



Stormwater Management System

Performance Report 2023

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1.0 Executive Summary

Halton Region owns, operates, and maintains the Halton Region Stormwater Management System (SMS) in accordance with the Consolidated Linear Infrastructure Environmental Compliance Approval # 004-S701 (CLI-ECA) that was issued by the Ministry of the Environment, Conservation and Parks (MECP) on July 27, 2022. Halton Region's SMS provides effective stormwater management and protects its residents from the negative effects of precipitation during weather events and snowmelt along the regional road network. This SMS consists of a comprehensive network of sewers, culverts, catch basins, maintenance holes, oil grit separators (OGS), ditches, swales, and stormwater: management ponds, chambers and pumping stations.

Halton Region's SMS is interconnected with the lower tier municipalities (City of Burlington, Town of Halton Hills, Town of Milton, and the Town of Oakville) stormwater networks, however, Halton Region's stormwater network is not combined with its sanitary system.

This report is prepared to satisfy MECP annual reporting requirements outlined in Schedule E, S. 5.2 of the CLI-ECA, and covers the reporting period of January 1st to December 31st of the previous calendar year.

2.0 Legislative Requirements

Halton Region has prepared an Annual Performance Report to comply with MECP requirements of CLI-ECA # 004-S701, Schedule E, Section 5.2. The Annual Performance Reporting requirements are outlined below:

“5.2 The Owner shall prepare an annual performance report for the Authorized System that:

5.2.1 Is submitted to the Director on or before April 30th of each year and covers the period from January 1st to December 31st of the preceding calendar year.

a) For clarity, the first report shall cover the period of January 1, 2023 to December 31st, 2023 and be submitted to the Director on or before April 30th, 2024.

5.2.2 Includes a summary of all monitoring data along with an interpretation of the data and an overview of the condition and operational performance of the Authorized System and any Adverse Effects on the Natural Environment;

5.2.3 Includes a summary and interpretation of environmental trends based on all monitoring information and data for the previous five (5) years;

5.2.4 Includes a summary of any operating problems encountered and corrective actions taken;

5.2.5 Includes a summary of all inspections, maintenance, and repairs carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Authorized System;

5.2.6 Includes a summary of the calibration and maintenance carried out on all monitoring equipment;

- 5.2.7 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints;
- 5.2.8 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat;
- 5.2.9 Includes a summary of all spills or abnormal discharge events;
- 5.2.10 Includes a summary of actions taken, including timelines, to improve or correct performance of any aspect of the Authorized System; and
- 5.2.11 Includes a summary of the status of actions for the previous reporting year”

3.0 Monitoring Data

Halton Region works collaboratively with its lower tier municipalities, along with third-party contractors to monitor the condition and performance of Halton Region’s stormwater system in accordance with the applicable design criteria and to prevent any adverse effects on the natural environment (as defined in CLI-ECA #004-S701).

Under Section 16 of Ontario Regulation 239/02 Minimum Maintenance Standards for Municipal Highways, municipal staff conduct patrolling of regional roads to monitoring the condition and performance of the stormwater system through visual inspections that may indicate potential issues such as ponding on the road or ditch post significant rainfall event.

Municipal staff complete annual condition assessments of stormwater system outfalls, stormwater management ponds, infiltration chambers, and OGS units. In addition to the weekly monitoring of all equipment, operational controls, and alarms within each of the stormwater pumping stations, Halton Region retains a third-party contractor to complete a comprehensive Capital Needs Assessment of each of its stormwater pumping station every 3 years.

In summary, monitoring data collected in the current reporting year indicates that Halton Region’s stormwater system is operating as designed, any identified deficiencies were addressed in a timely manner, and there were no adverse effects on the Natural Environment. Staff will continue to optimize and enhance its monitoring program through the pending publication of the MECP Monitoring Guidance Document.

4.0 Environmental Trends

Based on the monitoring data collected during the current reporting period, staff has determined that the Authorized System is operating as designed and there are no definitive environmental trends. Staff will continue to monitor Halton Region’s stormwater system in subsequent years to identify trends and opportunities to enhance its existing stormwater monitoring program.

5.0 Operational Actions

In the current reporting period, staff identified a collapsed storm lateral under a regional road through CCTV analysis, which impaired the operation of the stormwater system within this drainage of the road. Staff deemed this operational issue as an emergency and immediately implemented a plan to retain a third-party consultant to repair / replace the storm lateral. The storm lateral was successfully repaired, and substantial performance was met upon acceptance of a post CCTV of the repaired lateral.

No other operational problems were identified that impacted the operation of Halton Region’s stormwater system that required immediate corrective action; however, several minor maintenance and repair items were undertaken to improve the operational performance of the stormwater system (see Table 3 below).

