Wastewater Collection Systems

Performance Report 2023

Halton REGION

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1.0 Introduction

Halton Region is committed to providing reliable wastewater collection and treatment for more than 651,000 residents in Burlington, Halton Hills, Milton and Oakville. The Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) issued by the Ministry of the Environment, Conservation and Parks (MECP) governs the operation of Halton Region's wastewater (sanitary sewage) collection system. Compliance with regulatory requirements, policies and the permit conditions of the CLI ECA continues to be monitored through the supervisory controls and data acquisition (SCADA) systems, oversight by professional licensed operations staff, an accredited laboratory, and regular reporting mechanisms.

2.0 Collection System Overview

Halton Region's wastewater collection system (WWCS) is comprised of works for the collection and transmission of wastewater, and consists of trunk and local sewers, wastewater pumping stations, forcemains and one in-line storage tank. There are 1,910.94 km of sewers, which include a combination of gravity sewers (1,827.67 km), forcemains (73.35 km), inline storage (0.41 km), and siphons (0.25km). There are 83 wastewater pumping stations (see *Appendix A* for the list of the stations) and approximately 29,288 maintenance holes. The in-line storage tank is located in the Burlington collection system and is comprised of a 3.0 m diameter trunk sewer that is 166 m long and has a vortex flow regulator designed for a peak flow rate of 50 L/s. Refer to *Appendix B* containing an overview map of Halton Region's wastewater collection system.

The numbers provided above consider only mains where 'lifecycle status' = In service and 'maintenance responsibility' = Halton from our GIS.

3.0 Legislated Requirements

The Ontario Water Resource Act governs wastewater collection systems and wastewater treatment plants (WWTP). The owner/operator of each wastewater collection system is required to comply with all the requirements and conditions in the Environmental Compliance Approvals. The CLI ECA for the municipal wastewater works serving Halton Region for the collection and transmission of wastewater include the works servicing the Mid-Halton WWTP, Georgetown WWTP**,** Burlington-Skyway WWTP, Oakville Southeast WWTP, Oakville Southwest WWTP and Acton WWTP. The annual performance report for the wastewater collection systems is submitted to the MECP within 90 days following the end of the period being reported upon. The performance summary is for the period from January 1, 2023 to December 31, 2023, which gives Halton Region a reporting due date of March 31st of the subsequent year.

The following table (Table 3.1) shows the sections of this report that address the specific annual reporting requirements stipulated in Halton Region's WWCS CLI ECA, No. 004-W601.

Table 3.1 – CLI ECA Specific Requirements for Annual Reporting and Corresponding Sections

2023 WWCS Performance Report Sections	Halton Region WWCS ECA No. 004-W601 *Schedule E, Section 4.6*
4.0 Wastewater Collection System Monitoring Programs	4.6.3
5.0 Operational Challenges & Action Taken	4.6.4 & 4.6.7
6.0 Calibration, Maintenance & Repairs	4.6.5 & 4.6.6
7.0 Modification to Wastewater Collection System	4.6.8
8.0 Wastewater Collection System Overflow	4.6.9

4.0 Wastewater Collection System Monitoring Programs

4.1 Regional Flow Monitoring Program

In 2023, Halton Region had a total of 90 flow monitors deployed in strategic locations throughout the collection system. Of the 90 flow monitors, 41 were located at facilities to monitor inflow. All of the flow monitors measure both depth and velocity, from which they derive the flow values, and the trends and data are available on the vendor's web site. Data from the flow monitoring program is used to calibrate the dynamic wastewater model allowing for more precise capacity and loading estimates for infrastructure improvement, recommendations and strategic capital planning. Additionally, approximately six level sensors and one sewer camera were used to monitor locations within the collection system susceptible to surcharging.

The Flow Monitoring Program enables Halton Region to identify key points of capacity constraints in the collection system which are the focus of further root cause analysis studies. The root cause analysis studies aid Halton in identifying appropriate mitigation measures tailored to specific areas and issues.

4.2 Real-Time Control SCADA at Pumping Stations

Supervisory Control and Data Acquisition (SCADA) allows for remote supervisory operation over key system processes. This section outlines the type and degree of monitoring at the pumping stations in the wastewater collection system in terms of flows.

Table 4.1 - Type and degree of wastewater pumping station monitoring

Monitoring Devices	Scenario
Process Equipment	Real-time control and SCADA systems in the sense that they have a Programmable Logic Controller (PLC) installed at the pump station.
	Hardwired control systems, no PLCs and no connection to centralized Human Machine Interface software or a data historian. These stations do have wet well high level alarms wired to a centralized PLC, which is connected to an auto dialer which relays alarms to operations.
Flow Measurement Locations	Physical location, flow meters are installed on the discharge header(s).
	Virtual Flow Meter, no physical flow meter installed. However, they have a PLC and constant speed pumps. At these stations the PLC is used to monitor the changing wet well level, in correlation to the wet well dimensions, to calculate the incoming/outgoing flow to the pump station. This is used to generate a daily total incoming flow.
	No Flow Measurement, a physical or virtual flow meter is not present.

All level measurements are located in the wet well. Most of these measurements are made using ultrasonic level transmitters. Some pumping stations that have a PLC have a pressure sensor (hydrostatic) installed that is connected to the SCADA system.

Operation staff completes SCADA checks every morning during the workweek including checking the alarms. The SCADA checks are recorded in an electronic logbook (E-Log). The system is divided into two separate SCADA checks:

- North System (Milton, Acton, Halton Hills) is checked by the North operation staff
- South System (Burlington and Oakville) is checked by the South operation staff
- Alarms for each system are generated through an auto dialer, which sends the alarm to the appropriate on call operator 24/7 (North or South)

About 92% (76 of 83) of the WWPS have SCADA data related to wet well levels and/or pump discharge; these are used to calculate the flows in and out of the station and pumping capacities.

4.3 CCTV and MH Inspection Program

Halton Region's well-established Wastewater Asset Inspection Program regularly inspects various assets (sewer pipes, laterals and maintenance hole (MH) chambers) that allow early detection of performance and condition-based issues, which then drives the necessary maintenance, remediation or replacement work in the wastewater collection system.

The inspections are completed using closed circuit television (CCTV) and zoom camera technology. When a structural issue is identified in the sewer main, lateral or maintenance hole, it is reviewed and repaired according to the level of risk and priority.

In 2023, a total of 120.9 km of sewer pipe, or approximately 6.3% of the collection system (gravity sewers) were inspected using CCTV. A total of 3,311 or approximately 11.3% of maintenance holes were inspected.

