Peel Region

2024

Wastewater Collection System annual report

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Wastewater Collection System annual report

The Regional Municipality of Peel (Peel) is committed to providing a high level of service in the collection, treatment, and management of wastewater. Peel diligently monitors its sewer network and operates its treatment processes effectively to meet or surpass discharge quality criteria, to protect the environment now and into the future.

Our commitment

- Protecting and preserving the environment, including the prevention of pollution, through effective operation and management of the Wastewater Systems that incorporates quality assurance and control practices
- Acting promptly and responsibly in addressing incidents or conditions that pose a risk to the public or environment
- Collaborating with internal and external stakeholders to ensure our services consider their environmental and quality concerns

If you have any questions about this report, please contact the Wastewater Compliance team at 905-791-7800 extension 4685 or email at publicworkscustserv@peelregion.ca.

Executive summary

The Wastewater Collection System (collection system) collects wastewater from the customers in the cities of Mississauga, Brampton, and parts of Town of Caledon. The collection system is comprised of two systems: South Peel Wastewater Collection system, a class 3 wastewater collection system, and the Inglewood Wastewater Collection system, a class 1 wastewater collection system under Ontario Regulation 129/04. The system is owned and operated by Peel Region and was operated under Environmental Compliance Approval (Approval) number 009-W601.

This report summarizes the monitoring results for the collection system required by the Approval and describes the operational performance.

Peel received **946** complaints and requests for information associated with the collection system, of which **2** were associated with odour issues and **1** with noise. Most complaints (885) were related to maintenance holes, including loose or damaged covers. Peel staff have investigated and satisfactorily addressed the reported concerns, as described in section 4.3.9.

There were **18 spill events**, within the collection system during the reporting period, including **13** overflows related to an extreme weather event in July, as described in section 4.4.

2024 Summary

Peel Region

Brampton, Caledon, and Mississauga

1.55 million residents

175,000 businesses

provided with water and wastewater services

Wastewater Collection System

3,779km

of **sewage pipes** throughout Peel's collection system

244

billion litres of wastewater treated

Equal to volume of

268

Olympic swimming size pools per day

$16.1 million

Infrastructure expenditure

32

Wastewater pumping stations

Collect and move wastewater throughout the system

112

Licensed operators

maintain and operate the collection system

2

Septage Receiving Stations

Directing the waste into the main treatment process for further purification

Glossary of terms and abbreviations

Chemical scrubber: A pollution control device that injects chemicals to remove unwanted pollutants from gas.

Ferrous chloride: A chemical compound added to wastewater to control odours.

Forcemain: A pipe that conveys wastewater under pressure out of a sewage pumping station.

Inflow and Infiltration (I&I): Inflow is the water that enters the sewer system through improper connection such as foundation drains, downspouts, manhole covers, etc. Infiltration is the water that enters sewer system through defective (leaky) pipes, joints, connections, or manholes.

m3: cubic metres. 1 m^3 = 1000 litres.

ML: megalitres. 1 ML = 1000 m^3.

MLD: megalitres per day. 1 ML = 1 million litres.

Lateral sewer: A smaller sewer that collects wastewater directly from homes and buildings and conveys it to a larger connector sewer.

Mainline sewer: A pipe that collects wastewater from smaller laterals and conveys it to a larger trunk sewer.

Maintenance hole (MH): A structure that provides access to a sewer system for inspection, cleaning, maintenance, sampling, or flow monitoring.

Overflow: A controlled discharge of wastewater to the environment from a location designed for this purpose.

pH: Measure of alkalinity or acidity in water.

Spill: An unplanned discharge of wastewater to the environment from any location that is not specifically designed for this purpose.

Total ammonia nitrogen (TAN): A measure if the amount of ammonia in wastewater.

Total phosphorous (TP): An essential nutrient used by microorganisms for growth.

Total suspended solids (TSS): Suspended particles (organic and inorganic material) present in the water sample.

Trunk sewer: A large sewer that collects wastewater from mainline sewers and conveys it to a pumping station or directly to the wastewater treatment plant.

Wastewater: Water that has been used and discharged by homes, businesses, and industries. Everything we flush down a toilet or pour down a drain, collectively.

WRRF: Water resource recovery facility.

WWTP: Wastewater treatment plant.