6.0 Inspections, Maintenance, and Repairs

Halton Region staff in conjunction with its lower tier municipalities and the retaining of third-party contractors, conduct a comprehensive inspection program of Halton Region’s stormwater system including any major structures, equipment, apparatus, mechanism. Annual inspections conducted by municipal staff focus on the condition and performance of components of the stormwater system as summarized below:

Table 1 – Inspections - Municipal Staff

Inspection Program	Inspection of Type	Frequency	# of Inspections
Catch Basins and Maintenance Holes	Visual condition assessment	As per O. Reg. 239/02	7,337 CB&MH
Stormwater Management Ponds	Visual condition and performance assessment	Annual	6 ponds
Stormwater Pumping Stations	Performance maintenance testing (electrical, mechanical, instrumentation, HVAC)	Annual	4 stations
	Station Routine	Bi-weekly	
Stormwater Outlets	Visual condition and sediment accumulation	Annual	257 outlets

All maintenance and repairs that was completed by qualified municipal staff (as per our Contractor’s Maintenance Services agreement) is documented in a work order software system (Burnside Mobile) for tracking purposes. Maintenance and repairs completed by municipal staff on any major structures, equipment, apparatus, mechanism, or thing forming part of Halton Region’s Authorized Stormwater System is summarized in Table 2 below:

Table 2 – Summary of Maintenance, and Repairs – Municipal Staff

Work Order #	Date	Location (approximate)	Maintenance Type	Maintenance Description
2023-10091	14-Feb-23	JAMES SNOW PARKWAY AND STEELES AVENUE	Spillway Clean-out	Cleaned out the spillway to the ditch line.
2023-10093	15-Feb-23	APPLEBY LINE AND DERRY ROAD	Spillway Clean-out	Cleaned out the spillway to the ditch line.
2023-10245	8-May-23	DERRY ROAD from FIFTH LINE to SIXTH LINE	Spillway Clean-out	Cleaned out the spillway to the ditch line.
2023-10267	8-May-23	BRONTE ROAD AND WYECROFT ROAD	Maintenance Hole	Raised sunken manhole frame and lid. Install concrete collar to match the surrounding road grade.
2023-10261	11-May-23	DERRY ROAD AND EIGHTH LINE	Culvert	Unclogged block culvert.
2023-10207	1-Jun-23	TREMAINE ROAD AND BRITANNIA ROAD	Culvert	Replaced CSP driveway culvert with HDPE culvert.
2023-10300	6-Jun-23	DUNDAS STREET AND BRANT STREET	Curb and Gutter	Repaired concrete curb and gutter.
2023-10210	13-Jun-23	DUNDAS STREET W AND COLONEL WILLIAM PARKWAY	Ditch Inlet	Completed ditching from cross culvert outlet to 20m east of cross culvert outlet allowing ditch to properly drain towards low area.

Work Order #	Date	Location (approximate)	Maintenance Type	Maintenance Description
2023-10211	13-Jun-23	DUNDAS STREET W AND WILLIAM PARKWAY	Culvert	Dewater ponding in ditch, to expose cross culvert invert. Discharge east of 400mm driveway culvert located east of 3367 Dundas St. W.
2023-10211	13-Jun-23	DUNDAS STREET W AND WILLIAM PARKWAY	Culvert	1) Unclogged 600mm cross culvert to allow drainage via 600mm cross culvert 2) Unclogged 400mm driveway culvert to allow drainage in the east direction.
2023-10199	14-Jun-23	TREMAINE ROAD AND BRITANNIA ROAD	Culvert	Cleaned out the sediment build up at the south end of the culvert
2023-10216	21-Jun-23	TREMAINE ROAD AND NO 2 SIDE ROAD	Ditch Inlet	Removed all drainage blockages including all debris and construction barrels from the ditch. Raked grass seed into the excavated areas slopes to prevent erosion.
2023-10471	21-Jul-23	NO 10 SIDE ROAD AND TENTH LINE	Spillway Clean-out	Cleaned out spillway to the ditch line.
2023-10417	16-Aug-23	STEELES AVENUE AND FIFTH LINE (S LEG)	Maintenance Hole	Raised sunken maintenance hole.
2023-10524	19-Sep-23	TREMAINE ROAD AND CAMPBELLVILLE RD	Culvert	Replaced culvert at 8749 Tremaine Rd
2023-10541	30-Sep-23	NO 20 SIDE ROAD AND FIRST LINE	Culvert	Flushed driveway culverts at 2081 and 2129 20 Side Road, Milton.
2023-10258	18-Oct-23	DUNDAS STREET W AND NEYAGAWA BLVD	Catch Basin	Raised CB and repaired the asphalt and the concrete surrounding the CB.

