

City of Barrie  
Sewage Collection System

2023 Annual Monitoring Report  
Environmental Compliance Approval 014-W601

March 28, 2024

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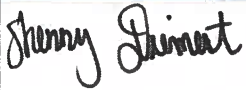



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## Review and Sign-Off

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## Overview

The City of Barrie owns and operates a wastewater collection system which terminates at the Wastewater Treatment Facility (WwTF) located at 249 Bradford Street. In 2023, the collection system operated under Ministry of the Environment, Conservation and Parks (MECP) Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) No. 014-W601 dated February 15, 2023. A recent history of collection system ECA approvals is as follows:

**Table 1 - System-Wide ECA Approvals History**

System-Wide ECA Number	Date of Issue	Reason for Issue
2883-AKUJQZ	August 16, 2017	Approved Holly PS upgrade
7160-AQWSAX	September 11, 2017	Corrected error re: Minet's Point PS flow capacity
5921-ATUKKR	January 10, 2018	Decommissioning of Huronia Pump Station PS-3
014-W601	February 15, 2023	New approval format for Consolidated Linear Infrastructure

This report has been prepared in accordance with the requirements of section 4.6 of Schedule E of CLI-ECA 014-W601.

### Reporting Section 4.6.3: Summary and Interpretation of Monitoring Data

This section discusses all monitoring data and includes an overview of the success and adequacy of the works. Five-year flow summaries are shown below for each sewage pumping station (SPS) except for Perry Street SPS which does not have a flow meter or level sensor to allow for flow measurement or calculation. In March 2020, communication upgrades at Innisfil SPS enabled the transmission of flow data back to the to the data server located at the WwTF allowing data to be graphed below.