5.0 Operational Challenges and Action Taken

All inquiries and complaints received by Halton Region are logged, categorized and addressed accordingly. Customer service staff resolve many issues over the phone without the need for a work order, and this is usually an indication that the matter is a private issue and/or not related to the public infrastructure. A work order is generated for calls that require follow-up by Halton Region staff. Table 5.1 summarizes the follow-up required from customer calls received and subsequent Work Orders generated.

Table 5.1 - Summary of Work Orders Related to Customer Complaints/Resolutions

Total Number of Service Requests	Category of Work Orders Issued	Number of Work Orders	Description
887	Private Side Sewer Lateral	315	Customer backups due to obstructions such as debris, roots, crack, grease, collapse, belly, offset etc. in private side sewer lateral
	Public Sewer Main Backup	18	Customer backups due to obstruction in sewer main
	Public Side Sewer Lateral	78	Customer backups due to obstruction such as as debris, roots, crack, grease, collapse, belly, offset etc in public side sewer lateral
-	Private Odour	20	Odours caused by private side issues
	Public Odour	3	Odours caused by public side issues such as maintenance holes or sewer mains

Table 5.2 provides a summary of all complaints reported to the MECP in 2023. There were no complaints received in 2023 associated with the Halton Region WWCS.

Table 5.2 - Complaints

WWCS System Name	Date of Event	SAC Incident #	Complaint Type	Location of Event/Event Description		Description of Odour	Start Time	Duration	Description of Event Response & Follow-Up Actions	Associated Documents
				Location of Event	Event Description					
There were no complaints received in 2023										

5.1 Wastewater Pumping Station Bypasses

Bypassing a wastewater pumping station is necessary to carry on some works at the station and/or the forcemain as the wastewater that is generated in its drainage area never stops coming in. Bypassing the pumping station is done using bypass pumping with a capacity that can handle flows in dry and wet-weather flow conditions. In the cases of works to be done in the forcemains, bypassing the station can be achieved through the use of pumping trucks or temporary forcemains. Temporary bypassing of a wastewater pumping station (WWPS) is permitted, and occasionally necessary to accommodate activities related to infrastructure rehabilitation or upgrades following a temporary bypass pumping guide.

During a WWPS bypass, wastewater is temporarily conveyed around the station and back into the collection system. Pumping station bypasses are operated by third party contractors who hold the required qualifications and licenses.

For 2023, there was one (1) bypass involving 10 Side Road Wastewater Pumping Station in Halton Hills (Georgetown). For the 10 Side Road WWPS, bypass pumping was done to bypass the incoming sewer, from last upstream maintenance hole to the wet well from July 26th at 1 PM to August 4th at 8 PM, for future connection to the Eighth Line Trunk Sewer

Overflows from the pumping stations or from the collection system at the point listed under the CLI ECA description are reported directly to the MECP District Office every time an overflow event occurs. The list of overflow events can be found in Section 8 of this report.

5.2 Inflow/Infiltration

Inflow/Infiltration (I&I) is the primary cause of sewer surcharging within the wastewater collection system during severe storm events. Sewer surcharging is caused when sewer capacity limits are exceeded by I&I and depending on the extent of sewer surcharging, wastewater can back up into sewer laterals causing basement flooding. Pumping station and wastewater treatment plant capacity can also be exceeded during severe storms, resulting in overflows of untreated or partially treated wastewater into the environment.

Halton Region's wastewater collection system is designed to accommodate peak inflow and infiltration (I&I) rate of up to 0.286 L/s/ha; however, it is not designed to handle excessive I&I from private and public sources which can significantly increase sewer flows during severe rain events.

I&I from aging public infrastructure such as sewers and manholes is being addressed through Halton Region's Sewer Optimization and Comprehensive Asset Management Programs. The Sewer Optimization Program utilizes the asset inspections (sewer mains, sewer laterals) to identify opportunities to optimize (replace, line or spot repair) the existing wastewater collection system to reduce extraneous flows throughout Halton Region. The Sewer Optimization Program augments the existing State of Good Repair (SOGR) Asset Management Program that replaces pipes at end of their lifecycle that are in poor structural condition. In some cases, sections of pipe identified for replacement under the Sewer Optimization Program are removed and included in the State of Good Repair Program as a separate capital project to allow for coordination with the replacement of other capital work in the same area.

The Voluntary Basement Flooding Prevention Subsidy Program provides financial incentives to residents to undertake work on private property to remove sources of excessive I&I through the disconnection of roof downspouts and weeping tiles or the repair of defective private sewer laterals. Any reduction in I&I is a reduction in the amount of excess wastewater that must be conveyed and treated which saves both energy and chemicals needed in the wastewater treatment process. This aligns with Halton Region's Climate Action Plan goals.

Halton Region's wastewater collection system continues to function well during normal dry weather conditions and typical rain events.

The collective impact of the public sewer optimization work and private side I&I remediation measures completed to date has led to an overall decrease in storm related I&I from entering Halton Region's wastewater collection system which reduces the occurrence of system and WWPS overflows.

As part of the Region's day-to-day operations, staff will continue to expand the use of technology to monitor the performance of the wastewater collection system, identify opportunities and areas of improvement, and through the established asset management program ensure that the wastewater collection system is maintained in a state-of-good repair.

Halton Region's progressive program to subsidize the disconnection of private side sources of excessive I&I in concert with the annual capital rehabilitation, repair and replacement program will also continue to lead to improvements in system resiliency through removal of excessive I&I at the source.

In addition, Halton Region will continue to collaborate with the Local Municipalities and Conservation Authorities to share information, identify opportunities and coordinate flooding reduction initiatives.

6.0 Calibrations, Maintenance & Repairs

6.1 Calibrations

As per Halton Region's Preventative Maintenance (PM) Plan, all monitoring equipment is regularly tested (signals are verified). Operations staff test the high level float/Milltronics high level floats, and check Milltronics (ultrasonic level transmitter) parameters (zero and span) at the wastewater pumping stations once per year and these are confirmed through SCADA. The electronic signals in the station flowmeters are checked annually.

The flow monitors utilized in the Regional Flow Monitoring Program are rented and installed by sub-contractor in the collection system and are calibrated on a regular basis.

6.2 Maintenance and Repairs of Linear Infrastructure

The Sewer Assessment and Cleaning Program includes the scheduled two or four-year program for local wastewater sewers based on the material and diameter of the sewer pipe. Trouble sections are cleaned on a regular basis upwards of several times per month. A 'problem section' sewer cleaning program was established in 2020 to monitor and optimize sewer cleaning less frequently than bi-monthly on an as-needed basis. In addition, the Asset Management Program includes regular monitoring and maintenance work. The following table provides a summary of maintenance and repair activities performed last year.