Work Order #	Date	Location (approximate)	Maintenance Type	Maintenance Description
2023-10613	19-Oct-23	SWM Pond #1212 Upper Middle Road E	Stormwater Management Pond	1) Added rip-rap to outlet channel at north end of pond 2) Back filled eroded side slopes with soil at north-west side of pond 3) Secured ditch inlet grate with fasteners (OPSD 403.010)
2023-10613	19-Oct-23	SWM Pond #1212 Upper Middle Road E	Stormwater Management Pond	Removed any phragmites from the pond, litter, and debris
2023-10597	23-Oct-23	SWM Pond #7	Stormwater Management Pond	1) Remove phragmites in pond to control the spread of invasive vegetation 2) Trim vegetation growth on spillway and between wing walls at inlet
2023-10598	27-Oct-23	SWM Pond #8	Stormwater Management Pond	1) Remove phragmites in pond to control the spread of invasive vegetation 2) Trim vegetation growth on spillway and between wing walls at inlet
2023-10524	31-Oct-23	TREMAINE ROAD AND BRITANNIA ROAD	Culvert	Replaced the damaged CSP entrance culvert matching existing size and length, restored the granular driveway including grass surface side slopes to match existing design.
2023-10195	9-Nov-23	STEELES AVENUE AND TRAFALGAR ROAD	Maintenance Hole	Raised sunken maintenance hole.
2023-10265	15-Dec-23	BURLOAK DRIVE AND EXIT 109 OFF RAMP QUEEN ELIZABETH WAY	Maintenance Hole	Raised 2 sunken maintenance hole frames and lids. Install concrete collar to match the surrounding road grade.

Work Order #	Date	Location (approximate)	Maintenance Type	Maintenance Description
2023-10672	20-Dec-23	GUELPH LINE AND CONSERVATION ROAD	Ditching	Re-profiled ditch

In addition, Halton Region also retains a qualified third-party contractor to complete inspections of the stormwater system, which is summarized in Table 3 below:

Table 3 – Inspections – Third-Party Contractors

Inspection Program	Inspection Type	Frequency	# of Inspections
Oil Grit Separator (OGS)	Visual condition / performance Assessment and sediment / oil measurements (sludge judge)	Annual	114 units
Infiltration Chambers	Visual condition / performance assessment and sediment measurements (sludge judge)	Annual	20 units
Storm Sewer	CCTV condition / performance assessment	Aligns with Capital Road Projects	8.7 kms
Culverts	Visual condition / performance assessment (OSIM)	Bi-annual	220 culverts

Upon completion of OGS and infiltration chamber inspections, if any deficiencies are identified or sediment accumulation has exceeded the manufacturers recommended limits then repairs and clean-outs are completed with the same calendar year. Similarly, if structural deficiencies or operational maintenance is identified through CCTV of the storm sewers or OSIM inspections of culverts then these items are programmed in Halton Region’s Asset Management Planning to be addressed during future capital works. Annual wet well cleaning is performed at each of the stormwater pumping stations by a qualified third-party contractor and removed materials are disposed of properly.

In summary, no OGS units or infiltration chambers required any repairs, however, 38 oil grit separators were thoroughly cleaned to remove sediment accumulation and disposed of at appropriate receiving sites. Minor grouting and crack sealing was identified in the storm sewers and culverts inspected to improve operational performance that was scheduled to be completed in upcoming capital road projects.

Annual sweeping of regional roads in the Spring, Summer, and Fall seasons to provide safe roads, but also minimize sediment accumulation within its stormwater system via catch basins.

Annual wet well cleaning is performed at each of the stormwater pumping stations by a qualified third-party contractor and removed materials are disposed of properly.

7.0 Calibration and Maintenance of Monitoring Equipment

Halton Region owns and operates four stormwater pumping stations each equipped with an ultrasonic level control system to monitor water levels, pump run times, flows, and controls pumps, gates and alarms. The ultrasonic milltronics is calibrated to manufactures specifications on an annual basis. Staff also continuously monitor the operation of each pumping station through Halton Region’s Supervisory Control and Data Acquisition (SCADA) system.