Pump Stations and Force Mains

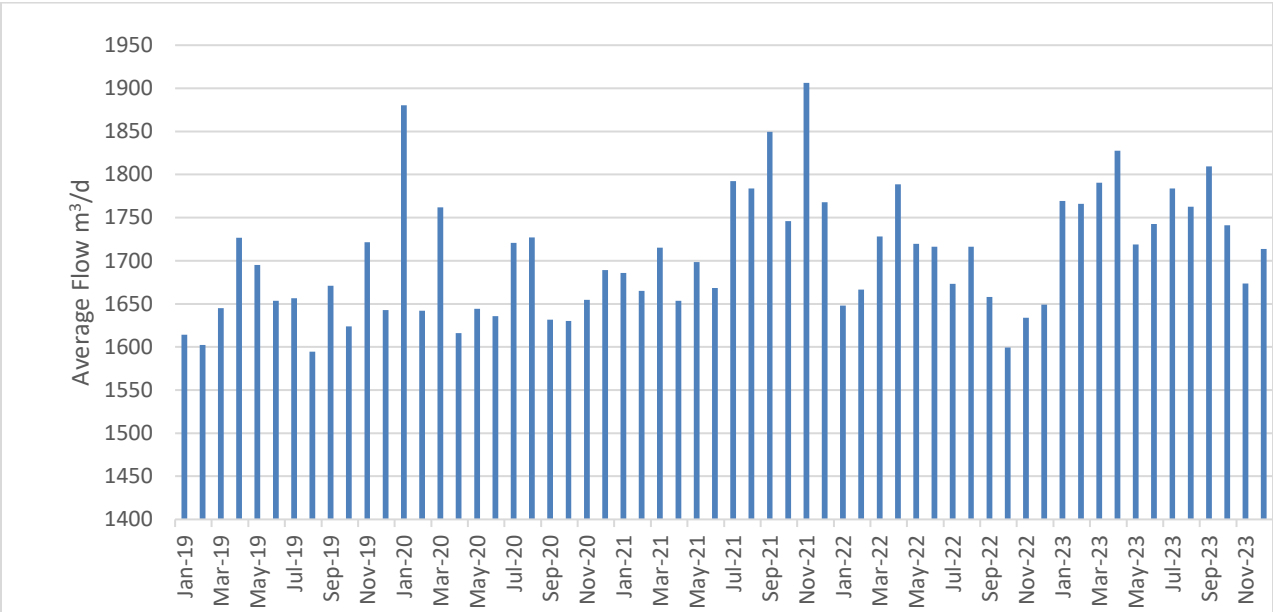


Figure 1 - Grove Street SPS Monthly Average Daily Flows

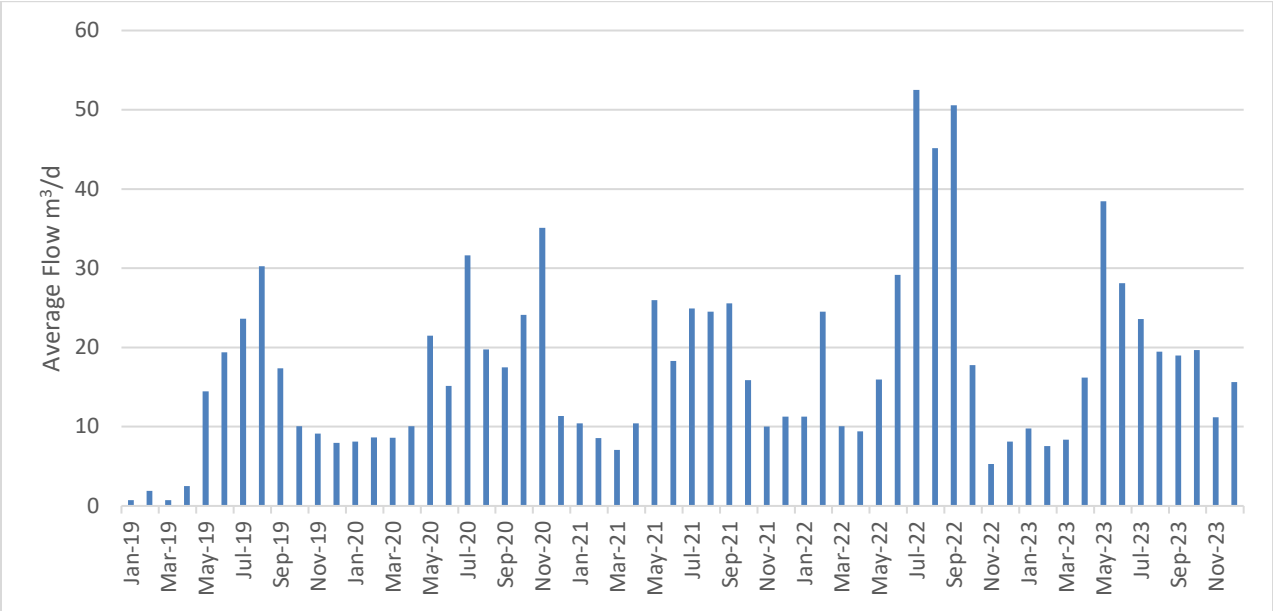


Figure 2 - Heritage Park SPS Monthly Average Daily Flows



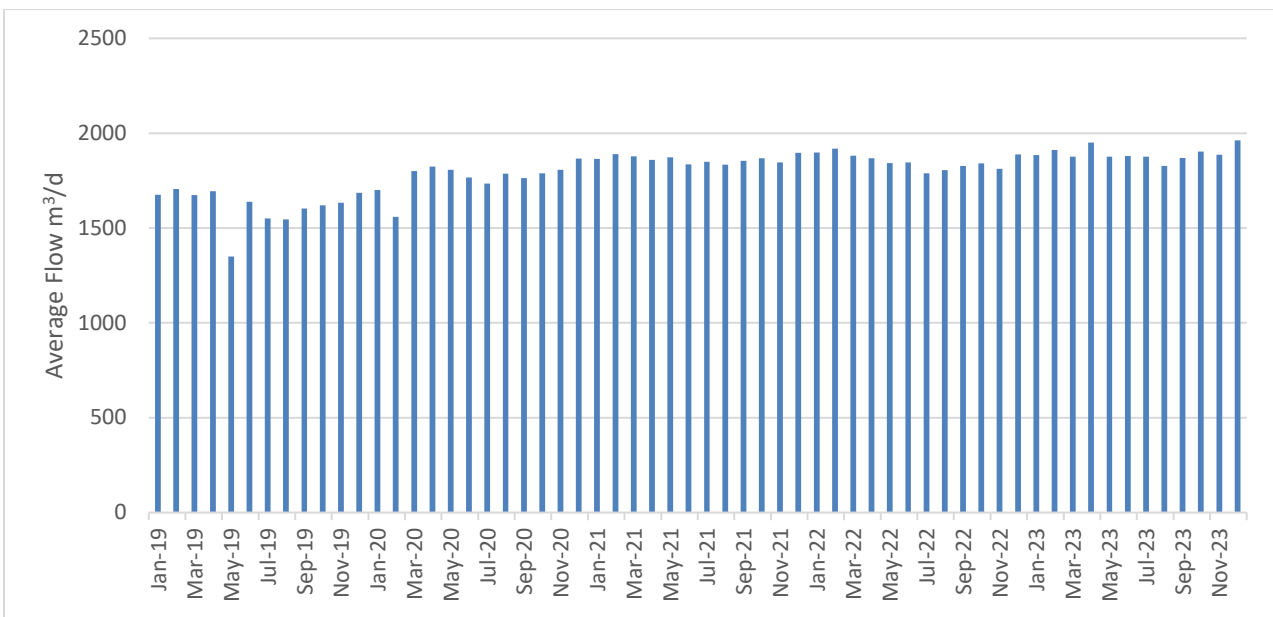


Figure 3 - Holly SPS Monthly Average Daily Flows

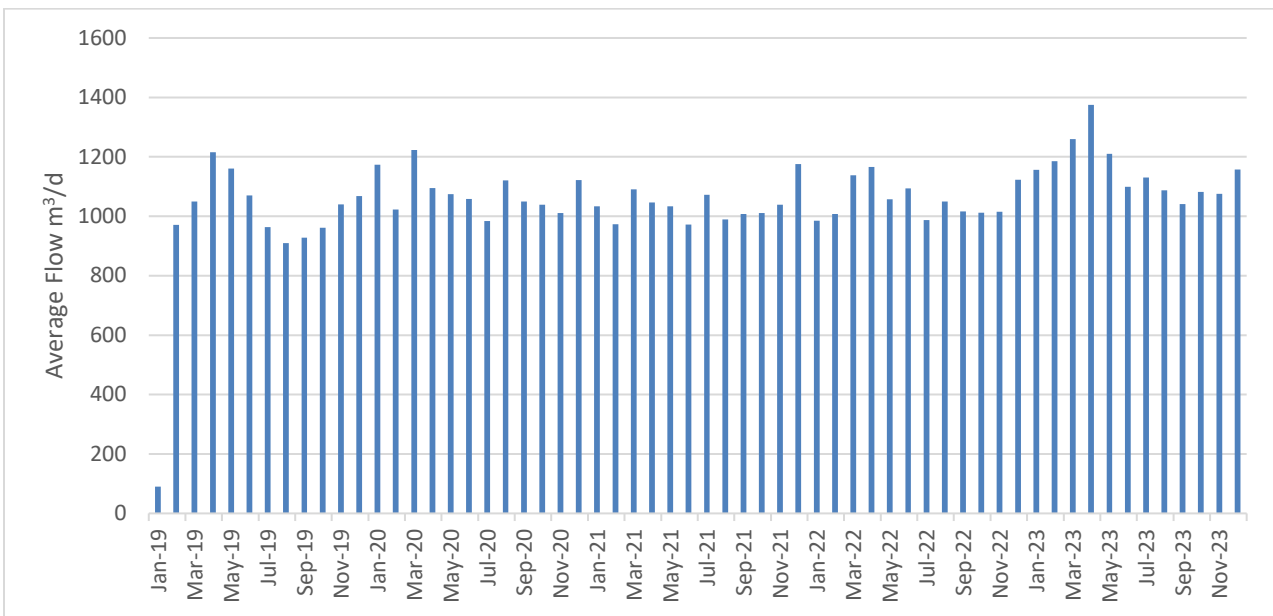


Figure 4 - Little Lake SPS Monthly Average Daily Flows

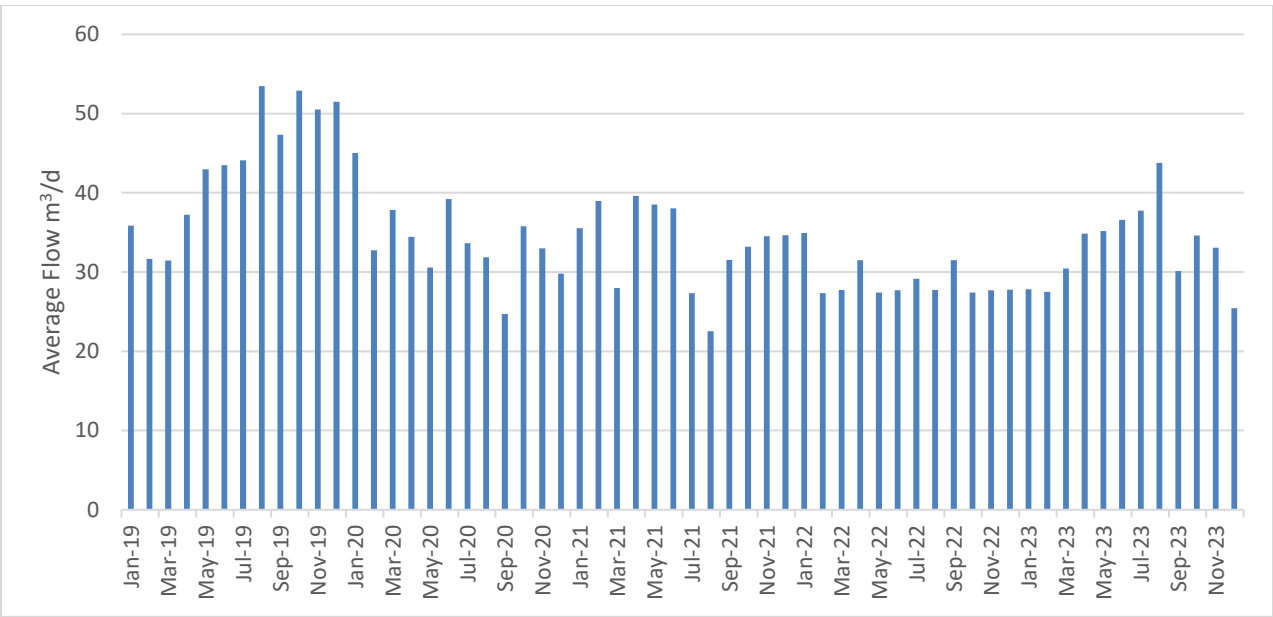


Figure 5 - Lockhart SPS Monthly Average Daily Flows

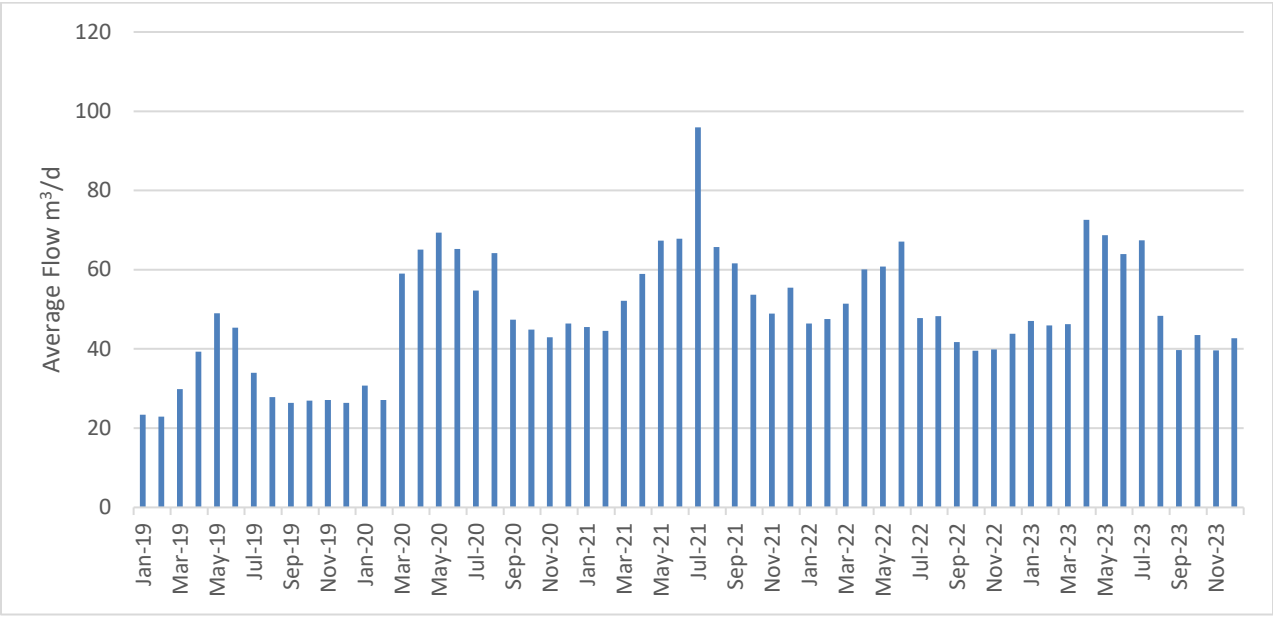


Figure 6 - Minet's Point SPS Monthly Average Daily Flows

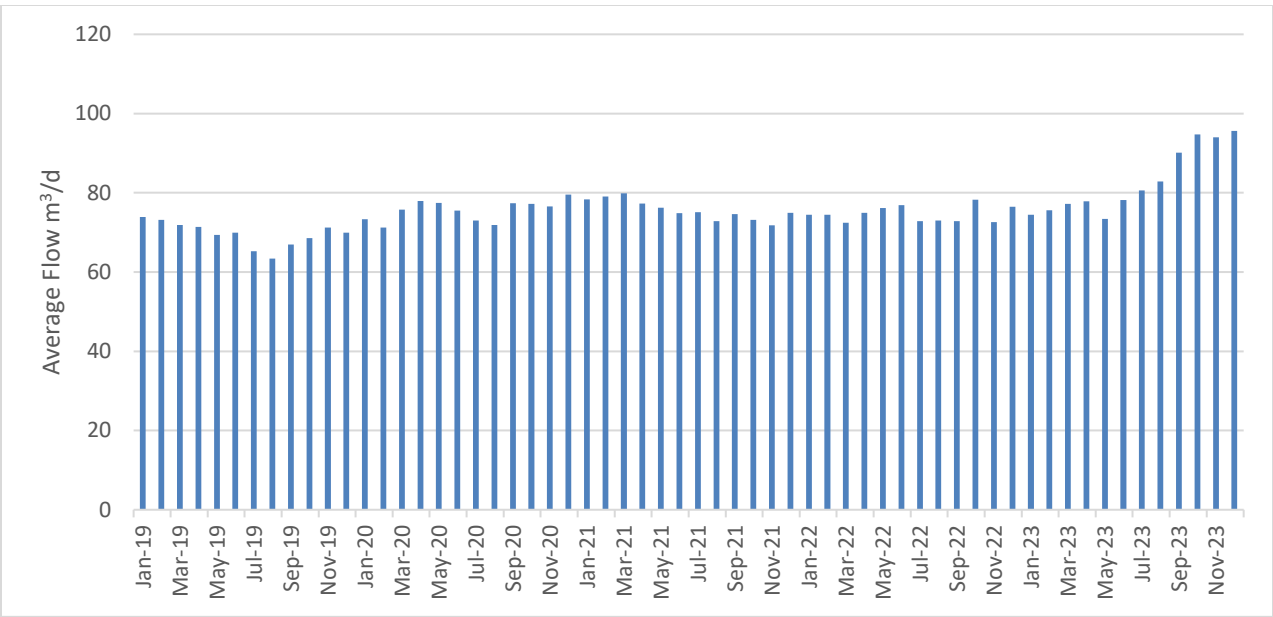


Figure 7 - Mooregate SPS Monthly Average Daily Flows

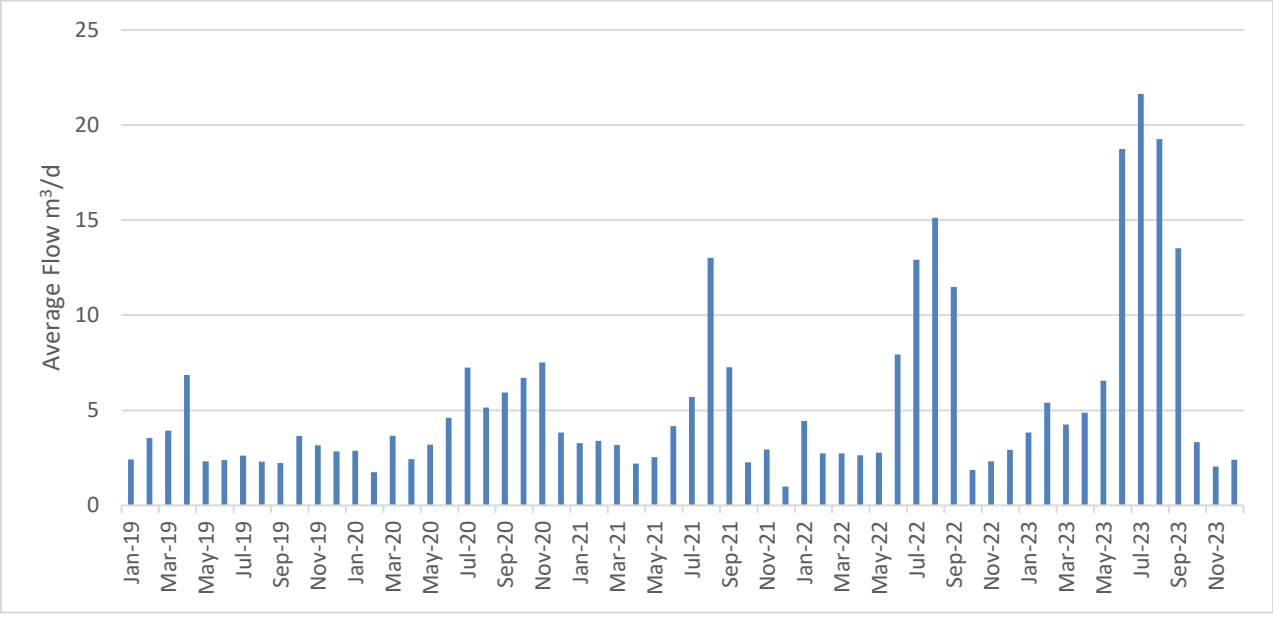


Figure 8 - Splash Pond SPS Monthly Average Daily Flows

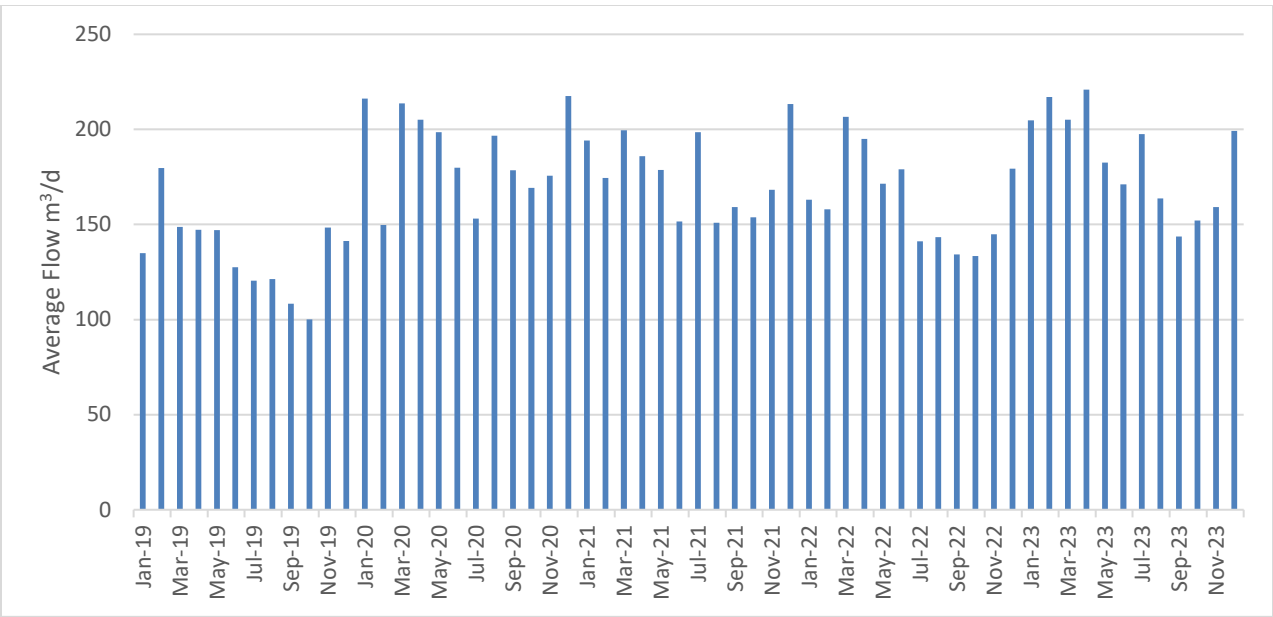


Figure 9 - Tyndale Park SPS Monthly Average Daily Flows

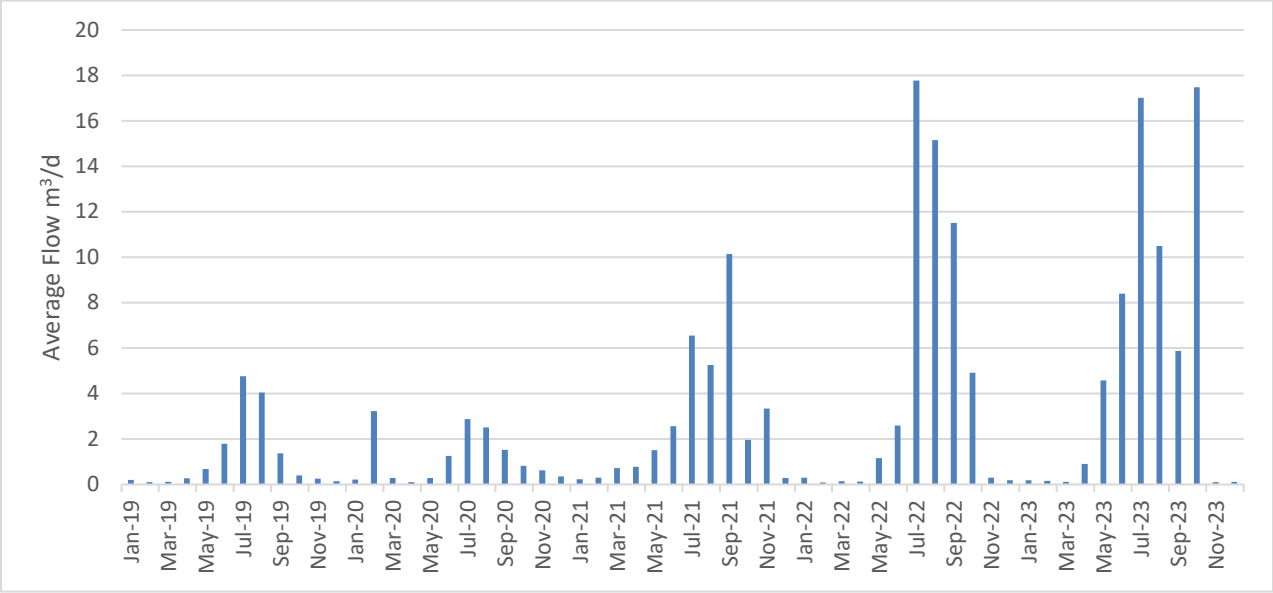


Figure 10 - Johnson's Beach SPS Monthly Average Daily Flows

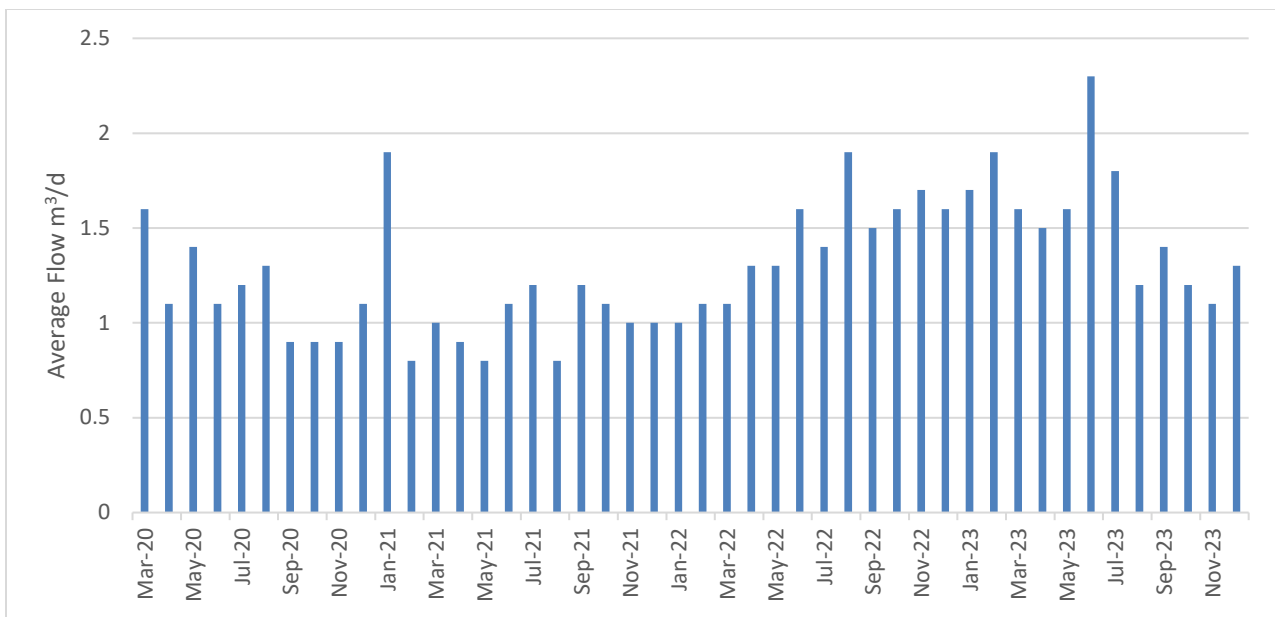


Figure 11 - Innisfil SPS Monthly Average Daily Flows

Yearly average daily flows for pump stations are presented in the chart below:

Table 2 - Pump Station Yearly Average Daily Flow (m³/d)

Pump Station	Average Flow (m³/d)				
	2019	2020	2021	2022	2023
Holly SPS	1612	1768	1862	1851	1892
Tyndale Park SPS	135	188	177	162	185
Splash Pond SPS	3	5	4	6	9
Mooregate SPS	69	76	76	75	83
Lockhart SPS	36	42	33	30	33
Minet's Point SPS	32	52	60	50	52
Heritage Park SPS	12	18	16	23	18
Johnson's Beach SPS	1	1	3	5	6
Grove Street SPS	1654	1687	1745	1683	1758
Little Lake SPS	963	1082	1038	1054	1155
Innisfil SPS		1	1	1	2
<b>TOTAL</b>	<b>4481</b>	<b>4882</b>	<b>5015</b>	<b>4940</b>	<b>5193</b>

The adequacy of the existing system is sufficient from a compliance standpoint, despite rising flows at many stations. Over the past five years development and population growth, as well as an increase in multi-unit dwellings being built within the City, have driven the increase in flows.

In 2023, no projects were undertaken at pump stations and forcemains. The City intends to outfit all stations with flow meters, if possible. Where there is no flow meter, flows are calculated based on volume change in the well when a pump is running.

### Reporting Section 4.6.4: Description of Operating Problems and Corrective Actions

The City of Barrie uses computerized maintenance management systems (CMMS) to track work orders, inspections, repairs, repair costs and internal and external service requests. These systems are the source of asset and maintenance data presented in this report.