Table 6.1 – Maintenance/Repair Activities for 2023

Description	Metric
Length of Sewer Flushed	196,271.4m
Length of Sewer Scanned/Assessed	572,978.29 m (ACOUSTIC 452,035.69m) + (CCTV 120,942.6m)
Length of Sewer Trouble/Problem Sections Cleaned	59,497m
Length of Sewer Lined /Replaced /Spot Repaired	11,707m
Number of Maintenance Holes Rehabilitated	101 (12 Rebuild + 89 Repair)

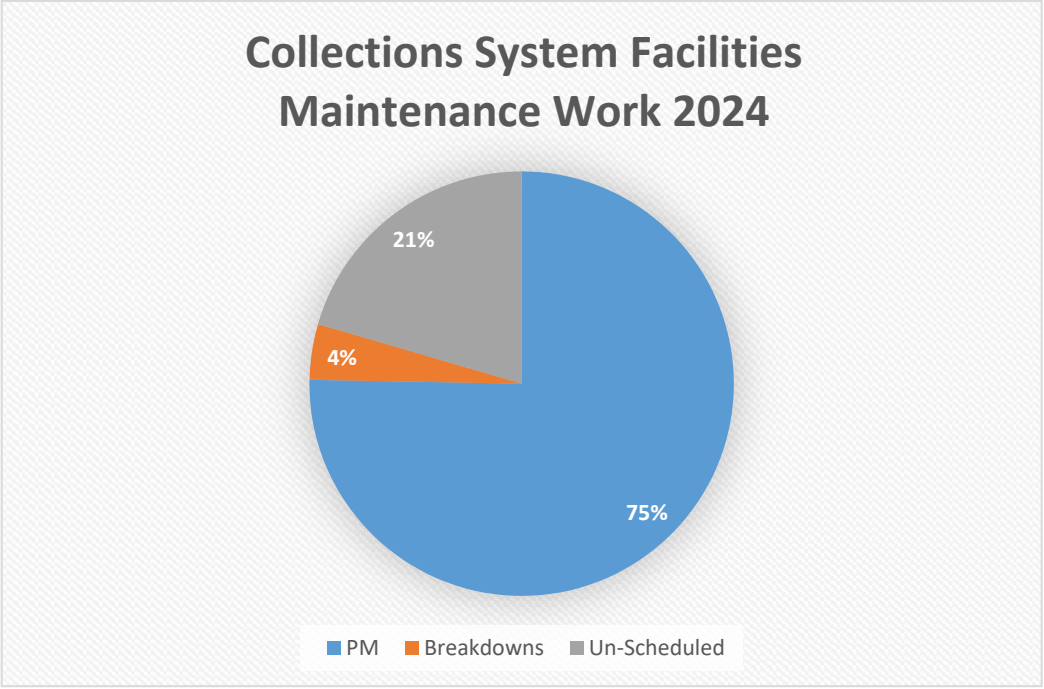
6.3 Maintenance and Repairs of the Collection System Facilities

Halton Region maintains and operates 83 WWPSs. In 2023, all stations had a wet well clean out performed by a third party. Facilities maintenance work is comprised of three components:

- Breakdowns: Work that's required to restore an asset to physical operation after an unplanned stop – urgent and immediate support required – will interrupt maintenance schedule;
- Scheduled: Work undertaken regularly to maintain the equipment in good working order; and
- Un-scheduled: Not a breakdown but if not corrected in 24/48 hours or within the current week could result in a breakdown - urgent and will interrupt current week schedule.

Figure 1 presents the breakdown of the maintenance work completed in 2023. Approximately 79% of the maintenance work was completed internally and 21% was completed by a third party contractor.

Figure 1: Collection System Facilities Maintenance Work 2023



7.0 Modifications to Wastewater Collection Systems

Halton Region submitted the following modifications in Table 7.1 to the MECP under the Transfer of Review (TOR) Program. The TOR Program became obsolete upon the issuance of the new Halton Region WWCS CLI ECA on September 27, 2022. There were no direct ECA submissions submitted during the reporting period.

Table 7.1 – TOR Modifications to Works

Modification Type	Project Number	Project Description	Status
TOR	PR-3010	Sanitary sewer replacement on Churchill Ave, Oakville	Under Construction
TOR	DH-1029	Sanitary sewer extension on James St, Halton Hills	Tender/Design
TOR	PR-3126	Drumquin Wastewater Pumping Station, Milton	Under Construction
TOR	PR-3156	Pumping Station Upgrade, Bridgeview WWPS, Burlington	Under Construction

In Tables 7.2 and 7.3, there are three types of modifications to Wastewater Works:

- Notice of Modification (NOM) under the former Mid-Halton WWCS ECA
- Form SS1 - Record of Future Alteration Authorized for Separate Sewers/Nominally Separate Sewers/Forcemains (new WWCS CLI ECA)
- Form SS2 - Record of Future Alteration Authorized for Components of the Municipal Sewage Collection System (new WWCS CLI ECA).

Prior to the issuance of the new Halton Region WWCS CLI ECA, NOMs were submitted to the MECP's Water Supervisor.
Subsequent to issuance of the Halton Region WWCS CLI ECA, NOMs were replaced with Form SS1s and Form SS2s which are now kept on file, as a result of pre-authorized modification provisions in the ECA for the Wastewater Works. The status report on the implementation of the modifications to Wastewater Works and a hyperlink to a copy of each modification is provided in the table below.

Table 7.2 - Status Report for Alterations to the Halton Region WWCS Authorized in 2023