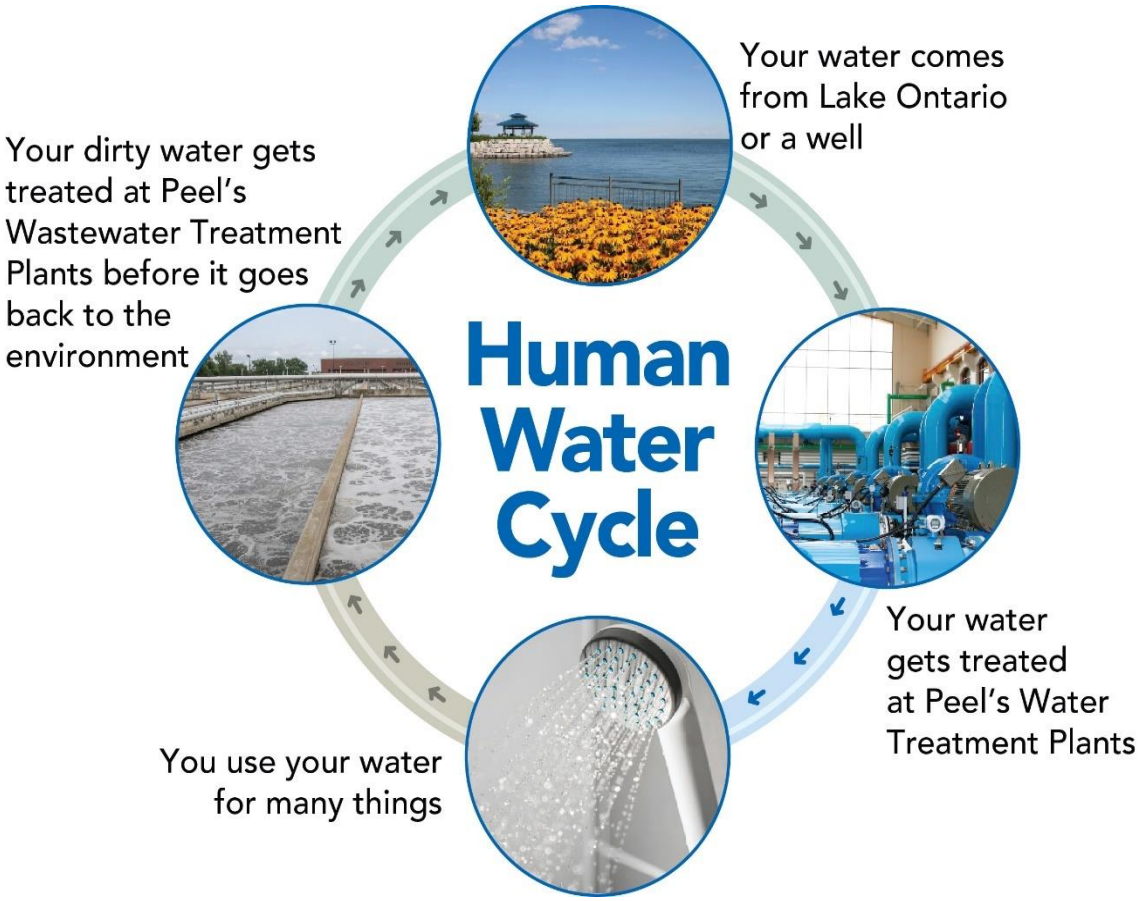
1. Water management in Peel Region

Peel owns and operates the water and wastewater systems that serve its population. This includes water treatment, storage and distribution, and wastewater collection, pumping and treatment.

Peel has two drinking water sources: Lake Ontario and groundwater wells in Caledon. Peel retains services of the Ontario Clean Water Agency (OCWA) under a contract to operate, maintain and manage the lake-based drinking water treatment facilities and its water storage and pumping system. Peel operates the groundwater-based water treatment systems and distribution watermain networks. Similarly, on the wastewater side, OCWA is contracted to operate the large wastewater treatment plants on the shore of Lake Ontario, while Peel Region operates the wastewater collection system, pumping stations, and the treatment facility in the community of Inglewood, in the Town of Caledon.

This water cycle, shown in Figure 1, starts when source water is pumped into our water treatment plants and undergoes treatment to meet the Ontario Drinking Water Quality Standards. Treated drinking water is distributed through a network of pipes, storage facilities and pumping stations to homes and businesses. Used water goes down the drains into the wastewater collection system, where a series of pipes collect and convey wastewater to the treatment plants. Although a predominantly gravity-based network, pumping stations are needed to move wastewater from low lying areas. Wastewater undergoes multi-stage treatment to comply with the strict provincial and federal standards before release to the environment. Peel is committed to high standards of treated wastewater quality since it gets discharged into Lake Ontario, which is the source of drinking water for Peel and many neighbouring municipalities.

Figure 1. Water and Wastewater Cycle



For more information, refer to the annual wastewater reports for our other wastewater systems and our annual water quality reports to learn about water treatment and distribution.

2. Introduction

Wastewater systems in Ontario are governed by the Ministry of the Environment, Conservation and Parks (Ministry) and are also subject to federal legislation.

The wastewater collection system receives wastewater from residences and businesses that are connected to the municipal sewer pipe network and conveys it to the wastewater treatment plant where it is treated to reduce contaminants, nutrients, and pathogens before it is released to the environment. The Environmental Compliance Approval (Approval), issued under the Environmental Protection Act, is a facility-specific document through which the Ministry sets discharge quality limits for that facility based on the sensitivity of the receiving waters. To comply with the Approval, Peel Region prepares an annual report covering the operation and overall performance of the wastewater system.

This report provides a performance summary for the period from January 1 to December 31, 2024, for the Wastewater Collection Systems, to fulfill the annual performance reporting requirements set out in the Approval number 009-W601.

The collection system is comprised of two separate collection systems: South Peel Wastewater Collection system, a class 3 wastewater collection system, and the Inglewood Wastewater Collection system, a class 1 wastewater collection system under Ontario Regulation 129/04, and serves over 1.55 million customers across Mississauga, Brampton, and parts of the Caledon. It is owned and operated by Peel Region. This system collects municipal wastewater from residences and businesses, as well as landfill leachate from the Chinguacousy Landfill and former Britannia Landfill and conveys it to the Peel's three wastewater treatment plants -- G. E. Booth Water Resource Recovery Facility (WRRF), Clarkson WRRF or Inglewood (WWTP). Peel also receives wastewater from the City of Toronto and York Region through inter-municipal servicing agreements.

All of Peel's wastewater collection system assets are captured within a single Approval. The portion of the collection system that serves the community of Inglewood (in Caledon) directs Inglewood's communal wastewater to the Inglewood WWTP and the portion of the collection system that serves Mississauga, Brampton, and the east side of Caledon is connected to the Peel's larger South Peel collection system that directs wastewater south to the G. E. Booth and Clarkson WRRFs on the shore of Lake Ontario. Refer to Figure 2 for a map of the Peel's wastewater collection system.

2.1 Compliance

The Approval is a system or facility-specific document and is the legal instrument that sets requirements for municipal system owners and operating agencies with regards to operation and management, level of treatment, monitoring and recording, routine and event reporting, and effluent quality notification. In accordance with the Approval, major changes to treatment process or equipment are communicated to the Ministry.

The Ministry performs periodic inspections on all wastewater systems, comprised of facility visits and review of information and data for the inspection period. Inspection scope generally covers procedural documentation review, staff competency, process operation and monitoring, and corrective actions to operational events. Peel is committed to ensuring environmental protection and compliance with legislative requirements. We maintain transparency by reporting all findings of potential non-compliance incidents and outcomes of internal assessment to the Ministry local district office. For more information refer to section 5.1.