### Pump Stations and Force Mains

A list of Work Orders issued and completed for pump station repairs conducted in 2023 is as follows:

Table 3 - Pump Station and Forcemain Repairs Completed in 2023

Date	Repair Detail	Resolution and Closing Comments	Pump Station
11/07/2023	Milltronics transducer head may be dirty. Getting nuisance alarms and had to disable the Lo alarm and Signal Fault alarm.	Switched channel from sensor 1 Changed channels on lit.	Grove
07/11/2023	Investigate Miltronics for Grove Well A. After checking trends could see that Miltronics levels were all messed up during times the pumps were running causing issues.	Seems to have issues below .9 on a pump down have to schedule a possible head cleaning. Item addressed and issue resolved.	Grove
07/02/2023	Take a look at VFD fault	Reset drive, ran in PC man, and auto as well as soft start all good	Holly
22/02/2023	SCADA restart	Rebooted SCADA. Seems ok now	Holly
17/08/2023	Well #1 hi float is not alarming.	Hi float repaired and operating correctly	Holly
30/05/2023	Scada node is not working. Tried restarting computer however that did not help	Reboot SCADA node. Ok now.	Holly
10/08/2023	Holly Wet Well 1 HiHi float not alarming. Float will tip fine but not triggering an alarm. Will need to be replaced. (As per Cam)	Replaced HI HI float	Holly
01/09/2023	Pump keeps tripping out, please have maintenance look into why the pump doesn't continue to run.	Pump was plugged. Is complete. Pump is a 5 hp drawing the right current had to adjust overloads.	Johnsons
24/02/2023	Pump #1-hour meter has stopped working. Pump is pumping normally in its cycle however the time is stuck.	Replaced hour meter.	Little Lake

Date	Repair Detail	Resolution and Closing Comments	Pump Station
11/05/2023	Pump #1 won't work on floats. check wiring and floats to ensure properly working.	Got extraction tool opened float box switched floats and tested function.	Little Lake
21/09/2023	Please check UPS at Lockhart. Received a PLC Restart alarm.	UPS had battery fault alarm. Replaced with a used UPS. We didn't have any new ones in stock. More have been ordered.	Lockhart
16/03/2023	Please have contractor replace faulty back flow preventer at Minets Point	New device has been installed and material costs have been added.	Minets Point
18/07/2023	Repeated low wet level alarms. Please check	Adjusted the float back in its ring.	Mooregate
22/03/2023	Please install a new alarm card in the UPS and wire the alarm back to the PLC	Installed new ups card and wired ups contacts to initiate alarm, tested alarm	Splashpond