Project Number	Form	Project Description	Date Signed	Status	Link to Form
DO-1058	Form SS1	Sanitary Sewers in Bronte Green Subdiv, Oakville (near Regional Hq)	22-Feb-2023	Under Construction	ECA-SS1-DO1058-Sanitary Sewer in Bronte Green Region's Lands-2023
DM-1058	Form SS1	Sanitary Sewers in Varga Phase 2, Milton	24-Mar-2023	Under Construction	ECA-SS1-DM1058-Sanitary Sewer in Varga Phase 2-Milton-2023
PR-3346	Form SS1	Sanitary Sewers Replacement, Reid Crt, Gower Crt, McIntyre Cres,Todd Rd, Temple Rd-Georgetown	23-May-2023	Under Construction	ECA-SS1-PR3346-Reid Crt, Gower Crt, McIntyre Cres, Todd Rd, Temple Rd-Georgetown-2023
DO-1093	Form SS1	Sanitary Sewers in ARGO (Morrison Creek), Oakville	1-Jun-2023	Completed	ECA-SS1-DO1093-ARGO (Morrison Creek)-Oakville-2023
DM-1051	Form SS1	Sanitary Sewers in Pony Pines Ph3, Milton - split into Ph 3A (DM-1051) and 3B (DM-1088)	6-Jun-2023	Under Construction	ECA-SS1-DM1051-Pony Pines (Phase 3)-Milton-2023
PR-3152	Form SS1	Sanitary Sewers on Ontario St S and Woodward Ave WM projects, Milton	15-Jun-2023	Under Construction	ECA-SS1-PR3152A-Ontario St+Woodward Ave-Milton-2023
PR-3348	Form SS1	Sanitary Trunk Sewer on Eighth Ln, 10 SR & Mountainview, Halton Hills (Georgetown)	15-Jun-2023	Under Construction	ECA-SS1-PR3348-Georgetown South Sanitary Trunk-Georgetown-2023
DM-1080	Form SS1	Sanitary Trunk Sewer on Savoline Blvd/Fiddlehead Ln., Milton	19-Jun-2023	Under Construction	ECA-SS1-DM1080-Savoline Blvd+Fiddlehead Ln,Pony Pines (Phase 3+4)-Milton-2023
DM-1084	Form SS1	Sanitary Trunk Sewer on Savoline Blvd/LSL Ave Intersection (Ex. SMh 22A to SMh 63A), Milton	26-Jun-2023	Tender/Design	ECA-SS1-DM1084-Savoline Trunk (Fieldgate West)-Milton-2023

DO-1101	Form SS1	Sanitary Sewers in Fernbrook Homes Subd, Oakville	14-Jul-2023	Completed	ECA-SS1-DO1101-Fernbrook Homes-Oakville-2023
DB-1024	Form SS1	Sanitary Sewers in Salotto Millcroft Park Drive, Burlington	20-Jul-2023	Completed	ECA-SS1-DB1024-Salotto Millcroft Park Dr-Burlington-2023
DO-1096	Form SS1	Sanitary Sewers in Timsin Phase 2 Subd., Oakville	21-Jul-2023	Completed	ECA-SS1-DO1096-Timsin Phase 2 Subdivision-Oakville-2023
DM-1052	Form SS1	Sanitary Sewers in Pony Pines Phase 4, Milton	21-Jul-2023	Tender/Design	ECA-SS1-DM1052-Pony Pines Phase 4-Milton-2023
DO-1099	Form SS1	Sanitary Sewer Extension on Glenashton Dr, Oakville	23-Aug-2023	Tender/Design	ECA-SS1-DO1099-315 Glenashton Drive-Oakville-2023
DO-1071	Form SS1	Sanitary Sewers in Oakville Green Development - Phase 1, Oakville	24-Aug-2023	Tender/Design	ECA-SS1-DO1071-Oakville Green Development(Phase 1)-Oakville-2023
DM-1083	Form SS1	New sanitary trunk sewer on Savoline Blvd to service Fieldgate West Limited Subd, Milton	5-Sep-2023	Tender/Design	ECA-SS1-DM1083-Savoline Trunk (Fieldgate West)-Milton-2023
DB-1022	Form SS1	Plains Road E., Wastewater main extension, (National Homes),Burlington	11-Sep-2023	Tender/Design	ECA-SS1-DB1022-Wastewater main extension(National Homes)-Burlington-2023
DO-1116	Form SS1	Abandonment of sewer and service connection to North Park Development/Town of Oakville Recreation Centre Project, Oakville	29-Sep-2023	Tender/Design	ECA-SS1-DO1116-North Park Development 3070 Neyagawa Boulevard-Oakville -2023
PR-2668A	Form SS1	Installation of 450mm Sanitary Sewer in 1200mm tunnel on Britannia Road from	29-Sep-2023	Under Construction	ECA-SS1-PR2668A-Installation of SS in tunnel on Britannia Rd. from Trafalgar Rd. to 580+/- East of Trafalgar Rd.-Milton-2023

		Trafalgar Road to 580+/- east of Trafalgar Road, M			
DM-1075	Form SS1	New sanitary sewers in Mattamy Garito Barbuto, Milton	10-Oct-2023	Under Construction	ECA-SS1-DM1075-Sanitary Sewers in Mattamy Garito Barbuto-Milton-2023
DO-1095	Form SS1	New Sanitary Sewers servicing Digram Development Subd, Oakville	19-Oct-2023	Completed	ECA-SS1-DO1095-Digram Developments-Oakville-2023
DM-1068	Form SS1	New Sanitary Sewers servicing Fieldgate West Subdivision, Milton	30-Nov-2023	Tender/Design	ECA-SS1-DM1068-Fieldgate West Subdivision-Milton-2023
DM-1076	Form SS1	New Sanitary Sewers servicing Mount Pleasant Way Extension (Escarpment Business Community West Phase III), Milton	13-Dec-2023	Tender/Design	ECA-SS1-DM1076-Mount Pleasant Way Extension (Escarpment Business Community West Phase III)-Milton-2023
PR-3119B	Form SS1	1500mm Trunk Sewer on Britannia Road, Milton	20-Dec-2023	Under Construction	ECA-SS1-PR3119B-1500mm Trunk Sewer on Britannia Road-Milton-2023

It was noted that no projects were determined to pose a significant threat to sources of drinking water in 2023.

Table 7.3 – Status Report for Alterations to the Halton Region WWCS Authorized prior to 2023

Name of System	Project Number	Form	Project Description	Date Signed	Status
Halton Region WWCS	DO-1086	Form SS1	Sanitary sewers in ARGO Subd (Joshua Creek), Oakville	13-Dec-22	Completed
Halton Region WWCS	DO-1088	Form SS1	Sanitary Sewers in Redoak Capoak Subdivision, Oakville	9-Dec-22	Completed
Halton Region WWCS	PR-2700C	Form SS2	SCADA Implementation for Gardiner Dr WWPS	28-Nov-22	Completed
Halton Region WWCS	PR-2700C	Form SS2	SCADA Implementation for Gollop Cres WWPS	28-Nov-22	Under Construction
Halton Region WWCS	PR-2700C	Form SS2	SCADA Implementation for Lakeview WWPS	28-Nov-22	Completed
Halton Region WWCS	PR-2700C	Form SS2	SCADA Implementation for Lynden Circle WWPS	28-Nov-22	Under Construction
Halton Region WWCS	PR-2700C	Form SS2	SCADA Implementation for Moore Park WWPS	28-Nov-22	Under Construction
Halton Region WWCS	DO-1084	Form SS1	Sanitary Sewers in Dunoak Phase 2, Oakville	31-Oct-22	Completed
Halton Region WWCS	PR-2907	Form SS1	Sanitary sewers on McGeachie Dr, Milton	24-Oct-22	Under Construction
Mid-Halton WWCS	DM-1074	NOM	Sanitary Sewers in Bayview Lexis Ph2, Milton	27-Sep-22	Under Construction
Mid-Halton WWCS	DH-1033	NOM	Sanitary Sewers in Hornby Lands Shared Services, Halton Hills	26-Aug-22	Completed
Mid-Halton WWCS	DM-1056	NOM	Sanitary Sewers in Fieldgate Mil Con Three, Milton	4-Jul-22	Under Construction
Mid-Halton WWCS	DO-1074	NOM	Sanitary Sewers on Graydon Banning Subdivision	24-May-22	Completed
Mid-Halton WWCS	DM-1063	NOM	Sanitary sewers in Oxford Derry Ph1, Milton	14-Apr-22	Completed