3. Collection system overview

The collection system consists of a series of underground pipes that collect wastewater from residences and businesses throughout Peel Region and depending on location, convey the wastewater to one of three treatment facilities, i.e., G.E. Booth and Clarkson WRRF located in the City of Mississauga, on the shore of Lake Ontario, or Inglewood WWTP in the Town of Caledon. Figure 2 shows a map of Peel's wastewater collection.

Table 1. South Peel Wastewater Collection System sanitary sewers

Pipe diameter (millimetres)	Length (kilometres)
1 to 300	2,900
301 to 500	300
501 to 950	300
951 to 1,650	170
Greater than 1,650	50

Table 2. South Peel Wastewater Collection System forcemains

Pipe diameter (millimetres)	Length (kilometres)
1 to 300	25
301 to 500	10
501 to 950	20

Table 3. Inglewood Wastewater Collection System sanitary sewers and forcemains

System type	Pipe diameter (millimetres)	Length (kilometres)
Sanitary sewers	1 to 300	4
Forcemains	1 to 300	0.4

Sewage Pumping Stations (SPS) and facilities, listed in Appendix A - Facilities, are equipped with stand-by power generators to ensure critical equipment can continue to operate in the event of a power failure.

The collection system is comprised of two separate systems:

1. The South Peel Wastewater Collection System conveys sewage to G.E. Booth and Clarkson WRRFs for treatment prior to its final discharge to Lake Ontario. The South Peel Wastewater Collection System consists of:

    - 32 sewage pumping stations

- One odour/corrosion control facility
- Two septage receiving stations

2. The Inglewood Wastewater Collection System conveys sewage from the community of Inglewood to the Inglewood WWTP for treatment prior to its final discharge to the Credit River. The Inglewood Wastewater Collection System consists of:

    - 4 km of sewers and forcemains
    - 1 sewage pumping station (see Appendix A - Facilities.)

The South Peel Wastewater Collection System is further divided into East and West trunk sewer systems.

- The East trunk sewer system conveys sewage to the G.E. Booth WFFR for treatment prior to its final discharge to Lake Ontario. The East trunk sewer system services the east side of Mississauga, Brampton, and parts of Caledon, including Bolton.

- The West trunk sewer system conveys sewage to the Clarkson WRRF, discharging its treated effluent to Lake Ontario. The West trunk sewer system services the west side of Mississauga, Brampton, and southern parts of Caledon.

The South Peel Wastewater Collection System also receives wastewater from the City of Toronto and York Region through inter-municipal servicing agreements, as described below:

- York-Peel Servicing Agreement: Wastewater from York Region is pumped from the Humber SPS to Peel Region's collection system through 14 km twin 900-millimetre forcemains at Highway 427 and Steeles Avenue East. The forcemains discharge to Peel's gravity sewer network, which ultimately flows to the G.E. Booth WRRF. As wastewater from York is received in Peel, it passes through the York-Peel Odour Control Facility (see description below). Peel receives an annual average of 13,530,000 m^3 of wastewater from York Region.

- Toronto-Peel Servicing Agreement: There are currently three locations where wastewater flows across the municipal boundary from the City of Toronto to Peel's wastewater collection system. Peel receives an annual average of 10,040,000 m^3 of wastewater from Toronto.

Volumes from York Region and Toronto account for approximately 10% of flows in Peel.