## Report Section 4.6.5: Summary of Calibration and Maintenance Program

### Pump Stations and Force Mains

Normal pump station operation is unmanned and automated by use of electronics, electro-mechanical devices and programmable logic controllers. Real-time condition data is monitored by a Supervisory Control and Data Acquisition (SCADA) system and recorded on a data server ("Historian") located at the WwTF. Six pump stations have flow meters.

Station alarms will call out via telephone line or wireless network to an on-call operator 24/7/365. Alarms are annunciated at the WwTF.

The following alarms are available at all pump stations and will appear on the SCADA system until cleared. These alarms are "high priority" and, as a result, call-out to an on-call operator:

- Wet well HI Level
- Wet well HI HI Level
- Wet well LO Level
- Building or Panel Intrusion
- AC Fail, LO Temp
- Communication Failure
- Pumps Not in Auto
- Pump Fault

Each station may also have additional alarms including:

- Generator Running
- Generator Fault
- Generator Not in Auto
- Generator Louver Fault
- Load Transfer Switch Not in Auto

All alarms and acknowledgments are logged as well as actions by operators. There is one alarm file per day and daily reports are available upon request.

In addition to automated monitoring, inspections are routinely conducted by wastewater operations staff. Pump station inspections are performed twice per week and generally consist of:

- Inspecting and recording pump hours for each pump in a pump hour logbook
- Inspecting pump house or cabinet condition (as the case may be)

- Recording backup generator hours (if present) and inspect condition (oil levels, coolant etc.)
- Record all findings in the station logbook

Less frequent maintenance will generally consist of (depends on station and requirements):

- Weekly pump down of the well for cleaning
- Weekly testing, cleaning, if necessary, inspect floats for proper operation and alarm
- Weekly check intrusion alarm
- Bi-weekly generator inspection and exercise
- Quarterly entry into the wet well and inspection/cleaning
- Semi-Annual generator/transfer switch inspection at load, replenish fluid levels
- Safety inspections conducted twice yearly
- Snow clearing (as needed)

Maintenance, repairs, service requests and inspections are tracked through work orders on a CMMS.

Over the reporting period, 3,294 work orders were completed for inspections and maintenance at pump stations. Most work orders were for routine preventative maintenance and inspections and all are tracked in CMMS. A list of all completed work orders is available upon request.

The annual verification of flow meters at pump stations was carried out by a Certified Calibration Contractor in October and November 2023 in accordance with Reporting Section 4.6.5. Flow meter verification information is presented in the chart below:

**Table 4 - 2023 Flow Meter Verifications**

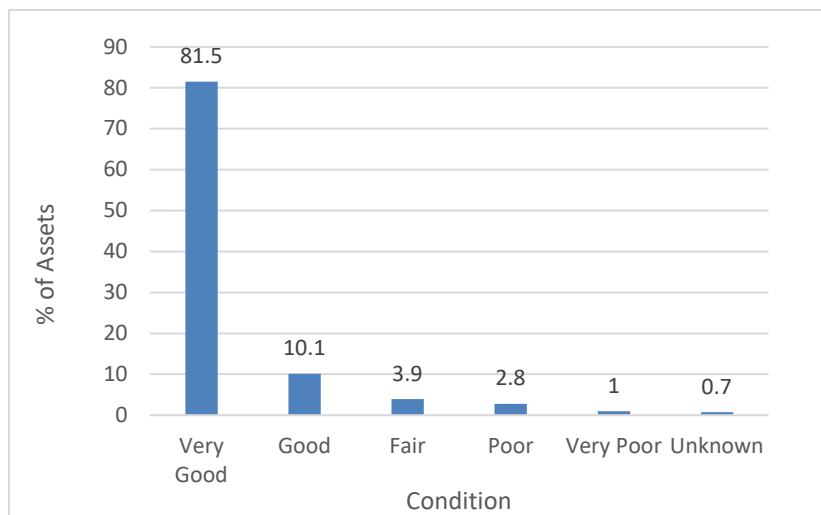
Tag ID	Description	Serial No.	Flow Range	Mfr	Result	Date
PSMGFIT101 P2	Moorgate PS 300 Kozlov St.	F7015916000	360 m <sup>3</sup> /hr	E+H	Passed	October 24, 2023
PSMGFIT101 P1	Moorgate PS 300 Kozlov St.	F7013916000	360 m <sup>3</sup> /hr	E+H	Passed	October 24, 2023
PSHO_FIT100	Holly PS 65 Logan Cr.	3K6720182909 56	400.90 l/s	ABB	Passed	November 1, 2023
PSHO_FIT200	Holly PS 65 Logan Cr	3K6720182909 58	400.90 l/s	ABB	Passed	November 1, 2023
PSSP_FIT100	Splash Pond PS 5 Lakeshore Dr	E60EC616000	90 m <sup>3</sup> /h	E+H	Passed	October 31, 2023
PSTD_FIT100	Tyndale Park PS 45 Tyndale Rd	F31BE719000	68.1 m <sup>3</sup> /h	E+H	Passed	October 26, 2023
PSLL_FIT100	Little Lake PS 510 Duckworth	J30B8416000	500 m <sup>3</sup> /h	E+H	Passed	October 31, 2023



## Gravity Collection System

### *CCTV Inspection*

The City of Barrie administers a closed-circuit television (CCTV) sewer inspection program for sanitary sewers. In 2023, the City’s contractor conducted inspections on approximately 59.5 km of sanitary sewers. Please refer to Appendix A for a map of Sanitary Flushing and CCTV. The sanitary mains that were inspected ranged in the age between 25 to 50 years old. Despite the age of the pipes the CCTV results revealed that the pipe condition was in very good condition. The use of CCTV technology allows a thorough examination of the sanitary collection system to ensure early and effective detection of any potential issues such as damaged pipes and potential blockages. The information garnered from the CCTV inspections feed into the flushing and insitu repair programs described below. The inspected sewers had an 81.5% very good condition rating, indicating that the CCTV program has effectively provided operations staff with information to allow proactive and preventative maintenance within the system. These efforts have preserved the integrity of the pipes, contributing to the overall functionality and longevity of the sanitary collection system. The condition rating of the sanitary sewer collection system in its entirety is shown in the figure below.



**Figure 12 - 2023 Sanitary Sewer Condition Rating**

### *Flow Monitoring*

The City of Barrie conducted flow monitoring at two locations in the gravity sanitary sewer system from October to December 2023. Monitors were installed on a temporary basis to allow City staff to calibrate flow modelling software, and to identify areas of significant inflow and infiltration for further examination.

### *In-Situ Repair*

The City of Barrie operates an annual in-situ repair program for the gravity collection system. Repair locations are derived from annual CCTV inspections and issues arising from field operations. Issues are prioritized based on structural deficiencies and sources of inflow and infiltration (I&I) and repairs are scheduled to optimize the available annual budget. In 2023 thirty-five locations were identified and repaired with a full cured in place pipe (CIPP) lining. A map showing the locations of Sanitary CIPP Relining is in appendix B.

*Sanitary Flushing*

Local sanitary sewer cleaning is undertaken by a City operated flushing crew. Efforts are made to clean each local sanitary pipe in the City of Barrie every 2 to 3 years. Problem areas, usually in older parts of the City, are put on a weekly flushing list. The weekly flushing program keeps the sewer in working condition until the underlying problem can be addressed as part of our in-situ repair program, or as part of a larger capital project. Additionally, the Wastewater Operations Branch (WWOB) oversees a flushing contractor who performs flushing of the larger trunk mains. The following sewers were included in the weekly flushing program for 2023:

**Table 5 - Gravity Sewers on Weekly Flushing Program**

Sewer ID	Location
SAI02023-SAI02021	Frederick St.
SAN04142-SAN04141	Wellington St.
SAC07018-SAC07019	Glenwood Dr.
SAI06101-SAI06100	Cundles Rd.
SAC03026-SAC03025	Brookdale Dr.
SAE02002-SAE12064	Caroline St.
SAI02017-SAI02016	Sanford St.
SAB01021-SAB0109	Cumberland St.
SAE02010-SAE02011	Marcus St.

The City is responsible for the cost of sanitary lateral replacements and critical repairs between the sewer main and homeowners' property line if the repairs are a result of a structural deficiency in the lateral. Repairs due to misuse of the sewer system resulting in a blockage of the lateral (i.e. disposal of grease down the drain) is the responsibility of the homeowner. The lateral on private property is also the homeowner's responsibility. Below is a list of properties where laterals were repaired or replaced in 2023.

**Table 6 - 2023 Lateral Repair and Replace Lateral Locations**

WO#	Description	Date	Address
501315	Repair/Replace Lateral	1/5/2023	258 St. Vincent St.
501314	Repair/Replace Lateral	1/5/2023	63 Browing Trail
502753	Repair/Replace Lateral	1/6/2023	84 Edwards Dr.
504099	Repair/Replace Lateral	1/24/2023	48 Arthur Ave.
507407	Repair/Replace Lateral	2/14/2023	11 Strabane Ave.
513084	Repair/Replace Lateral	2/15/2023	162 Sunnidale Rd.
508452	Repair/Replace Lateral	2/22/2023	138 Codrington St.
513083	Repair/Replace Lateral	3/22/2023	29 Davidson St.
514636	Repair/Replace Lateral	3/30/2023	29 Shannon St.
515741	Repair/Replace Lateral	4/6/2023	88 Penetang St.
520890	Repair/Replace Lateral	4/13/2023	130 James St.
522522	Repair/Replace Lateral	4/26/2023	63 Melrose Ave.
520855	Repair/Replace Lateral	5/8/2023	37 Cumberland St.

WO#	Description	Date	Address
521497	Repair/Replace Lateral	5/11/2023	62 High St.
522528	Repair/Replace Lateral	5/17/2023	91 Melrose Ave.
524909	Repair/Replace Lateral	5/23/2023	132 Henry St.
524920	Repair/Replace Lateral	5/23/2023	13 Frances St. S
526643	Repair/Replace Lateral	5/29/2023	21 Eccles St.
526645	Repair/Replace Lateral	6/2/2023	24 Holgate St.
526644	Repair/Replace Lateral	6/2/2023	41 Saunders Rd.
527350	Repair/Replace Lateral	6/6/2023	12 Cumberland St.
528673	Repair/Replace Lateral	6/13/2023	154 Anne St N
534093	Repair/Replace Lateral	6/14/2023	4 Catherine Dr.
530143	Repair/Replace Lateral	6/23/2023	41 Essa St.
535327	Repair/Replace Lateral	6/23/2023	83 Eugenia St.
530840	Repair/Replace Lateral	6/28/2023	61 Cumberland St.
532513	Repair/Replace Lateral	7/6/2023	18 Howard Cres.
534092	Repair/Replace Lateral	7/18/2023	153 Owen St.
535326	Repair/Replace Lateral	7/27/2023	39 Eugenia St.
548256	Repair/Replace Lateral	10/18/2023	175 Duckworth St.
549856	Repair/Replace Lateral	10/26/2023	18 Strabane Ave.
568579	Repair/Replace Lateral	10/31/2023	191 Anne St. S
550982	Repair/Replace Lateral	11/3/2023	310 Codrington St.
568634	Repair/Replace Lateral	11/14/2023	77 Melrose Ave.
568580	Repair/Replace Lateral	11/15/2023	59 Melrose Ave.
568637	Repair/Replace Lateral	11/27/2023	110 Strabane Ave.
568639	Repair/Replace Lateral	12/5/2023	189 Grove St E.
568640	Repair/Replace Lateral	12/6/2023	107 Strabane Ave.
568641	Repair/Replace Lateral	12/6/2023	108 Strabane Ave.
568674	Repair/Replace Lateral	12/11/2023	1 Ryan Court
556676	Repair/Replace Lateral	12/14/2023	78 Eccles St.
568675	Repair/Replace Lateral	12/18/2023	40 Queen St.
568678	Repair/Replace Lateral	12/19/2023	30 Alfred St.
568679	Repair/Replace Lateral	12/20/2023	32 Alfred St.
568676	Repair/Replace Lateral	12/27/2023	97 Codrington St.

Additionally, the following table summarizes all maintenance activity on the gravity collection system in 2023:

**Table 7 - Summary of Other Maintenance on Gravity Sewers in 2023**

Description	Number of Work Orders
Clear Blocked Sanitary Main	11
Clear Debris/Obstruction	4
Inspect Lateral (CCTV)	33
Inspect Main (CCTV)	1
Maintenance Hole - Atmospheric Testing	52
Maintenance Hole - Inspection	52
Perform Sanitary Flushing	217
Reline Lateral (Contractor)	7
Repair/Replace Sanitary Main	4
Sanitary Maintenance Hole Repair	1
Trace Lateral (Utility Locate)	8
<b>TOTAL</b>	<b>390</b>

A detailed list of individual work orders can be supplied upon request.

## Reporting Section 4.6.6: Summary of Complaints and Responses

### Pump Stations and Force Mains

No complaints were received relating to sewage pumping stations or forcemains.

### Gravity Collection System

The City utilizes CMMS to track all internal and external service requests, as well as work orders generated from service requests, in the gravity collection system. During the 2023 calendar year, the City of Barrie received 140 service requests related to the gravity collection system from the public. They are broken down into the following categories and compared to previous years' data in the table below.

