maintain wastewater infrastructure within the municipal boundaries of the Town of Newmarket, In 2020, the Town-Region Water / Wastewater Asset Ownership Agreement was established. This agreement outlines and governs the jurisdiction over the Town of Newmarket and the Regional Municipality of York owned Assets. This agreement is intended to delineate the ownership boundary of Regional Infrastructure in areas of non-exclusive jurisdiction, as defined in *Section 11* of the *Municipal Act, 2001* (i.e., Town owned areas, with region owned infrastructure).

This agreement allows the Region to efficiently manage, operate, maintain, monitor, plan and construct Regional Infrastructure in areas of non-exclusive jurisdiction (i.e., Town owned sanitary collection system, or Town owned water distribution system).

The Newmarket Wastewater Sanitary Collection System, owned and operated by the Town of Newmarket, is classified by the MECP as a Class II Wastewater Collection System. The Collection System serves approximately 87,942 residents. The Collection System includes:

- 281.95 km of Gravity Sewers (Table 1)
- 2.35km of Force mains
- 6 sewage pumping stations (SPS)
- 27,095 lateral connections (households, industrial, commercial, institutional)
- 4573 maintenance holes (MH)
- 1 odour/corrosion control systems

A map of the Collection System is included in Appendix A.

Table 1. Wastewater Collection System by Length

System Type	Pipe Diameter (mm)	Length (km)	Total Length (km)
Gravity Sewers	40 – 250	222.7	**281.95**
	300 – 500	47.55	
	525 – 1,050	11.7	
	≥ 1,200	0	
Force mains	0 – 250	0.81	**2.35**
	300 - 500	1.55	
	≥ 525	0	
Total Length			**284.3**

Performance Overview

The following Key Performance Indicators were selected to provide an overview of the Collection System performance:

- The Town's compliance with the ECA requirements, which includes Contingency Plans and Emergency Response to overflow, by-pass, spill, and surcharge events, and the associated monitoring and reporting.
- Alarm system analyses to monitor the operation of the sewage pumping stations (SPS)
- Regional flow monitoring comparisons to Town flow monitoring to address system upsets associated with the trunk sewers and its connection to the Town of Newmarket sewage collection system.
- Complaints received from the public.

These indicators will be used to establish a baseline to assess the system performance in subsequent years.

Compliance with ECA Requirements

In 2024, the Town complied with all requirements from the existing ECAs. Relevant ECA requirements include:

- Overflow and spill event reports to the Ministry's Spills Action Centre (SAC) and the Medical Officer of Health, as required.
- SPS overflow reports including details of sampling results and corrective actions taken.
- Preparation of the Collection System Operations and Maintenance Manual
- Notification of the Collection System modifications through the provision of Limited Operational Flexibility

The Town of Newmarket received its approved Environmental Compliance Approval for Municipal Sewage Collection System on November 17th, 2022.

Overflow & Spill Monitoring & Reporting

All overflow and spill events are reported to the MECP, verbally and in writing. These reports include event details including estimates of duration and overflow volume. In 2024, there were two (2) sewage backups, one of which also resulted in a spill, which was reported to the MECP, as required. A summary of these events is included in Table 2 below.

Through the towns Sewer Mainline Inspections, staff review CCTV Inspection videos and reports collected to identify critical deficiencies in the system. Acting upon those deficiencies remains a task for subsequent years.

Table 2. Summary of Sewage Back-up & Pumping Station Overflow Events

Date	Location	Event Details
04-09-2024	450 Kent Dr.	Sanitary mainline blockage, spilled into ditch
05-14-2024	16640 Yonge St..	Mainline Backup, 1 home affected

The event that occurred on April 9th, 2024, took place along an easement that runs parallel to 450 Kent Drive. The Town was made aware of the sewage surcharging the manhole and making its way to the nearest ditch line running parallel to the train tracks along the west property line of 450 Kent drive. The Town was provided with an incident reference number (I-5L7GSH) from the Spills Action Center (SAC). The sewage was contained to the ditch using a combination of booms and hay bales and a town contractor was called to provide additional support to clean up the sewage and remove any contaminated soil in the ditch. The cause was determined to be a build up of inorganics and biosolids that had built up over time. Further inspection of the pipe showed it to be intact with no deficiencies.

The event that occurred on May 14th, 2024, was reported to the town through the Customer Service calls center from a unit within the Plaza at the corner of Yonge Street and Sawmill Valley Drive experiencing a back up. Upon further investigation, the

location of the blockage was identified to be within a section of pipe leaving the plaza's private sanitary system and connecting to the Towns collection system. Crews were called in along with a contractor to break up the blockage, flush and inspect the sewer main for any potential damages. A resident's property downstream from the blockage was negatively affected and subsequently experienced a sewer back up with some of the biosolids entering their basement. This event was not called into SAC as no sewage was released into the natural environment.