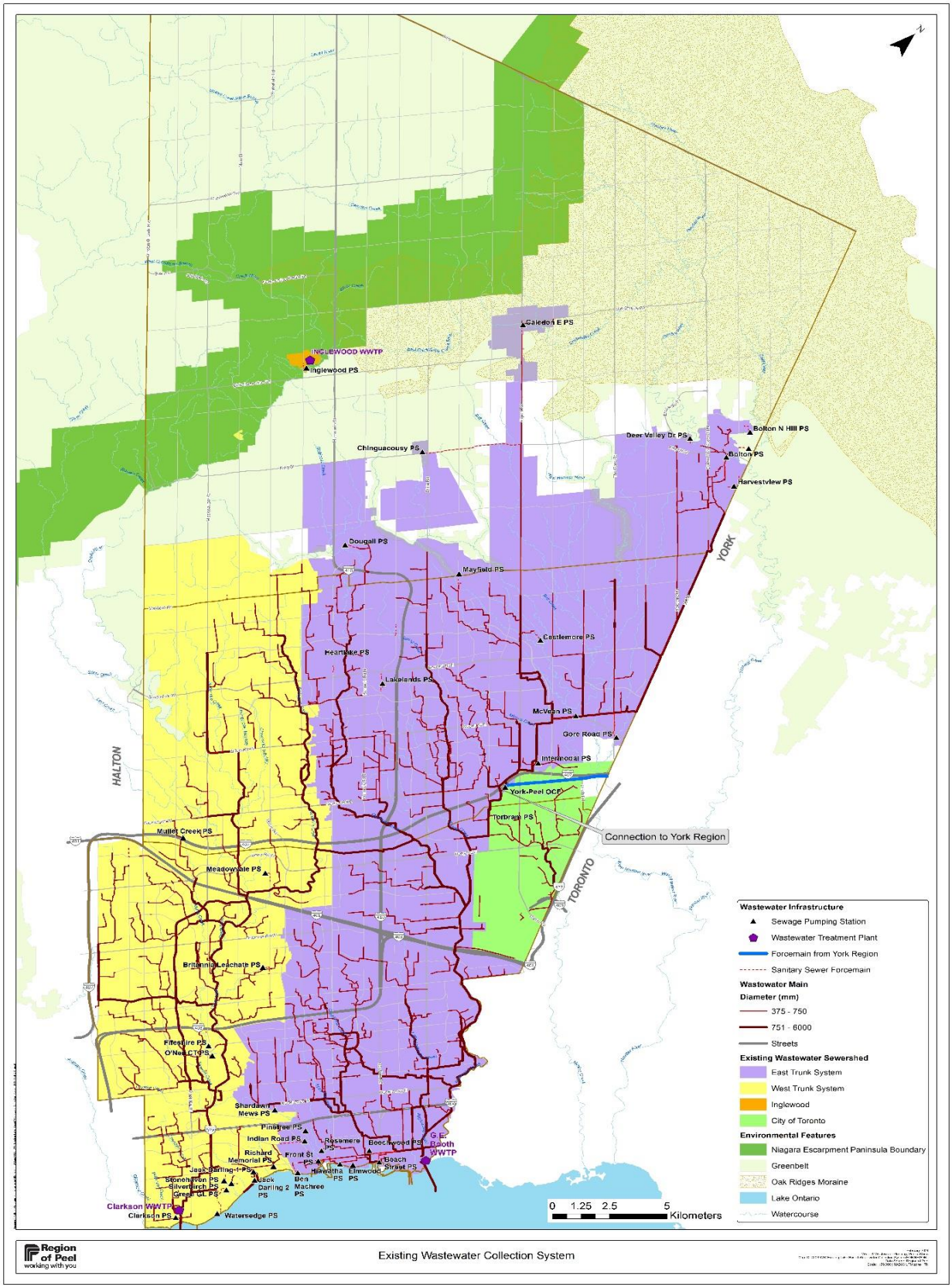
York-Peel Odour Control Facility

The York-Peel Odour Control Facility, located at Steeles Avenue (between Airport Road and Torbram Road) in the City of Brampton, treats odours caused by hydrogen sulphide generated in wastewater along the journey through the forcemains from York Region. There are two odour control technologies used at this facility:

- A counter current packed bed tower wet chemical scrubber is used to remove particles and chemicals from the air. Sodium hydroxide and sodium hypochlorite solutions are sprayed within the scrubber to help eliminate odours.
- An injection system adds a small amount of ferrous chloride into the wastewater stream downstream of the scrubber for hydrogen sulfide control to reduce odours and pipe corrosion as the wastewater continues its journey through the sewer system.

Sampling is performed at this facility to understand the composition of the wastewater coming from York Region. The samples are sent to an accredited laboratory for analysis.

Figure 2 Wastewater Collection System map



4. Operational performance

4.1 Summary and interpretation of monitoring data

4.1.1 Flow monitoring

Flows are measured for all pumping stations using flow or level monitors. In addition, over 400 flow monitors are placed in the sewer system to study high risk areas, inform programs such as the downspout disconnection program to reduce storm water getting into the sanitary sewer, improve the accuracy of the hydraulic model, predict population growth needs, and identify opportunities to improve the resilience of the sanitary sewage system. Flow monitors are also placed in some of the engineered overflow connections to storm water, which serve as a flow relief during high flow events to prevent the system from backing up into residents' homes. Overflows from the sewer system or the pumping stations are reported to the Ministry. More information on overflows is provided in section 4.4.

4.2 Operating problems encountered and corrective actions taken

4.2.1 Extreme Flow Events

On July 16, 2024, Peel experienced one of the most intense and disruptive severe weather events in its history followed by another significant storm on August 17. Heavy rainfall contributed to riverine flooding, urban flooding, and basement flooding causing widespread damage to businesses, homes, vehicles, parks, and recreational trails. The July event overwhelmed several sewage pumping stations and caused delays in reporting the overflows to the Ministry. Additional information is provided in section 4.4.

4.2.2 Inflow and Infiltration (I&I)

The Inflow and Infiltration (I/I) Remediation Strategy divided the Region into 40 distinct sewer sheds, also known as Blocks. The Blocks are prioritized based on their likelihood of sewage overflow into the environment, sanitary sewage back up into basements, and capacity constraints for future development. The three Blocks with the highest priority were targeted in the first round of work between 2019 and 2022. The second round of work is underway with the next set of Blocks. The work consists of investigative activities, studies, and development of

remedial measures. These remedial measures include downspout disconnection, removing cross connections, sealing maintenance holes, and sewer lining, as well as construction of storage tanks and larger pipes to hold more flow. Remedial measures with the highest return-on-investment are implemented first. Also, to prevent I/I issues down the road, the Region is continuously updating its design and construction guidelines to improve new infrastructure.

4.3 Summary of maintenance activities and expenditures

4.3.1 Maintenance of linear infrastructure

Maintenance of the linear infrastructure involves performing inspections, sewer cleaning, and repairs.

Inspections are conducted on both sewers and maintenance holes. The sewers are inspected using closed circuit television (CCTV) units. When a structural issue is identified in the sewer main, sewer lateral or maintenance hole, it is triaged and repaired according to the level of risk and priority. A summary of the maintenance and inspection activities completed is provided in Table 4.

Table 4. Linear maintenance performed

Description	Quantity
Length of sewer inspected using CCTV	395 km
Length of sewer flushed	961 km
Laterals repaired	71
Laterals replaced	7
Maintenance holes inspected	11,044
Maintenance holes repaired	1,079
Sewer main relining	6 km
Sewer main replacement or new connection	1 km

4.3.2 Collection system facilities

The wastewater collection system facilities under Approval number 009-W601 include:

- 32 sewage pumping stations
- York-Peel Odour Control Facility
- Two septage receiving stations

Peel Region has the following maintenance programs for these facilities:

1. Preventive maintenance is conducted on a routine basis to maintain the equipment in good working order and lessen the likelihood of failure,
2. Corrective maintenance is conducted to correct deficiencies discovered during routine inspections or preventive maintenance activities and return equipment to working order,
3. Unplanned (emergency) maintenance is conducted in response to equipment failure.

4.3.3 Trouble spot maintenance program

One potential cause of sanitary sewer overflow or odour issues is sewer backup. A sewer backup occurs when the sewer becomes fully or partially blocked by an obstruction. To mitigate issues at locations that regularly become obstructed, Peel has a trouble spot maintenance program. Trouble spots are cleaned using high pressure water spray or mechanical reaming (rotational cutting) on a set schedule to prevent blockages. In the reporting year, 20 blockages were cleared. Mainline sewer pipes that are cleaned as a part of the regular preventive maintenance program are addressed in a prioritized manner. Pipe age and type, and discovery of defects in the sewer pipe are some of the criteria used to determine priority.