**Table 8 - Service Request Summary**

Type of Service Request	Number of Service Requests				
	2019	2020	2021	2022	2023
Miscellaneous Service Requests	9	10	9	2	0
Sanitary Lateral Problems	42	51	25	10	4
Sewer back up in basement	110	102	85	98	128
Sewer Smell	8	10	10	14	8

## Reporting Section 4.6.7: Alterations/Notices of Modifications Including Status

This section contains the status of all alterations that require Notices of Modifications which were in effect in 2023.

### Pump Stations and Force Mains

No Notices of Modification were issued or in effect.

### Gravity Collection System

There were two (2) Notices of Modification issued. The status of recent Notices of Modification is provided in the table below and copies of notices are contained in Appendix C.

Table 9 - Notices of Modifications & Status

Number	Description	Date Signed	Status as of Dec. 31, 2023	Well Head Protection Area
Not assigned	Construction of local sanitary sewer on John St., Innisfil St., Frederick St., as part of the Brock Park Neighbourhood reconstruction Phase I.	January 6, 2023	Construction complete	WHPA C
Not assigned	Dunlop St. Interchange trunk sanitary relocation.	March 3, 2023	Construction complete	Not available

## Reporting Section 4.6.8: Summary of all Collection System Overflow(s) and Spill(s) of Sewage

### Pump Stations and Force Mains

There were no overflows from pump stations.

### Gravity Collection System

There were six reportable incidents that occurred in the gravity collection system. A summary of events and City responses are provided in the following table:

Table 10 - 2023 Collection System Overflows and Spills

Incident No.	Date and location	Volume or Duration	Sample Results	Disinfection provided	Cause	Adverse impacts and corrective actions
EIR-029-2023	April 18, 2023 200 Wellington Street	Approx. 19-38L	No samples collected	Bleach and water solution on roadway. Vac out impacted catch basin	Blockage was in City infrastructure due to damaged line resulting from construction. During sewer investigation grease build up was discovered downstream.	Wastewater Collection crew attended to clear blockage. The construction company repaired the damaged sewer main.
EIR-043-2023	June 5, 2023 211 Warnica Drive	Approx. 60L	No samples collected	Bleach used to disinfect area	Private property spill at back of public school. Blockage was caused by sticks that had been dropped in a Maintenance hole.	Wastewater Collection crew attended to assist. Flushed blockage and downstream mains and removed impacted soil. Replaced maintenance hole cover with lid with no holes to prevent further vandalism.
EIR-063-2023	August 21, 2023 18 Cundles Road East	10L into storm sewer	TSS – 260mg/L BOD – 430mg/L TP – 9.33mg/L TKN – 118mg/L E.Coli – N/A	No disinfection provided	Private property blockage. Restaurant pouring cooking oil into toilet and drains.	Wastewater Collection crew attended and removed blockage with flusher truck on public side. Plumber called to remove blockage in sanitary piping within building envelope. Sewer Use Investigation conducted. Restaurant, requested to install grease bin, clean out grease trap more frequently, continue with on-going maintenance of great traps and to invest in separate garbage bin to dispose of grease. Corrective actions were verified as completed on follow up inspection.

Incident No.	Date and location	Volume or Duration	Sample Results	Disinfection provided	Cause	Adverse impacts and corrective actions
EIR-162-2023	September 28, 2023 393 Innisfil Street	Unknown	No samples collected	No disinfection provided	Blockage was on private property in Maintenance hole on front lawn. Some sewage spilled onto boulevard. Improperly installed sanitary maintenance hole with no benching.	Wastewater collection crew attended to assist and vacuumed out maintenance hole. Environmental Officer gave instruction to site super to initiate repair as soon as possible to prevent future spill. Maintenance hole should be supervised 24/7 until emergency repairs could be completed. Repairs completed on City side.
EIR-090-2023	October 25, 2023 14 Cedar Point Drive	Between 9 and 18 cubic meters	No samples collected	No disinfection provided	Existing City sanitary infrastructure was discovered to be leaking during the construction and installation of a new maintenance hole.	Contractor removed all impacted soil with a vacuum truck and repaired broken sanitary pipe.

### Reporting Section 4.6.9: Summary of Efforts Made to Reduce Overflows and Spills

In 2023 the Wastewater Operation Branch completed a Wet Weather Flow Assessment as required by the ECA-CLI, which assessed wet weather impacts on the collection system and WwTF, and potential locations of overflows and spills. The Wet Weather Flow Assessment provided insight into the performance of the pump stations during high flow events such as rainfall or snowmelt. The assessment could aid in the planning of future projects or modifications of the gravity system.

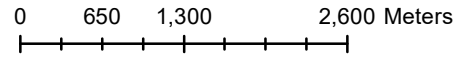
Additionally, the Wastewater Operation Branch performs routine maintenance in the gravity collection system through flushing, annual CCTV inspection, and in-situ repair programs. These programs provide insight into the performance and overall functionality of the sanitary collection system and allow staff to identify and address issues early to ensure that potential spills or overflows are avoided.

## APPENDIX A: Sanitary Flushing and CCTV for 2023





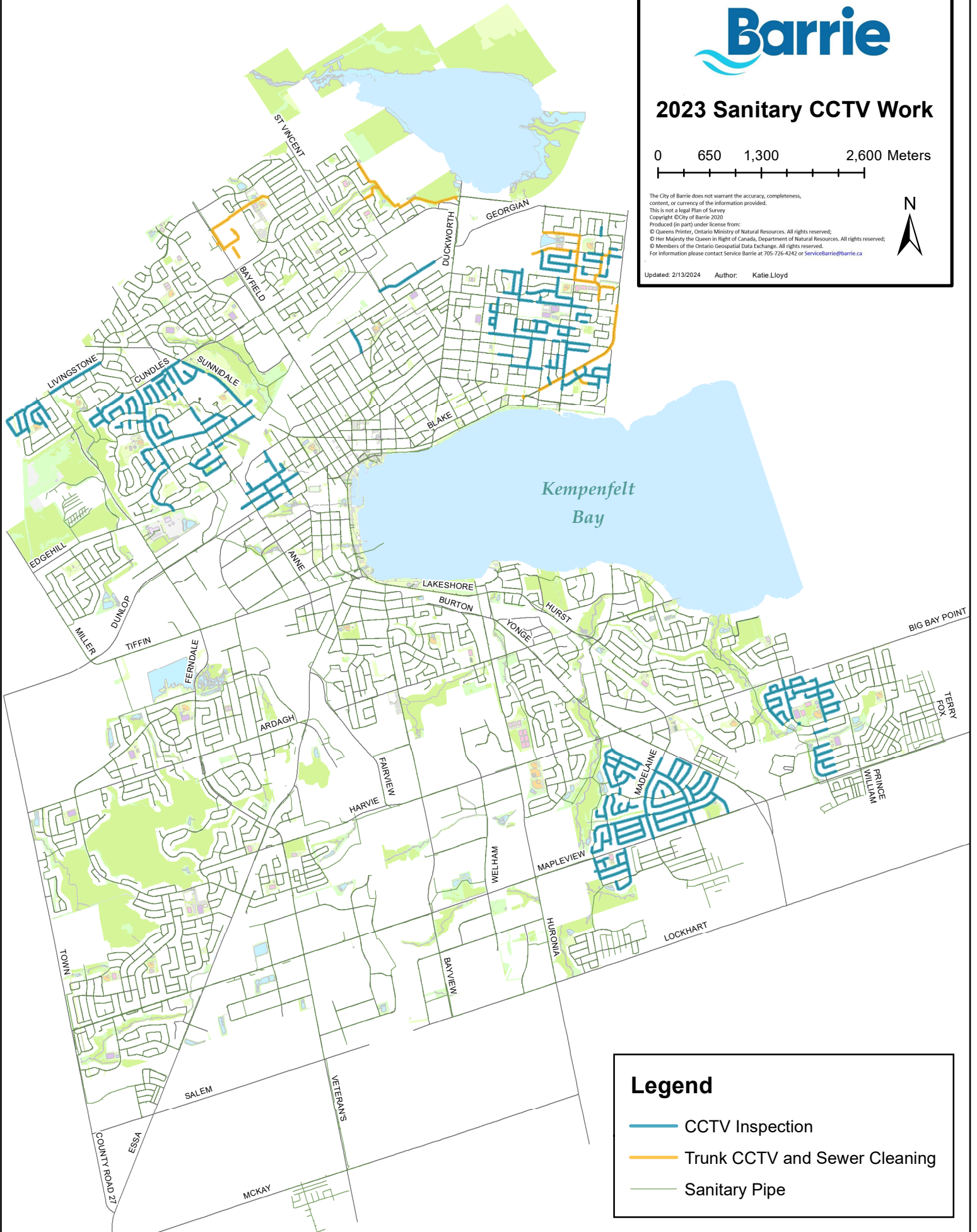
## 2023 Sanitary CCTV Work






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Updated: 2/13/2024 Author: Katie.Lloyd