Mid-Halton WWCS	DO-1078	NOM	Sanitary sewers in Bressa Subd Phase4, Oakville	12-Apr-22	Completed
Mid-Halton WWCS	DM-1064	NOM	Sanitary sewers on Kennedy Circle (East) Ext, Milton	18-Mar-22	Under Construction
Mid-Halton WWCS	DO-1073	NOM	Sanitary sewer extension of Arbor Memorial, Oakville	28-Oct-21	Tender/Design
Burlington Skyway WWCS	DB-1018	Form 2	Sanitary sewers in National Homes (Brant St), Burlington	26-Oct-21	Completed
Mid-Halton WWCS	DO-1072	NOM	Sanitary sewers in EMGO North Phase 2 Subdiv, Oakville	28-Jun-21	Completed
Burlington Skyway WWCS	DB-1017	Form 2	Sanitary sewer extension on Georgina Crt, Burlington	24-Jun-21	Completed
Mid-Halton WWCS	PR-3126	NOM	Sanitary trunk main on Eighth Ln, Halton Hills & Milton	21-May-21	Under Construction
Mid-Halton WWCS	DM-1060	NOM	Sanitary sewer on Main St E, Milton	1-Apr-21	Completed
Mid-Halton WWCS	DO-1025	NOM	Sanitary sewers servicing Humberstone Subdiv, Halton Hills	22-Mar-21	Completed
Burlington Skyway WWCS	PR-3244	Form 1	Pumping station upgrade, Paletta Gardens WWPS, Burlington	21-Dec-20	Under Construction
Burlington Skyway WWCS	PR-3245	Form 1	Pumping station upgrade, Bromley Park WWPS, Burlington	21-Dec-20	Under Construction
Mid-Halton WWCS	DH-1028	NOM	Sanitary sewer connect to Steeles from NADC, Halton Hills	16-Jul-20	Under Construction
Burlington Skyway WWCS	DB-1011	Form 2	Sanitary sewer extending from Bird Boulevard, Burlington	27-Aug-19	Tender/Design

8.0 Discharge Events

Some of the wastewater pumping stations listed in Appendix A are equipped with stand-by power generators to ensure critical equipment can continue to operate in the event of a power failure.

Wastewater collection system related events, such as observed overflows, spills, customer complaints resulting from odour or noise, or any equipment taken out of service, are reported to the MECP in accordance with ECA requirements. The On-Call Public Health Inspector is notified if an overflow occurs at one of the pumping stations listed in the Wastewater Stations Event Reporting Health Risk Escalation Table (Q-WWS-LI-WWSTN-3297). Halton Region has documented work instructions, titled Wastewater Stations Event Reporting (Q-WWS-WI-WWSTN-3311) and Wastewater Linear Spills Event Reporting (Q-WWS-WI-WWLNR-4601), that cover the regulatory requirements and best practices for reporting events. Table 8.1 provides the summary of all overflow, spill or abnormal discharge events in the reporting year.

Table 8.1 – Summary of 2023 Overflow, Spill or Abnormal Discharge Events

WWCS System Name	Date	SAC Incident #	Type	Location of Event	Disinfection	Receiver Name	Start Time	Duration	Volume (ML)	Volume Determination	Cause Code	Samples Taken
Burlington-Skyway WWCS	January 26, 2023	1-2GYK8N	Overflow	Unsworth Ave WW Pump Station B15	NA	Grindstone Creek/Hamilton Harbour	10:10	1 hr 40 min	4.2	Estimated	3,6	Yes
Burlington-Skyway WWCS	April 1, 2023	1-3467BQ	Overflow	Paletta WW Pump Station B10	NA	Lake Ontario	3:30	1 hr	444	Estimated	1,2	Yes
Burlington-Skyway WWCS	April 5, 2023	1-34R2RD	Overflow	Paletta WW Pump Station B10	NA	Lake Ontario	18:41	1 hr 57 min	562.2	Estimated	1,2	Yes
Georgetown WWCS	June 28, 2023	1-3L4DAK	Spill	Inlet pipe between MH27872 and WWPS100	N/A	The groundwater entered the wet well of WWPS100	13:35	4 hrs	Unknown	-	8	-

Skyway WWCS	July 29, 2023	1-3PJBG0	Spill	2268 Sunnydale Drive, Burlington - Fisher Elephant Trunk in Easement behind address indicated	N/A	Lake Ontario	11:00	11 hrs	Unknown	Estimated	1,3	No
Burlington-Skyway WWCS	July 29, 2023	1-300ZDC	Overflow	Paletta WW Pump Station B10	NA	Lake Ontario	11:08	22 mins	19	Estimated	1	Yes
Skyway WWCS	August 3, 2023	1-3PCSQ1	Spill	300 Plains Rd W, Burlington	N/A	Storm Catch basin on Private Property	-	-	small trickle, 2 L/min (unknown time frame)	Estimated	5	No

Halton Region uses best efforts to collect a representative sample consisting of one grab sample from the wastewater pumping station to have analyzed by an accredited laboratory. Appendix C provides all lab sample results.