4.3.4 Sanitary sewer pipe replacement program (State of Good Repair)

Peel's overall infrastructure is aging, requiring more investment in preventive and planned maintenance. In response, Peel has established a comprehensive asset management program, which includes sanitary sewer pipe assessment and renewal. The program includes ongoing upgrades of the Peel's sanitary sewer system to ensure long-term integrity and sustainability. The program involves repair or replacement of existing mains and sanitary services to improve flow, minimize potential for spills and overflows to the environment, minimize the risk of backups into homes, and upsize if required to meet future planning needs; all to provide an acceptable level of service to our customers.

Peel determines priority of sanitary sewer pipe replacement and rehabilitation based on the following factors:

- Condition
- Pipe age
- Pipe size and material type

- Pipe breaks and leak history
- Hydraulic performance of the pipe
- Planned municipal and city projects related to water, wastewater and road assets
- Cost of replacement
- Operational demands

Most sanitary sewer pipe replacement projects are undertaken in partnership and coordination with road re-construction and watermain renewal projects for improved cost effectiveness and to minimize public inconvenience. Using these criteria, Peel plans the sanitary sewer pipe renewal program in a financially responsible manner. For more information about this program, please see the 2024 Enterprise Asset Management Plan.

4.3.5 Sanitary trunk sewer conditions assessment and rehabilitation

Peel's strategy for offsetting wastewater flows from the east side of Mississauga and Brampton includes several major collection system initiatives, with an overall 10-year capital budget of approximately $420 million. Twinning of the East Brampton and West sanitary trunk sewer is now complete and operational and will provide additional capacity and allow for condition assessment and rehabilitation of the existing trunk sewer to extend its useful life. Peel recently completed a condition assessment of the existing East Brampton sanitary trunk sewer, retained and is in the process of retaining an engineering consultant to support detailed design and construction of planned rehabilitation work and is currently approaching the 90% design stage of a multi-contract rehabilitation plan.

Several significant wastewater condition assessment and rehabilitation initiatives were initiated or continued in 2024, including condition assessments of portions of the West trunk sewer, portions of the East Brampton trunk sewer, the Sawmill Creek and Levi Creek trunk sewers, the Upper Cooksville Brampton-Bolton trunk sewer, and the Erin Mills Spring Creek trunk sewer to name a few. The Maintenance Hole Rehabilitation Program also continued with a new program to protect maintenance holes within floodplains at risk of erosion.

The goal of these projects is to assess and rehabilitate sanitary infrastructure to meet target levels of service, which in turn improves system resiliency and longevity, and reduces site specific infiltration, such as leaking pipe joints. The East trunk sewer and energy dissipation chamber rehabilitation achieved

substantial performance in December 2024 and final commissioning will be completed in 2025. This project was also awarded combined federal and provincial funding.

4.3.6 Quality assurance and quality control (QA and QC)

Peel operates a QA/QC program for maintenance holes (MH) condition assessment. Approximately 3% of all MH condition assessments are randomly selected to be re-inspected to assess accuracy of the information collected. Peel performs a similar QA/QC program for the sewer main flushing program, with CCTV inspection conducted on 1% of sewer mains flushed.

4.3.7 Expenditure information

Staff determine capital spending priorities to eliminate unnecessary expenditures while maintaining infrastructure. Table 5 summarizes the major expenditures in 2024.

Table 5. Significant expense for the South Peel wastewater collection system

Activity type	Description of work	Expenditure
Repair	Maintenance hole rehabilitation	$556,000
Repair	Sanitary sewer relining	$1,737,000[1]
Replacement or installation	Sanitary sewer replacement and new construction	$13,013,000[1]
Inspection	Trunk sewer inspection	$747,000
Inspection	Maintenance hole inspection	$187,000

4.3.8 Summary of verification and maintenance equipment

Verification and maintenance are performed annually, according to manufacturer's recommendations, on flow monitoring equipment. The monitoring equipment was satisfactorily verified by a third-party agency in 2024 in all sewage pumping stations.

4.3.9 Summary of complaints

The Approval requires that Peel log all resident complaints, investigate, and resolve them. Peel makes every effort to respond to customers and satisfactorily address their concerns and enquiries. A database is used to record details including information collected from the customer on the nature of the enquiry and action taken by Peel. There were 946 complaints recorded in 2024 related to the operation of the wastewater collection system, with the vast majority of

[1] Amount accounts only for projects fully completed in 2024.

reports being related to condition of maintenance hole covers. A breakdown of public complaints received can be found in Table 6.

Peel Region takes proactive action to reduce odours throughout the collection system through the odour control program. Areas that regularly experience collection system odours are investigated, and odour control dishes are placed in the maintenance holes to help stop odourous gases from escaping into the environment.

Table 6. Summary of complaints received for the collection system

Type of complaint	Description	Number of complaints	Corrective actions taken
Mainline sewer back-up	Sewage back-ups due to obstructions in mainline sewers	3	Operator was sent out to confirm the location and state of the sewer. Flusher trucks were used to release the backup and flush.
Sewer lateral back-up	Sewage back-ups due to obstructions in sewer laterals	55	Operator was sent out to confirm and locate the appropriate service point in the home. Sewer trucks were used for mechanical rodding to release the backup.
Sanitary odour	Sewage-like odours associated with the wastewater collection system	2	Operators were dispatched to check the locations. Assets associated with the collection system were checked and work was done to resolve the odour, as needed.
Noise	Noise from SPS	1	Operators were dispatched to check the site. Noisy grinder was repaired.
Maintenance hole issues	Maintenance hole issues such as dislodged or broken covers	885	Operators were dispatched to assess the damage. Depending on the requirements, the repairs were performed, ranging from fixing a lid to an extensive repair with a multi-person crew.

4.4 Summary of sewage pumping station overflows, spills or abnormal discharge events

Occasional weather events such as heavy rainfall and spring snow melt can result in flow rates that burden the collection system and may be higher than those for which the plant was designed. These challenges, as well as the need for planned maintenance and construction activities, may result in a planned or unplanned discharge to the environment.

An overflow is a spill of wastewater to the environment from a designed location within the collection system. An overflow occurs when rainwater, groundwater intrusion and/or emergency situations result in additional flows entering sanitary sewers that overwhelm the system. Overflows from the sewage pumping stations, while not desirable, are sometimes necessary to help prevent basement and surface flooding and to protect the downstream treatment plants.