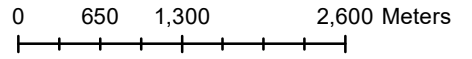
### Legend

-  CCTV Inspection
-  Trunk CCTV and Sewer Cleaning
-  Sanitary Pipe

## APPENDIX B: Sanitary CIPP Relining for 2023



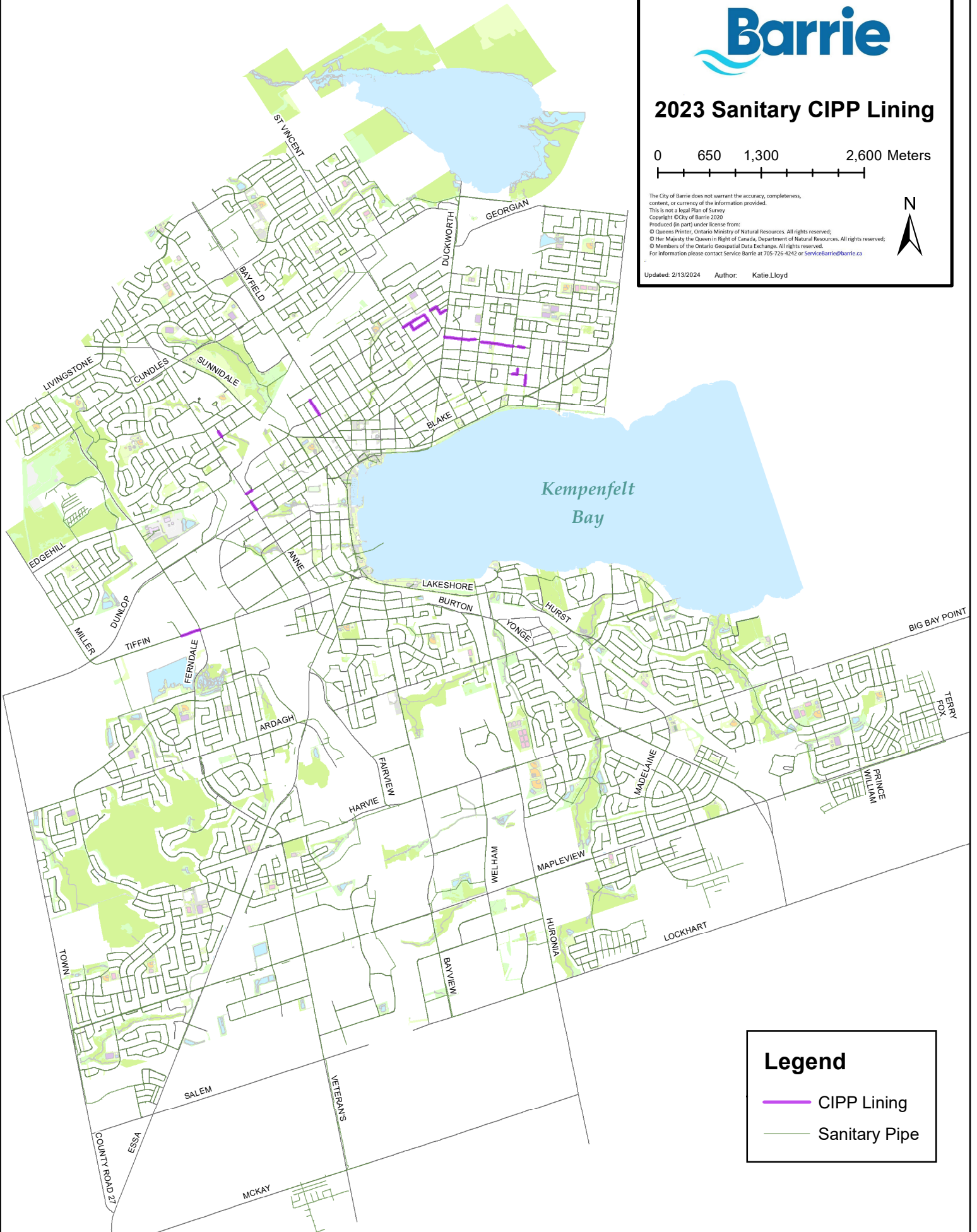
## 2023 Sanitary CIPP Lining



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For information please contact Service Barrie at 705-726-4242 or [ServiceBarrie@barrie.ca](mailto:ServiceBarrie@barrie.ca)



Updated: 2/13/2024 Author: Katie.Lloyd



### Legend

- CIPP Lining
- Sanitary Pipe

## APPENDIX C: Notices of Modifications



Ontario

Ministry of the Environment

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number, issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

Table with 3 columns: ECA Number (5921-ATUCCR), Issuance Date (January 10, 2018), Notice number (01-), ECA Owner (The Corporation of the City of Barrie), Municipality (Barrie)

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:

- 1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:

- 1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Conforms with the Limited Operational Flexibility as per the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate.

Table with 2 columns: Name (Print), PEO License Number, Signature (Adam Kiley), Date (Jan 6, 2023 10:00 EST), Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:

- 1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. These modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the Environmental Assessment Act.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate.

Table with 2 columns: Name of Owner Representative (Print), Owner representative's title (Print), Owner Representative's Signature (Sherry Diemert), Date (Jan 6, 2023 10:08 EST)

**CITY OF BARRIE - ENGINEERING ASSESSMENT FOR  
NOTICE OF MODIFICATION TO SEWAGE WORKS**  
(Requirement of ECA No. 5921-ATUKKR, in accordance with Schedule "B", Section (1))

Project:

Brock Park Neighbourhood Reconstruction Phase I. The project includes the Reconstruction of Fredrick Street (Innisfil to end), Robert Street (Frederick Street to John Street), Innisfil Street (80 West of Frederick to John Street) and John Street (Innisfil Street to Bradford Street).

Description of Project (Summary):

Renewal of existing 200/250mm vitrified clay sanitary sewers and associated residential service connections Installation of approximately 290m of new 200mm dia. PVC sanitary sewer, 262m of new 250mm PVC sanitary sewer, including installation of eight (8), 1200mm dia. maintenance holes, replacement of sanitary service laterals within the municipal right-of-way to each residential property, and connections to the existing sanitary sewer.

This work is being undertaken in order to replace aging infrastructure that has reached the end of its service life. The existing depth of the sanitary sewer is quite shallow and there are frequent sewer lateral backups to several residential homes on Frederick Street. The depth and capacity of the sanitary sewer is also being increased to meet current City of Barrie standards, Wastewater Collection Master Plan as well as to alleviate these on going backups and maintenance concerns.

Documentation Reviewed:

City of Barrie Environmental Compliance Approval document number 5921-ATUKKR, dated January 10, 2018.

City of Barrie contract document 2022-089T – Brock Park Neighbourhood Reconstruction – Phase I Engineering plans forming part of Contract 2022-089T – Neighbourhood Reconstruction – Phase I

Regulatory Requirement:

This work is being carried out in accordance with the Municipal Class Environmental Assessment, October 2000, as amended in 2007 & 2011 as a Schedule A+.

The project meets the Limited Operational Flexibility Criteria for Modification of Sewage Works provided in Schedule B of the Environmental Compliance Approval Number 5921-ATUKKR, dated January 10, 2018.

Technical Criteria Used to Assess the Application:

The following technical criteria were used to assess this application:

- Ministry of the Environment and Climate Change, Design Guidelines for Sewage Works, 2008;
- City of Barrie, Sanitary Sewage Collection System Policies and Design Guidelines, 2017.
- City of Barrie, Wastewater Collection Master Plan, 2019

Issues Identified:

No issues have been identified.

New/Modified Terms and Conditions:

None.

Source Water Protection:

The proposed work is located within WHPA-C.

The City of Barrie's Risk Management Official was consulted and confirms that the proposed works are not a significant drinking water threat and there is an operation and maintenance program in place that includes regular maintenance and inspections.

Recommendation:

The proposed works are recommended for approval under the Limited Operational Flexibility, in accordance with Schedule "B", section (1) and (2).

Peer Review By D. Fuller  
PEO: 100121733  
January 3, 2023










# Sanitary ECA Application EN1318

Final Audit Report

2023-01-06

Created:	2023-01-06
By:	Sheila MacDonald (sheila.macdonald@barrie.ca)
Status:	Signed
Transaction ID:	CBJCHBCAABAA4GKNh6BHkcrZQuzfVJCIOQyOr_8VuwYm

## "Sanitary ECA Application EN1318" History

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-  Signer sherry.diemert@barrie.ca entered name at signing as Sherry Diemert  
2023-01-06 - 3:08:10 PM GMT- IP address: 204.225.69.254
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Signature Date: 2023-01-06 - 3:08:12 PM GMT - Time Source: server- IP address: 204.225.69.254
-  Agreement completed.  
2023-01-06 - 3:08:12 PM GMT





### Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA ON-SITE PRIOR TO THE SCHEDULED IMPLEMENTATION DATE.

<b>Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility</b> <i>(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)</i>		
ECA Number <b>5921-ATUKKR</b>	Issuance Date (mm/dd/yy) <b>01/10/18</b>	Notice number (if applicable)
ECA Owner <b>The Corporation of the City of Barrie</b>		Municipality <b>The Corporation of the City of Barrie</b>

<b>Part 2: Description of the modifications as part of the Limited Operational Flexibility</b> <i>(Attach a detailed description of the sewage works)</i>
<p>Dunlop St. Interchange Trunk Sanitary Relocation - Sanitary sewer modifications for the relocation of a section of an existing trunk sanitary sewer that is in direct conflict with the Ministry of Transportation's (MTO) planned Dunlop Street bridge replacement and widening of Highway 400 in the area. The proposed works include: 180m of 525mm diameter sanitary sewer, 290m of 750mm diameter sanitary sewer and 320m of 900mm diameter sanitary sewer spanning between Hart Drive and Edgehill Drive by open cut and trenchless methods including crossing of Highway 400; Connections to existing sewer sanitary collection system at Hart Drive, Dunlop Street and Edgehill Drive; 350m of 250mm diameter SDR35 PVC local sewer for conveyance of sanitary lateral flow to the new trunk sanitary sewer; 8 (eight) 1,200mm diameter maintenance holes, 1 (one) 1,500mm diameter maintenance hole, 11 (eleven) 1,800mm diameter maintenance holes and 2 (two) 2,400mm diameter maintenance holes; Transfer of sanitary laterals; Decommissioning of section of existing trunk sanitary sewer that is to be relocated including affected connections. Anticipated environmental effect is negligible. Documents reviewed: As Built Records; Dunlop Street Municipal Class C Environmental Assessment Records; Topographical Survey; Subsurface Utility Investigation; Environmental Management Plan; Geotechnical, Hydrogeological and Environmental Investigation Reports (GDR, GER, FIDR, Settlement Monitoring Program Recommendations, Highway 400 Crossing and MTO Right-of-Way Mitigation Report, HDR, HIAR, APU, SAP and SCR); Engineering Design Plans and Specifications.</p>

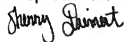
<b>Part 3 – Declaration by Professional Engineer</b>	
<p>I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:</p> <ol style="list-style-type: none"> <li>1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;</li> <li>2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;</li> <li>3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.</li> </ol> <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p>	
Name (Print) <b>Suzie Bizarro</b>	PEO License Number <b>100203780</b>
Signature 	Date (mm/dd/yy) <b>03/03/23</b>
Name of Employer <b>Associated Engineering (Ont.) Ltd.</b>	

### Part 4 – Declaration by Owner

I hereby declare that:

1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print) <b>Sherry Diemert, P. Eng</b>	Owner representative's title (Print) <b>Director of Infrastructure</b>
Owner Representative's Signature 	Date (mm/dd/yy) <b>Mar 8, 2023</b>



**Associated  
Engineering**

GLOBAL PERSPECTIVE.  
LOCAL FOCUS.