Appendix A – List of Wastewater Pumping Stations

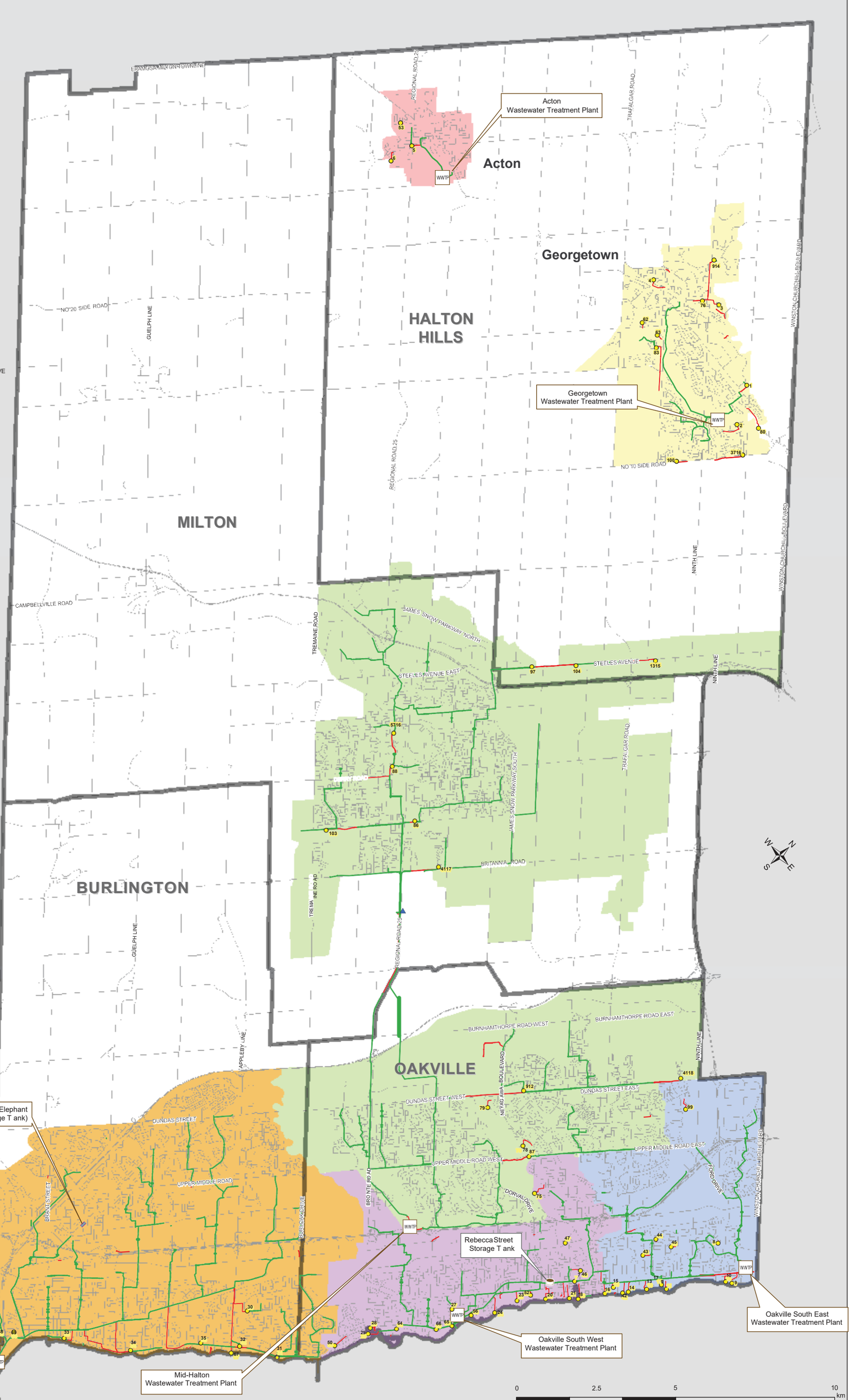
Name	Town or City	Drainage Area
10 Sideroad PS	Georgetown (Halton Hills)	Georgetown
Agnes Street PS	Acton (Halton Hills)	Acton
Appleby Place PS	Burlington	Burlington Skyway
Argyle Drive PS	Oakville	Oakville Southeast
Armstrong Avenue PS	Georgetown (Halton Hills)	Georgetown
Bayshore Boulevard PS	Burlington	Burlington Skyway
Bel Air Estates PS	Oakville	Oakville Southeast
Belhaven PS	Burlington	Burlington Skyway
Bellview Street PS	Burlington	Burlington Skyway
Belvedere Drive PS	Oakville	Oakville Southwest
Birch Hill Lane PS	Oakville	Oakville Southwest

Name	Town or City	Drainage Area
Bridgeview PS	Burlington	Burlington Skyway
Britannia Rd PS	Milton	Mid-Halton
Bromley Park PS	Burlington	Burlington Skyway
Bronte Yacht Club PS	Oakville	Oakville Southwest
Cardinal Avenue PS	Burlington	Burlington Skyway
Carrington Place PS	Oakville	Oakville Southeast
Cedarberry Court PS	Oakville	Oakville Southeast
Chancery Lane PS	Oakville	Oakville Southeast
Chartwell Road PS	Oakville	Oakville Southeast
Cindebarke Terrace PS	Georgetown (Halton Hills)	Georgetown
Coronation Park PS	Oakville	Oakville Southwest
Cumnock Crescent PS	Oakville	Oakville Southeast
Danforth Place PS	Burlington	Burlington Skyway
Double Ten PS	Georgetown (Halton Hills)	Georgetown
Dundas East PS	Oakville	Mid-Halton
Dundas PS	Oakville	Mid-Halton
Edgewater Crescent PS	Burlington	Burlington Skyway
Elizabeth Gardens PS	Burlington	Burlington Skyway
Ennisclare Drive PS	Oakville	Oakville Southeast
First Street PS	Oakville	Oakville Southeast
Fulton St PS	Milton	Mid-Halton (Milton)
Gairloch Gardens PS	Oakville	Oakville Southeast
Garden Trails PS	Burlington	Burlington Skyway
Gardiner Drive PS	Georgetown (Halton Hills)	Georgetown
Glen Williams PS	Georgetown (Halton Hills)	Georgetown
Gollop Crescent PS	Georgetown (Halton Hills)	Georgetown
Grandview Avenue PS	Burlington	Burlington Skyway
Halton Hills #1 PS	Georgetown (Halton Hills)	Mid-Halton
Halton Hills #2 PS	Georgetown (Halton Hills)	Mid-Halton
Halton Hills #3 PS	Georgetown (Halton Hills)	Mid-Halton
Hixon Street PS	Oakville	Oakville Southwest
Indian Road PS	Burlington	Burlington Skyway