When possible, samples are collected and tested to characterize wastewater discharge. Parameters tested for overflow events include BOD_5, TSS, TP, TKN, and *E. coli*.

A spill is an unplanned discharge of wastewater to the environment. There were 18 spills including overflows in 2024. Of those, 13 happened during the July 16 extreme weather event described in 4.2.1. The spills are summarized in Table 7.

Table 7. Summary of spills from the collection system

Date	Location	Description	Estimated volume / duration	Corrective actions taken	Spills Action Centre reference
Apr 19	1677 Missenden Crescent	Sewage leak discovered during excavation work	Unknown	Spill was cleaned up	1-5YN4RM
Apr 23	110 East Drive	Minor leak from maintenance hole due to blockage	Minor	Blockage was removed	1-63ESS8
Jul 16	Sherdawn Mews SPS	A severe wet weather event resulting in: • 8 overflows from sewage pumping stations, • 3 discharges from system overflows, • a spill from 3 maintenance holes, and possible mixing of sanitary and storm flows during work to connect a new offline wastewater storage facility to sanitary system	175 m3	NA	1-90RAXE
	Hiawatha SPS		168 m3	NA	1-90RAS5
	Ben Machree SPS		542 m3	NA	1-90RB3G
	Watersedge SPS		645 m3	NA	1-90RB35
	East trunk offline storage		Unknown	NA	1-90U03J[2]
	Richard Memorial SPS		243 m3	NA	1-AODVJ5[2]
	Indian Road SPS		42 m3	NA	1-AODV1J[2]
	Meadowvale SPS		3 hours	NA	1-AODV5J[2]
	Rosemere SPS		4 hours	NA	1-AODVHV[2]
	Credit Woodland Overflow		5.5 hours	NA	1-AODVK2[2]
	Overflow at Sir Richard Rd. and Courier Lane		4 hours	NA	1-AOHB23[2]
	Clarkson GO Overflow		10,300 m3	NA	1-9BTRFK[2]
	3 maintenance holes on Culham Trail		Unknown	NA	1-94MFDD[2]
Aug 18	Hewick Meadows Park	Spill from maintenance hole due to high flows	Unknown	NA	1-9YH3Y9[2]
Nov 07	6750 Mississauga Road	Spill from maintenance hole due to blockage	Unknown	Blockage was removed	1-D4JZAX
Nov 20	Overflow at Sir Richard Rd. and Courier Lane	Overflow from sanitary to storm due to blockage	80 m3	Blockage was removed	1-DSWIJV[2]

[2] Delayed report to SAC

Overflow and spill events are reported to the Ministry's Spills Action Centre and the Medical Officer of Health when required. During the July 16 storm event, nine of the overflow events reported to the Spills Action Centre were delayed. The delayed reporting was due to how overflows are monitored and staff availability in prioritizing flooding response, and their safety during the storm.

Several overflow notifications and flow monitoring systems exist in various points of Peel's wastewater collection system. Operations staff respond to overflow alarms at the pumping stations and initiate the required reporting. Peel also has alarms that indicate near overflow conditions in the system (system overflows), which operations staff must verify in the field. During an extreme weather event like on July 16, staff had been prioritizing response and attending to critical pumping stations and flooding reports. Through a formal review of event response, staff identified opportunities and recommendations that Peel continues to implement.

4.5 Notice of modifications

Under the Approval, minor modifications are pre-authorized and need only be recorded on the appropriate form and retained. A summary of the types of alteration completed in the reporting year is provided in Table 8. None of these alterations posted a significant threat to the drinking water system.

Table 8. Preauthorized modifications forms

Form type	Description	Completed
SS1	Form SS1 documents preauthorized alterations to sanitary sewer mains and forcemains, i.e., addition, modification, replacement, or extension to system's pipes	19
SS2	Form SS2 documents preauthorized alterations to the components of the collection system, i.e., addition, modification, or replacement of components of the system or sewage pumping stations;	0
A1	Form A1 documents preauthorized alterations to equipment with emissions to air, e.g., addition, modification, or replacement of venting for odour control or emergency generators	0

Repair and maintenance activities are exempt from the documentation requirements and may be performed as needed to maintain the collection system in good working order.

Peel undertakes construction projects to upgrade or enhance the collection system to meet demands related to industrial and commercial growth in Peel that may alter incoming wastewater volume or loading (strength), and to integrate new technologies. Under the Approval, minor modifications and system extension are preauthorized, provided they meet the conditions specified. Major modifications that are not preauthorized require an amendment to the Approval and are listed in the Approval as Additional Approved Works. There were no amendments to the Approval in the reporting year.

4.6 Efforts to achieve conformance with Ministry's treatment and collection system requirements (Procedure F-5-1)

As Peel's population continues to grow, volumes of wastewater are expected to continue to increase. In addition, flows rise during wet weather and snow melt events due to infiltration of water into the collection system. Climate change causes an increase in the frequency and severity of these wet weather events. Increased flows influence treatment effectiveness. Another influence is industrial discharges into the collection system. Peel's Water and Wastewater 10-Year Plan includes ongoing capital improvements to the treatment plants and collection system to improve flow management to protect neighbourhoods from flooding, maintain treatment capacity, and meet all regulatory limits for treated effluent. Peel has several avenues by which it is working to address these challenges to the wastewater system, including sewer conditions assessment and rehabilitation as described in section 4.3.5.

G.E. Booth Water Resource Recovery Facility

Peel recognizes that the plant capacity is approaching 90% of design, which increases the possibility of bypass occurrences and potential impacts to effluent quality during high flows. To address high flows to G.E. Booth WRRF, there is a project underway to divert flows from east to west (away from G.E. Booth WRRF and towards Clarkson WRRF). The project is expected to be completed and flow diversion operational in 2027. The preliminary flow diversion strategy under this project is to re-direct approximately 70 MLD. More information on this project is available on Peel's construction website. Information specific to environmental assessments being performed by Peel are available on the Environmental Assessment website.