Associated Engineering (Ont.) Ltd.  
Suite 200, 165 Commerce Valley Drive West  
Markham, ON L3T 7V8 Canada  
www.ae.ca

March 3, 2023

TEL: 416.622.9502

Rachel Graham  
Engineering Project Manager, Developer & Special Projects Department  
City of Barrie  
70 Collier Street  
Barrie ON  
L4M 4T5

Re: FIN2023-128T - DUNLOP ST. INTERCHANGE TRUNK SANITARY RELOCATION  
ENVIRONMENTAL COMPLIANCE APPROVAL (ECA) NOTICE OF MODIFICATION TO  
SEWAGE WORKS

Dear Ms. Graham,

Associated Engineering (Ont.) Ltd. (Associated) has completed an Engineering Assessment for the modification of a Sanitary Sewer for the Dunlop St. Interchange Trunk Sanitary Relocation Project.

The Engineering Assessment has been completed to support the Notice of Modification to Sewage Works as required under the Schedule B - Limited Operational Flexibility Conditions for the System Wide Environmental Compliance Approval (ECA) for the City of Barrie Sanitary Collection System. ECA File Number is 5921-ATUKKR, issued on January 10, 2018.

I have reviewed the documentation and engineering plans for the project and certify that the design has been completed in conformance with MECP Design Guidelines, adhering to applicable engineering standards and industry best management practices.

Please contact the undersigned should you have any questions or require further information.

Yours truly,

Suzie Bizarro, P.Eng.  
Senior Civil Engineer  
S.B.

Attachments:

- Engineering Assessment
- Notice of Modification to Sewage Works



City of Barrie – Engineering Assessment for Notice of Modification to Sewage Works  
Requirement of ECA No. 5921-ATUKKR, in accordance with Schedule B - Sections 1 and 2

Project EN1469 - Dunlop St. Interchange Trunk Sanitary Relocation  
Contract FIN2023-128T

Description of Project	<p>Sanitary sewer modifications for the relocation of a section of an existing trunk sanitary sewer that is in direct conflict with the Ministry of Transportation's (MTO) planned Dunlop Street bridge replacement and widening of Highway 400 in the area. The proposed works include:</p> <ul style="list-style-type: none"> <li>• 180m of 525mm diameter sanitary sewer, 290m of 750mm diameter sanitary sewer and 320m of 900mm diameter sanitary sewer spanning between Hart Drive and Edgehill Drive by open cut and trenchless methods including crossing of Highway 400.</li> <li>• Connections to existing sewer sanitary collection system at Hart Drive, Dunlop Street and Edgehill Drive.</li> <li>• Approx. 350m of 250mm diameter SDR35 PVC local sewer for conveyance of sanitary lateral flow to the new trunk sanitary sewer.</li> <li>• 8 (eight) 1,200mm diameter maintenance holes, 1 (one) 1,500mm diameter maintenance hole, 11 (eleven) 1,800mm diameter maintenance holes and 2 (two) 2,400mm diameter maintenance holes</li> <li>• Transfer of sanitary laterals.</li> <li>• Decommissioning of section of existing trunk sanitary sewer that is to be relocated including affected connections.</li> </ul>
Documentation Reviewed	<ul style="list-style-type: none"> <li>• As-Built Records</li> <li>• Dunlop Street Municipal Class C Environmental Assessment Records</li> <li>• Topographical Survey</li> <li>• Subsurface Utility Investigation – Level B and A</li> <li>• Environmental Management Plan (EMP) – EN1469 – Highway 400 Dunlop Street Trunk Sanitary Sewer Relocation, City of Barrie, County of Simcoe, dated November 24, 2022 by Palmer</li> <li>• Geotechnical Data Report (GDR) – Dunlop Street Sanitary Trunk Sewer Relocation Project, City of Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.</li> <li>• Geotechnical Engineering Report (GER) – Dunlop Street Sanitary Trunk Sewer Relocation Project, City of Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.</li> </ul>

- Foundation Investigation and Design Report (FIDR) – Dunlop Street Sanitary Trunk Sewer Relocation Project, City of Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.
- Settlement Monitoring Program Recommendations, Technical Memorandum, Dunlop Street Sanitary Trunk Sewer Relocation, Highway 400 Trenchless Crossing, City of Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.
- Highway 400 Crossing and MTO Right-of-Way Mitigation Report – Dunlop Street Sanitary Trunk Sewer Relocation Project, City of Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.
- Hydrogeological Data Report (HDR) – Geotechnical and Hydrogeological Investigations for Dunlop Street Trunk Sewer Relocation, Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.
- Hydrogeological Impact Assessment Report (HIAR) – Geotechnical and Hydrogeological Investigations for Dunlop Street Trunk Sewer Relocation, City of Barrie, Ontario, dated December 16, 2022 by Golder Associates Ltd.
- Assessment of Past Uses (APU) – Geo-Engineering Services for Dunlop Street Trunk Sewer Relocation, City of Barrie, Ontario, dated August 12, 2022 by Golder Associates Ltd.
- Sampling and Analysis Plan (SAP) – Excess Soil Sampling for Dunlop Street Trunk Sewer Relocation, Barrie, Ontario, dated August 12, 2022 by Golder Associates Ltd.
- Soil Characterization Report (SCR) – Relocation of the Dunlop Street Trunk Sewer along Dunlop Street, Cedar Pointe Drive, Edgehill Drive, and Hart Drive, in the City of Barrie, Ontario, dated December 8, 2022 by Golder Associates Ltd.
- Engineering Design Plans and Specifications

Regulatory  
Requirement

- City of Barrie Wastewater Collection Master Plan, 2019 (Municipal Class Environmental Assessment, October 2000, as amended in 2007, 2011 and 2015)
- Lake Simcoe and Conservation Region Conservation Authority (LSRCA): A permit is required from LSRCA for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 179/06). Permit is in the process of been obtained.
- Fisheries and Oceans Canada (DFO) – Initial Letter of Advice has been issued on November 2, 2022.

	<ul style="list-style-type: none"> <li>• Migratory Birds Convention Act – Vegetation removals to occur outside of the breeding bird period.</li> <li>• MECP Permit-to-Take Water (PTTW) – Application has been submitted on December 22, 2020.</li> <li>• City of Barrie Dewatering Discharge Agreement (Sewer Use Bylaw 2021-002) will be obtained prior to construction commencement.</li> </ul>
<p>Technical Criteria Used to Assess the Application</p>	<ul style="list-style-type: none"> <li>• Ministry of the Environment, Design Guidelines for Sewage Works, 2008</li> <li>• City of Barrie Sanitary Sewage Collection System Policies and Design Guidelines</li> </ul>
<p>Issues Identified</p>	<ul style="list-style-type: none"> <li>• Trenchless method required for crossing of Highway 400. Sewer proposed to be installed using microtunneling technology.</li> <li>• Existing sewage flows will be maintained during construction.</li> <li>• Clearance with respect to watermain crossings will be as per MECP procedure F-6-1.</li> <li>• Measures to avoid and mitigate the potential for prohibited effects to fish and fish habitat at Crossing of Dyments Creek by DFO will be implemented.</li> <li>• Vegetation removals will occur within the allowable timing window.</li> <li>• Dewatering quantity will be measured during construction and quality monitoring plan and contingency plans will be implemented in accordance with PTTW and City of Barrie Discharge Agreement requirements.</li> </ul>
<p>New/Modified Terms and Conditions</p>	<p>No new or modified terms and conditions</p>
<p>Source Water Protection</p>	<p>The proposed works are located within the Lake Simcoe and Couchiching/ Black River Source Protection Area. The proposed works fall within a Wellhead Protection Area B. Based on the location of this project and the Vulnerability Score of 6, the proposed works are not considered to be a significant drinking water threat.</p>

#### Recommendation

The proposed sanitary sewer system modifications as part of the design for the Dunlop St. Interchange Trunk Sanitary Relocation meets the criteria for approval under the Limited Operational Flexibility, in accordance with Schedule "B", Section 1 and 2 of the ECA No. 5921-ATUKKR.

# EN1469 - ECA

Final Audit Report

2023-03-08

Created:	2023-03-08
By:	Meghan Thorn (Meghan.thorn@barrie.ca)
Status:	Signed
Transaction ID:	CBJCHBCAABAAQewZLmM_YlgZtR2jTkTr-LuvI9J-xoFR

## "EN1469 - ECA" History

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