Name	Town or City	Drainage Area
John Street PS	Georgetown (Halton Hills)	Georgetown
Joshua Creek PS	Oakville	Oakville Southeast
Junction St PS	Burlington	Burlington Skyway
Kingham PS	Acton (Halton Hills)	Acton
La Salle Park PS	Burlington	Burlington Skyway
Lakeview PS	Acton (Halton Hills)	Acton
Lakewood Drive PS	Oakville	Oakville Southwest
Laurier Avenue PS	Milton	Mid-Halton
Lynden Circle PS	Georgetown (Halton Hills)	Georgetown
Main Street PS	Georgetown (Halton Hills)	Georgetown
Marine Drive PS	Oakville	Oakville Southwest
Midblock PS	Milton	Mid-Halton
Moore Park PS	Georgetown (Halton Hills)	Georgetown
Morrison Heights PS	Oakville	Oakville Southeast
Navy Street PS	Oakville	Oakville Southwest
Northshore Boulevard PS	Oakville	Burlington Skyway
Norval PS	Georgetown (Halton Hills)	Georgetown
Oaklands Park PS	Burlington	Burlington Skyway
Overton Place PS	Oakville	Oakville Southwest
Paletta Gardens PS	Burlington	Burlington Skyway
Pinedale PS	Burlington	Burlington Skyway
Providence Road PS	Oakville	Mid-Halton
Raymar Place PS	Oakville	Oakville Southeast
Riverbank Way PS	Oakville	Mid-Halton
Riverside Drive PS	Oakville	Oakville Southwest
Roseland Creek PS	Burlington	Burlington Skyway
Sheldon Creek PS	Oakville	Oakville Southwest
Shepherd Road PS	Oakville	Oakville Southwest
Shorewood Place PS	Oakville	Oakville Southwest
Sixteen Mile Creek PS	Oakville	Mid-Halton
Spring Garden Road PS	Burlington	Burlington Skyway
Stillwater Crescent PS	Burlington	Burlington Skyway

Name	Town or City	Drainage Area
Stirling Drive PS	Oakville	Oakville Southwest
Tremaine Road PS	Milton	Mid-Halton
Unsworth Avenue PS	Burlington	Burlington Skyway
Walker Street PS	Oakville	Oakville Southwest
Water Street PS	Oakville	Oakville Southwest
Weaver Avenue PS	Oakville	Oakville Southeast
West River PS	Oakville	Oakville Southwest
Westdale Road PS	Oakville	Oakville Southwest

Halton Region Wastewater Collection and Facilities



Pumping Station

RMOHID, PS NAME, ADDRESS	RMOHID, PS NAME, ADDRESS
1, ARMSTRONG AVE PS, 303A ARMSTRONG AV	62, GARDINER DR PS, 21 GARDINER DR
2, GOLLOP CR PS, 14 GOLLOP CR	63, CINDEBARKE TERR PS, 10 CINDEBARKE TERR
3, LYNDEN CL PS, 40 LYNDEN CL	64, MARINE DR PS, 2285 MARINE DR
4, MOORE PARK PS, 39 MOORE PARK CR	65, CORONATION PK PS, 1420 LAKESHORE RD WEST
5, AGNES ST PS, 11 AGNES ST	66, BELVEDERE DR PS, 60 BELVEDERE DR
6, KINGHAM PS, 242 KINGHAM RD	67, APPLEBY PL PS, 105 APPLEBY PL
7, WATER ST PS, 130 WATER ST	68, INDIAN RD PS, 447 INDIAN RD
8, CEDARBERRY CRT PS, 2262 CEDARBERRY CT	69, BELLVIEW ST PS, 1189 BELLVIEW ST
9, CARRINGTON PL PS, 2352 CARRINGTON PL	70, STILLWATER CRES PS, 535 STILLWATER CR
10, CHANCERY LN PS, 2288 CHANCERYLN	71, UNSWORTH AVE PS, 1094 UNSWORTH AV
11, ENNISCLARE DR PS, 8 ENNISCLARE DR	72, BELHAVEN PS, 131 NORTHSHORE BV EAST
13, BEL AIR ESTATES PS, 54 BEL AIR DR	73, BAYSHORE BLVD PS, 614 BAYSHORE BV
14, ARGYLE DR PS, 1034 ARGYLE DR	74, GRANDVIEW AVE PS, 761 GRANDVIEW AV
15, RAYMAR PL PS, 59 RAYMAR PL	75, OVERTON PL PS, 250 OVERTON PL
16, FIRST ST PS, 20 FIRST ST 17, GAIRLOCH GARDENS PS, 1302 LAKESHORE RD WEST	76, JOHN ST PS, 68 JOHN ST 77, BRIDGEVIEW PS, 1261 SPRING GARDENS RD
18, NAVY ST PS, 2 NAVY ST	78, PROVIDENCE RD PS, 2175 PROVIDENCE RD
20, LAKEWOOD DR PS, 231 LAKEWOOD DR	79, RIVERBANK WAY PS, 1164 RIVERBANK WY
21, WALKER ST PS, 10 WALKER ST	80, NORVAL PS, 464 GUELPH ST
23, BIRCHHILL LN PS, 39 BIRCHHILL LN	83, MAIN ST PS, 140 ARBORGLEN DR
24, WESTDALE RD PS, 135 WESTDALE RD	86, MIDBLOCK ARTERIAL PS, 8255 LOUIS ST LAURENT AVE
27, HIXON ST PS, 1334 HIXON ST	87, 16 MILE CREEK PS, 280 OLD UPPER MIDDLE RD
28, BRONTE YACHT CLUB PS, 2505 LAKESHORE RD WEST	88, LAURIER AVE PS, 509 COMMERCIAL ST
29, WEST RIVER ST PS, 51 WEST RIVER ST	92, GARDEN TRAILS PS, 547 GENISTA DR
30, PINEDALE PS, 5151 NEW ST	97, HALTON HILLS PS 1, 11429 STEELES AV
31, ELIZABETH GARDENS PS, 5390 LAKESHORE RD	99, JOSHUA CK PS, 2313 ROCK POINT DRIVE
32, BROMLEY PS, 5061 LAKESHORERD	100, 10 SIDERD PS, 14515 10 SIDE ROAD
33, JUNCTION PS, 2137 LAKESHORERD	103, TREMAINE RD PS, 6300 LOUIS ST LAURENT AVE
34, ROSELAND CREEK PS, 3241 LAKESHORERD	104, HALTON HILLS PS 2, 12420 STEELES AV
35, PALETTA GARDENS PS, 4281 LAKESHORERD	912, DUNDAS STATION PS, 345 DUNDAS ST W
37, EDGEWATER CR PS, 604 EDGEWATER CR	914, GLEN WILLIAMS PS, 509A MAIN ST
38, SPRING GARDEN RD PS, 834 SPRING GARDENS RD	1315, HALTON HILLS PS 3, 14234 STEELES AV
40, OAKLANDS PARK PS, 89 OAKLANDS PARK CT	3716, DOUBLE TEN, 10010 TENTH LINE
41, DANFORTH PL PS, 836 DANFORTH PL	4117, BRITANNIA RD WWPS, 8875 BRITANNIA RD W
42, CHARTWELL RD PS, 16 CHARTWELL RD	4118, DUNDAS EAST PS, 1437 DUNDAS STREET EAST
43, MORRISON HEIGHTS PS, 1152 MORRISON HEIGHTS DR	5716, FULTON ST PS, 161 FULTON ST
44, CUMNOCK CR PS, 1271 CUMNOCK CR	
45, WEAVER AVE PS, 1380 WEAVER AV	
46, RIVERSIDE DR PS, 265 RIVERSIDE DR	
47, SHEPHERD RD PS, 10 SHEPHERD RD	
48, CARDINAL AVE PS, 305 CARDINALAV	
50, SHELDON CK PS, 3251 LAKESHORE RD WEST	
52, SHOREWOOD PL PS, 62 SHOREWOOD PL	
53, LAKEVIEW PS, 104 ELIZABETH DR	
54, LA SALLE PARK PS, 59 OAKLAND PARK CT	
56, STIRLING DR PS, 1207 STIRLING DR	
57, NORTHSHORE BV PS, 374 NORTHSHORE BV	