Peel continues working to reduce inflow and infiltration in the collection system that contributes to peak flows during high flow events. See section 4.2.2 for more information.

Industrial Wastes

Peel Region's Wastewater Bylaw (53-2010) sets concentration limits for discharges to the sanitary sewer, which subsequently protects the treatment plants from industry impacts, and provides information on agreements and spills to the environment. The bylaw applies to the industrial, commercial, and institutional (ICI) sectors as well as residences, and establishes penalties for offences of up to $100,000 for businesses.

All ICI facilities are inspected by Peel staff at a minimum once every 2 years, resulting in thousands of inspections being completed annually. The inspections are used to assess the discharges from the facility and its compliance with the bylaw as well as the effect on the wastewater collection and treatment systems. Upon discovery of a spill into the sanitary sewer, or notification from an industry of a release, Peel wastewater systems are notified so staff can implement protective actions. For more information about the bylaw enforcement, please visit our website at Wastewater Bylaw.

4.7 Other information required by the Ministry Water Supervisor

There was no other information requested by the Ministry Water Supervisor in 2024.

5. Performance management programs

5.1 Ministry inspections

Wastewater system inspections are performed periodically by the Ministry to ensure systems are operating as required and complying with the terms and conditions of their Approvals. Performance data is reviewed against the compliance objectives and limits. The inspections also verify that Peel meets sampling, testing and treatment standards and staff competency requirements. Additional inspections can be triggered through a variety of factors such as frequency of events or inconsistent system performance (e.g., increased number of spills or reportable incidents), in response to a complaint or concern, or as part of a follow-up from prior non-compliances.

There was no Ministry inspection of the Peel's wastewater collection system in 2024.

5.2 Wastewater integrated management system

Peel Region has developed and implemented the Wastewater Integrated Management System (WWIMS) to systematically assess pollution prevention, embrace quality work, and improve overall performance to meet compliance obligations. It also provides an effective framework for operational excellence, guidance to building and managing policies, procedures, and process, and fostering a culture of continual improvement within the wastewater division.

The WWIMS draws on the principles of ISO 9001 (Quality Management Systems) and ISO 14001 (Environmental Management Systems) and strives to implement optimal management practices for the Peel-operated wastewater collection and treatment systems. The scope of the WWIMS includes the Wastewater Collection System, and the Inglewood Wastewater Treatment Plant.

In July 2024, self-declaration of conformance to ISO 14001 and ISO 9001 standards for Peel Region's Wastewater Integrated Management System (WWIMS) was announced. This significant milestone reflects the hard work and ongoing commitment to environmental protection and quality assurance. The WWIMS meets all of the requirements set out within ISO 14001 and 9001, without depending on the third party (external) certification.

The WWIMS enhances service reliability and accountability. This approach leads to improved operational efficiency and performance, risk management, and stakeholder confidence, ultimately contributing to the sustainable and effective operation of our wastewater systems.

In 2024, an annual WWIMS risk assessment review was conducted, resulting in 146 activity assessments. Of those activities, 12 were identified as Significant Environmental Aspects. Significant Environmental Aspects are ranked to aid in the determination of objectives and targets, a process put in place to reduce or eliminate risks. Objectives and targets are monitored and tracked on a quarterly basis.

Appendix A - Facilities

Table 9. List of pumping stations and facilities in South Peel wastewater collection system

Serial number	Sewage pumping station (SPS)	Location
1	Beach Street SPS	City of Mississauga
2	Beechwood SPS	City of Mississauga
3	Ben Machree SPS	City of Mississauga
4	Bolton North Hill SPS	Town of Caledon
5	Bolton SPS	Town of Caledon
6	Caledon East SPS	Town of Caledon
7	Castlemore SPS	City of Brampton
8	Clarkson SPS	City of Mississauga
9	Dougall SPS	Town of Caledon
10	Elmwood SPS	City of Mississauga
11	Fifeshire SPS	City of Mississauga
12	Front Street SPS	City of Mississauga
13	Gore Road SPS	City of Brampton
14	Harvestview SPS	Town of Caledon
15	Hiawatha SPS	City of Mississauga
16	Indian Road SPS	City of Mississauga
17	Intermodal SPS	City of Brampton
18	Jack Darling Memorial Park 1 SPS	City of Mississauga
19	Jack Darling Memorial Park 2 SPS	City of Mississauga
20	Lakelands SPS	City of Brampton
21	Mayfield SPS	City of Brampton
22	McVean SPS	City of Brampton
23	Meadowvale SPS	City of Mississauga
24	Mullet Creek SPS	City of Brampton
25	O'Neil SPS	City of Mississauga
26	Pinetree SPS	City of Mississauga
27	Richards Memorial SPS	City of Mississauga
28	Rosemere SPS	City of Mississauga
29	Shardawn Mews SPS	City of Mississauga
30	Silver Birch Trail SPS	City of Mississauga
31	Stonehaven SPS	City of Mississauga
32	Watersedge SPS	City of Mississauga

Table 10. List of pumping stations and facilities in Inglewood wastewater collection system

Serial number	Sewage pumping station (SPS)	Location
1	Inglewood SPS	Town of Caledon

Table 11. List of odour control and septage facilities

Serial number	Facility	Location
1	Torbram Septage Receiving Station	City of Brampton
2	Mullet Creek Septage Receiving Station	City of Brampton
3	York-Peel Odour Control Facility	City of Brampton

Appendix B – Frequently asked questions

Where does water go after it is used?

After you use water to wash dishes and clothes, brush your teeth, shower or flush the toilet, the used water (wastewater) that goes down your drains flows through a series of underground sewer pipes to the wastewater treatment plants.

The wastewater is treated to remove contaminants and kill disease-causing microorganisms before being discharged into the environment. Peel operates three water resource recovery facilities (WRRF): G.E. Booth WRRF and Clarkson WRRF, both discharging into Lake Ontario, and the Inglewood wastewater treatment plant, discharging into the Credit River. These three plants serve the cities of Mississauga and Brampton and the Town of Caledon.

View Peel Region's wastewater video for more information on how wastewater is treated.