Operation and Maintenance Manual

Town staff are in the process of documenting existing programs and practices for the operation and maintenance of the Wastewater Collection System. Completion and continual improvement of this Operation and Maintenance Manual (OMM) remains an annual goal. The OMM includes a description of all operational procedures, repair and maintenance programs, equipment inspections and calibration, the town's emergency response procedures/practices, spill reporting and contingency plans, and the Town's protocol for receiving and responding to complaints from the public, and any associated standard operating procedures that are applicable.

Operational Alarms

The Town relies on an independent alarm monitoring company to monitor various alarms at each of our Pumping Stations. A.P.I Alarm Monitoring Inc) performs this task as part of a multi-year contract. Alarms in their monitoring contract include, but not limited to, illegal entry to the building, various pressure and/or flow sensors alarms, backup power/generator sensors, and various wet well level sensor equipment.

Flow Monitoring

The Town of Newmarket works with York Region and relies on their flow monitoring program which is comprised of approximately 28 flow monitors strategically located throughout the collection system within the Newmarket municipality boundaries. These flow monitors are meant to provide flow information for Inflow and Infiltration (I/I) analysis of the system and potential effects to the Regional Wastewater Treatment Facilities. These monitors serve as tools to calibrate the Region hydraulic model and assist in identifying I/I issues.

The Regional flow monitors trigger alarms, which the Region relays to the town. These alarms are only informational and not for operating purposes. This information is used to assess systemic I/I issues on parts of the system and to mitigate and reduce risks of potential overflows before they occur.

Summary of Customer Concerns / Call Tracking

Calls are received from the public and are tracked in the Town's Customer Relation Management (CRM) system. Once a call or concern is received, a CRM Ticket is created and forwarded to staff to investigate and remediate the situation. All work completed as

part of this CRM system is tracked through the tickets and are recorded under various subtypes and/or activities for analysis and reporting. In 2024, there were approximately 118 calls received by the public associated with the Wastewater Collection System, which included: 2 sewer back-ups on public sewer mains, 75 blockages within residential service laterals; and 12 maintenance hole issues (Table 3). All complaints are investigated, and persistent issues are addressed through additional investigation, flushing, repairs of infrastructure, or operational adjustments.

Table 3. Complaints Received in 2024 by Type

Type of Complaint	Complaint Description	No. of Complaints
Mainline Sewer Backup	Sewer backups due to obstructions in mainline sewers	2
Lateral Sewer Backup	Sewer backups due to obstructions in sewer laterals	75
Sanitary Odour	Sanitary odours experienced indoors and outside	0
Maintenance Hole Issues	Maintenance hole issues such as dislodged or broken covers	6
	Total	39

The most common complaints that the Town receives related to the Wastewater Collection System are:

a) lateral sewer backups; and
b) maintenance hole issues

Inflow and Infiltration

In 2012, the Region and all nine lower-tier municipalities approved and adopted the Inflow and Infiltration (I/I) Mitigation and Reduction Strategy (I/I Strategy). Through the I/I Strategy many operational and maintenance programs will be adjusted to address specific I/I areas.

The Strategy involves a holistic approach to reducing extraneous flows into the sanitary sewer system that considers improved engineering standards for construction and testing of new systems, flow monitoring, modelling micro-watershed surveys, downspout disconnection, smoke/dye testing, CCTV inspections, and collection system repairs.

Maintenance Programs

Linear Infrastructure

The Town has ~281.95 km of gravity sewers and ~2.35 km of force mains. Maintenance of the linear infrastructure involves performing CCTV inspections, flushing, and cleaning the sewers, and spot repairs. A summary of the maintenance activities completed are provided in Table 4 below.

Table 4. Linear Maintenance Performed in 2024

Description	Quantity
Length of Sewer Inspected Using CCTV	48.99 km
Length of Sewer Flushed (Contracted)	6.42 km
Length of Sewer Flushed (internal)	1.9 km
Sanitary Laterals inspected (contracted)	87 ea.
Sanitary Laterals inspected (internal)	12 ea.
Length of Sewer Inspected Using Acoustic Monitoring (SLRat)	42.8km

Length of Sewer Inspected Using CCTV

The Town of Newmarket inspected a total of 48.99 km's of sewer main. This work was comprised of operational and capital projects throughout the Town in 2024.

Length of Sewer Flushed

The Town of Newmarket flushed a total of 8.32 km's of sewer main between internal operations (1.9) and contracted services (6.42).

Sanitary Laterals Inspected

The Town of Newmarket inspected a total of 99 sewer laterals in 2024. These were completed using internal staff and contracted services.

Length of Sewer Inspected Using Acoustic Monitoring (SL RAT)

In 2024, a total of 42.8km of sewer main was analyzed using radio acoustic telemetry with the SL RAT. Additionally, Town staff inspected 763 maintenance holes in conjunction with the SL RAT program.