Facilities

Wastewater Treatment Plant

NAME, ADDRESS
ACTON WASTEWATER TREATMENT PLANT, 202 CHURCHILL RD. S.
BURLINGTON SKYWAY WASTEWATER TREATMENT PLANT, 1125 LAKESHORE RD.
GEORGETOWN WASTEWATER TREATMENT PLANT, 275 MOUNTAINVIEW RD. S.
MID-HALTON WASTEWATER TREATMENT PLANT, 2195 NORTH SERVICE RD. W.
OAKVILLE SOUTHEAST WASTEWATER TREATMENT PLANT, 2477 LAKESHORE RD. E.
OAKVILLE SOUTHWEST WASTEWATER TREATMENT PLANT, 1385 LAKESHORE RD. W.

Storage Tank

NAME, ADDRESS
REBECCA STREET STORAGE TANK, 171 REBECCA STREET

Other

NAME, ADDRESS
SEPTAGE RECEIVING FACILITY, 5449 HIGHWAY 25

Wastewater Main

- FORCE MAIN
- GRAVITY SEWERS 450mm AND LARGER
- INLINE STORAGE

Wastewater Treatment Plant Boundaries

- ACTON WWTP
- GEORGETOWN WWTP
- MID HALTON WWTP
- OAKVILLE SOUTH EAST WWTP
- OAKVILLE SOUTH WEST WWTP
- BURLINGTON SKYWAY WWTP

Halton Region

REGIONAL MUNICIPALITY OF HALTON, ITS EMPLOYEES, OFFICERS AND AGENTS ARE NOT RESPONSIBLE FOR ANY ERRORS, OMISSIONS OR INACCURACIES, WHETHER DUE TO THEIR NEGLIGENCE OR OTHERWISE. ALL INFORMATION SHOULD BE VERIFIED.

February 2022

Appendix C – Overflow Lab Result

Client: Wastewater Collection **Submission #** 23S-00215

Method		Test Description	Result Value	Units	Detection Limit	Low Obj.	High Obj.	Low Limit	High Limit
Sample Type	Sewer Overflow	**Location**	X				**Sample ID**	23S-00215-01	
Sample Point	X	**Sample Description**						Regulatory	
Sample Date	January 26, 2023	**Sample Time**	11:30		**Sample Period (Hrs)**		**SACI #**	1-2GYK8N	
PS-4	BOD	Total BOD	240	mg/L	1.0				
PS-27	NH3-N (AQ400)	Total Ammonia Nitrogen	47.2	mg/L	0.10				
PS-8	pH (S)	pH	7.62		1.00				
PS-12	TP	Total Phosphorus	5.40	mg/L	0.02				
PS-13	TSS	Suspended Solids	87	mg/L	2.0				

Analysis Notes: **Sample Condition:** Ok

Senior Lab Analyst Approval: ASB

Certificate of Analysis

Sample ID: 23S-00763-01

Municipality	Burlington	**Collection Date**	04/01/23
Client	Wastewater Collection	**Collected by**	Brazel D.
Sample Type	Sewer Overflow	**Collection Time**	03:30
Location	Paletta Gardens Station	**Collection Period**	
Sample Point	X	**SACI #**	1-3467BQ
Sample Condition	Low Volume	**Date Received**	04/03/23
Sample Description	4281 Lakeshore Rd	**Regulatory?**	Regulatory
Analysis Notes	pH result is approximate (analyzed past holding time)		

Method	Test Description		Result Value	Units	Detection Limit	Operating Objective	Low Limit	High Limit
PS-4	BOD	Total BOD	51	mg/L	1.0			
PS-27	NH3-N (AQ400)	Total Ammonia Nitrogen	2.75	mg/L	0.10			
PS-8	pH (S)	pH	7.50		1.00			
PS-12	TP	Total Phosphorus	0.68	mg/L	0.02			
PS-13	TSS	Suspended Solids	86	mg/L	2.0			

Senior Lab Analyst Approval: ASB

Client: Wastewater Collection **Submission #** 23S-00796

Method	Test Description		Result Value	Units	Detection Limit	Low Obj.	High Obj.	Low Limit	High Limit
Sample Type	Sewer Overflow	**Location**	Paletta Gardens Station				**Sample ID**	23S-00796-01	
Sample Point	X	**Sampled By**	Walker T.					Regulatory	
Sample Date	April 05, 2023	**Sample Time**	19:08	**Sample Period (Hrs)**			**SACI #**	1-34RZRD	
Sample Description	Paletta Gardens Pump Station								
PS-4	BOD	Total BOD	85	mg/L	1.0				
PS-27	NH3-N (AQ400)	Total Ammonia Nitrogen	1.26	mg/L	0.10				
PS-12	TP	Total Phosphorus	0.93	mg/L	0.02				
PS-13	TSS	Suspended Solids	510	mg/L	2.0				

Analysis Notes: **Sample Condition:** ok

Senior Lab Analyst Approval: ASB

Client: Wastewater Collection **Submission #** 23S-01579

Method		Test Description	Result Value	Units	Detection Limit	Low Obj.	High Obj.	Low Limit	High Limit
Sample Type	Sewer Overflow	**Location**	Paletta Gardens Station				**Sample ID**	23S-01579-01	
Sample Point	X	**Sampled By**	Jones J.					Regulatory	
Sample Date	July 29, 2023	**Sample Time**	11:23	**Sample Period (Hrs)**			**SACI #**	1-300ZDC	
Sample Description	1310 Paletta Gardens								
PS-4	BOD	Total BOD	53	mg/L	1.0				
PS-27	NH3-N (AQ400)	Total Ammonia Nitrogen	3.49	mg/L	0.10				
PS-12	TP	Total Phosphorus	1.07	mg/L	0.02				
PS-13	TSS	Suspended Solids	83	mg/L	2.0				

Analysis Notes: **Sample Condition:**

Senior Lab Analyst Approval: ASB