Why am I experiencing a sewage odour outside my house?

The sewage odor outside your house could be from a variety of sources. It could be that the sewer is backed up close to your property. If your property is located close to a lake, algal blooms also cause odours. Other sources of odour might include: scheduled treatment plant maintenance coupled with prevailing winds, nearby farming activities, or odours from waste management facilities or industries.

If you are noticing odours near your property, please call Peel Region at 905-791-7800.

Why am I experiencing a sewage odour inside my house?

If you notice an odour of sewage coming from a drain in your house, it is recommended to pour a cupful of bleach into the drain, let it sit for 10-15 minutes and then rinse it down with plenty of water. If this does not resolve the odour problem, please call Peel Region at 905-791-7800 for further investigation.

What is the difference between a storm sewer and sanitary sewer?

Wastewater that goes down drains inside homes and buildings enters the sanitary sewer system, which sends it to a wastewater treatment facility for treatment before it is released to the environment. Sanitary sewer systems in Mississauga, Brampton and Caledon are maintained by Peel Region.

Rainwater and melting snow are called storm water. Stormwater enters storm grates on the road and enters the storm sewer pipes that run beneath the roadways. These pipes discharge the storm water to local waterways, like streams, creeks, and lakes. The majority of storm sewer is maintained by the local municipality: the cities of Brampton and Mississauga and the Town of Caledon. Peel maintains storm sewers on Regional roads.

Refer to the Peel Region website for more information about wastewater and storm water.

What happens to industrial wastewater?

Some companies treat their own wastewater and release it directly into the environment or into Peel Region's sanitary sewer (wastewater collection system). Wastewater released into the sanitary sewer joins all other wastewater collected (from households and building drains) and flows to one of the wastewater treatment plants. Industrial wastewater can be hazardous or contain substances that may damage sewer infrastructure or upset the treatment process. Therefore, all wastewater released and all businesses that release it into Peel sewers must comply with Peel's Wastewater Bylaw. To ensure compliance, industrial facilities are examined by inspectors from Peel's Environmental Control department. Thousands of inspections are completed each year.

What must not be disposed down the toilet or poured down the drain?

It is important to understand that what goes down the drain or the toilet may have negative impacts on the wastewater system and the environment. Fats, oils, and grease should never be poured down the drain because these materials are known to cling to pipe walls. Over time, their accumulation can build up to such high levels that the sewer can become blocked. Another reason to avoid disposing fats, oils, and grease into drains or toilets is that it is not effectively broken down during the wastewater treatment process. Instead, Peel

recommends that edible household fats, oils and grease (FOG) should be collected and properly disposed as per the FOG disposal at home instructions. To learn more about Peel's community recycling centres' web page.

It is also important not to dispose items down the toilet that could get stuck in or damage the sewer systems. Sticks, rags, paper towels, personal hygiene products, diapers, disposable wipes, household hazardous waste and pharmaceuticals should not be disposed by simply flushing down the toilet. Any unused or expired pharmaceuticals can be returned to your local pharmacy. For more information on how to properly dispose of items that damage the wastewater refer to idontflush.ca.

What causes a sanitary sewer backup?

Most sewer backups occur when sewer pipes get blocked. Sewer pipes can become clogged with excess fats, oils, greases, food wastes, coffee grounds, hair, toilet paper, soap residue, or inappropriate materials being flushed down the toilet or drain. Even sanitary wipes that are labelled "flushable" will in fact clog pipes, sewers, and screens at the treatment plants. To help reduce sanitary sewer blockages and prevent backups, it is recommended to properly dispose of these items and other materials that can harden or settle within the sewer pipes.

Sanitary sewer backups can also occur when tree roots grow into or through sewer lines. These roots may be from trees that are outside your property boundaries. The only solution to this problem is to cut away the roots and then replace the pipeline.

If you notice a sewer backup in your home, call Peel Region at 905-791-7800 extension 4409, or 1-888-919-7800 for residents in Caledon. If the problem area is determined to be on private property, there is a flat fee for the service call.

More information about wastewater and storm water is available on the Peel Region webpage.

How safe is the treated wastewater that is released into Lake Ontario?

To meet environmental compliance criteria in Ontario, all wastewater must be treated before being returned to the environment. Peel operates and maintains three wastewater treatment facilities, G.E. Booth, Clarkson, and Inglewood, and

the effluent discharged into the environment must meet location-specific, provincial, and federal standards.

Which pipes are mine and which are Peel Region's responsibility?

See the information at homeowner and regional responsibilities of wastewater infrastructure.

What is optional water and sewer line insurance program?

The pipes on the private side of the property line belong to the property owner. Sometimes these pipes may get damaged or blocked, which can result in costly plumbing bills. Peel endorses a voluntary pipe insurance program. For more information can be found on the pipe protection plan webpage.

How can I find out what work is taking place in my neighbourhood?

Peel maintains an interactive mapping tool on our website where the public can see the status of current and upcoming water projects that could result in water interruption. At this site, you can sign up to receive email notices with project updates.

Similarly, we publish a summary of water outages. If you are unexpectedly without water, you can check this site to learn what is happening and view the answers to frequently asked questions.

Other sources for more information about wastewater and related issues

Peel Region
working with you

Peel Region

10 Peel Centre Dr., Brampton ON L6T 4B9

Wastewater-related questions:

Phone: 905-791-7800 extension 4685

Website: peelregion.ca/wastewater

E-mail: Publicworkscustserv@peelregion.ca

Water and Sanitary Sewer and Septic Protection Plans:

Peel Wastewater Bylaw or Service line warranties

Ontario

Government of Ontario

Ministry of the Environment, Conservation and Parks

Public Information Centre

Phone: 416-325-4000

Toll-Free: 1-800-565-4923

Website: ontario.ca/environment

Canada

Government of Canada

Environment and Climate Change Canada Inquiry Centre

Phone: 819-997-2800

Toll-Free:1-800-668-6767

Website: ec.gc.ca

Health Canada

General Inquiries Telephone: 613-957-2991

Toll free: 1-866-225-0709

Website: canada.ca/en/health-canada