Points of Interest (POI) Inspection Program

To mitigate issues at sewer locations that had previous issues or deficiencies, the town will, for a duration, regularly conduct a visual inspection to ensure any corrective actions that have been made remain effective. The Town has identified these locations as a "Point of Interest" inspection program. POI's are regularly inspected and periodically cleaned using high pressure flushing and eventually removed from the list. In 2024, a POI list was

maintained. Inspections and/or maintenance activities are documented and the list is reviewed and updated on a regular basis.

Sewage Pumping Stations and Facilities

The Collection System also includes: 6 Sewage Pumping Stations (SPS); 1 Odour control systems; (refer to Appendix B below for a list of station locations and odor control system)

The Town has the following maintenance programs:

1) **Preventative Maintenance** – conducted on a routine basis to maintain the equipment in good working order and lessen the likelihood of failure.
2) **Corrective Maintenance** – conducted to correct deficiencies discovered during routine inspections or preventative maintenance activities and return to working order state.
3) **Emergency Maintenance** – conducted in response to the Alarm system - high priority alarms, or through observed emergencies within the System.

The general maintenance performed at facilities includes weekly inspections, wet well cleaning, mechanical inspection, and electrical inspections. A description of inspection and preventative maintenance activities is provided in Appendix D.

Equipment Calibration

Flow meters, level sensors and pressure sensors are used within our pumping stations to assist in monitoring various processes and functions. To ensure proper functioning of the monitoring equipment, the equipment is calibrated on a regular basis by a certified third-party contractor. The number of flow meters, level sensors and pressure sensors used in the Collection System, along with their calibration frequency, is provided in Table 5 below.

Table 5. Equipment Calibration Frequency

Type of Equipment	Location	Count	Calibration Frequency
Flow Meters	- Bayview P.S. (1) - Woodland Hills P.S. (1)	2	Annual
Ultrasonic Sensor	- Northwest (2) - Woodmount (1) - Bayview (1)	4	Annual
Hydrostatic Sensor	- Bayview (1) - Woodland Hills P.S. (2)	3	Annual

Appendix A – Newmarket Wastewater Collection System Map

CLI-ECA_Newmarket_
Sanitary_Mar2025.pdf

Appendix B – List of Pumping Stations and Facilities Pumping Stations

#	SPS Name	Location
1	Bayview pumping station	16300 Bayview Avenue
2	St. Andrews pumping station	409 Sydor court
3	Woodmount pumping station	Fronting 249 Woodmount Place
4	Seniors center pumping station	474 Davis drive
5	Northwest pumping station	286 Woodspring Avenue
6	Woodland Hills pumping station	250 Frederick Curran Lane

Appendix C - Odour Control System Locations

#	Odour Control System	SPS Name	Location
1	Bioteg vent pipe Biofilter	Woodland Hills (#6)	250 Frederick Curran Lane

Appendix D – Description of Facilities Inspections & Preventative Maintenance Activities

Activity	Description	Frequency
Standby Generator Test	Completed monthly and quarterly by staff and contractor to ensure generator operability in case of power failure. Deficiencies are documented on work order, station logbook and generator form for follow up.	Monthly (Town) Quarterly/Semi/annual (contractor)
Standby Generator Load Test	The full load test is completed annually through contracted services. The generator is tested under full load of the facility for a longer period to ensure the generator can perform properly during a loss of power event.	Annual (contractor)
Wet Well Cleaning	Completed in spring and fall. Wet Well is pumped down and pressure washed to remove debris, grease and build-up.	Semi-annual (contractor)
Odour Control Units - Inspection	Units are inspected and filters are changed as needed.	Monthly inspection/ changed as required (Town)
Building Maintenance and Cleaning	Activity includes standard custodial maintenance, restocking of supplies and visual inspection of structure and property	Monthly (Town)
SPS Inflow Screen Maintenance	Check for debris and clean out as needed. Bayview pumping station screens cleaned twice a week, Northwest once a week	Weekly (Town)
Facility Valve Inspection	Visual inspection and exercising of the valves, recorded on a Maintenance Activity Worksheet	Monthly (Town)
Facility QA/QC Inspections	A walkthrough of all sewage pumping stations. Supports the daily Inspection program to ensure that the facilities are being well kept and clean. Findings are reported back in a station logbook and they are tracked and addressed.	Daily/Weekly/ Monthly (Town)
Facility Backflow Preventor Inspections	Annual Inspection. Tested and inspected and a Maintenance Activity Worksheet is completed to record findings	Annually (Town Plumber)
Overflow Inspections	Overflow inspections are completed monthly at all applicable overflows associated with the sewage pumping stations. The visual inspection is completed. Any deficiencies are reported, and corrective action is taken to mitigate the overflows capabilities.	Monthly (Town)