8.0 Summary of Complaints

Halton Region is comprised of the Town of Halton Hills, Town of Milton, and the Town of Oakville with a total population of approximately 625,000 residents. Residents have multiple options to contact Halton Region including social media, email, in-person, or phone (311). In the current reporting period, Halton Region only received 13 complaints related to the stormwater system that were addressed in a timely manner as summarized Table 4 below:

Table 4 – Summary of Complaints

Service Request #	Date	Location (approximate)	Issue	Maintenance Resolution
1-444299146	7-Feb-23	UPPER MIDDLE RD AND TRAFALGAR RD	Noisy Catch Basin	Raised CB and repaired the asphalt and the concrete surrounding the CB.
1-448723226	10-Feb-23	DERRY RD AND TRAFALGAR RD	Flooding	Warning signs were installed until water subsided.
1-452744316	16-Feb-23	NINTH LINE AND BURNHAMTHORPE RD	Flooding	Upon inspection it was noted that there was private property flooding due to snowmelt
1-452921965	19-Mar-23	BRITANNIA RD AND TRAFALGAR RD	Flooding	Addressed through the Capital Public Works Plan

Service Request #	Date	Location (approximate)	Issue	Maintenance Resolution
1-454805601	4-Apr-23	TREMAINE RD, S OF BRITANNIA RD	Culvert Repair	Replaced the driveway culvert.
1-454893678	5-Apr-23	BURNHAMTHORPE RD AND FOURTH LINE	Flooding	Addressed through the Capital Public Works Plan
1-455438820	6-Apr-23	TREMAINE RD AND 2 SIDE ROAD	Flooding	Some vegetation removal to clear partially blocked driveway culvert.
1-457781577	1-May-23	DERRY RD AND APPLEBY LINE	Flooding	Addressed through the Capital Public Works Plan
1-463884827	26-Jun-23	BRITANNIA RD AND FOURTH LINE	Flooding	Addressed through the Capital Public Works Plan
1-466501459	20-Jul-23	UPPER MIDDLE RD AND SUTTON DR	Catch Basin Maintenance	Cleared debris on top of the catch basin grates.
1-466911763	24-Jul-23	APPLEBY LINE AND DRYNER AVE	Flooding	Upon inspection no issue was found with the road drainage.
1-472332708	14-Sep-23	TRAFALGAR RD AND LOWER BASE LINE	Ditch Inlet	Upon inspection it was observed that the ditch had positive drainage.
1-482381235	17-Dec-23	TREMAINE AND STEELES AVE	Maintenance Hole Cover	Reinstate new manhole cover.

9.0 Summary of Alterations

In the current reporting period, Halton Region authorized a number of Alterations to its Authorized Stormwater System under CLI-ECA # 004-S701 (see summary table below). There were no Significant Drinking Water Threat Activities identified through any of the authorized Alterations.

Table 5 – Summary of Alterations

Authorization Date	Authorized Alteration Project Name	Description of Alteration	Significant Drinking Water Threat Identified?
28-Jun-23	PR3303 - Wyecroft Rd (Burloak Dr to Bronte Rd)	Storm sewer, ditches, wet pond	No
28-Jun-23	PR2670B - Britannia Rd (RR25 to James Snow Parkway)	Storm sewers, ditches, culverts, Dry Pond, OGS Units	No
5-Jul-23	PR3309A-21 - Britannia Rd (James Snow Parkway to 407)	Storm sewer, ditches, culverts, OGS Units	No
6-Sep-23	PR2263D - William Halton Parkway (Neyagawa to 6th Line)	Storm sewer, ditches, culverts, OGS Units, Dry Pond	No
13-Oct-23	PR2961B-20 - Trafalgar Road- Widening and South Georgetown Servicing	Wet Pond, Dry Pond, Engineered Grassed Swale / Bioswale	No

10.0 Summary of Spills or Discharges

Halton Region has developed a Spills Response Procedure ([Q-WWS-PR-WWLIW-264](#)) that outlines roles, responsibilities, and procedures taken to respond spills or an abnormal discharge event on regional roads that may impact Halton Region’s stormwater system. Under the Environmental Protection Act, R.S.O. 1990, c.E.19, (as amended), Halton Region's Emergency Spill Response Team has a responsibility to respond to Spill Incidents within its boundaries, including on regional roads, to ensure spills are cleaned up accordingly. A summary of spills is outlined in Table 6 below:

Table 6 - Summary of Spills

Service Request #	Date	Location (approximate)	Spill Addressed by Halton's Emergency Spill Response Team
1-453340657	22-Mar-23	REGIONAL RD 25 & BRITANNIA RD	Unknown amount of diesel fuel spill on road
1-458904883	11-May-23	REGIONAL RD 25 & WHITLOCK AVE	Oil spill (approx. 10ft x 4ft area) on road
1-461941596	8-Jun-23	NO. 10 SIDE ROAD & EIGHTH LINE	Unknown amount of oil spill on road
1-468683404	10-Aug-23	DERRY RD & SIXTH LINE	Less than 5 litres of liquid coolant spill on road
1-470293666	25-Aug-23	TRAFALGAR RD & UPPER MIDDLE RD	Less than 5 litres of liquid coolant spill on road
1-472340872	14-Sep-23	LOWER BASE LINE & TREMAINE RD	Unknown amount of liquid with sediment spill on road
1-480014144	26-Nov-23	GUELPH LINE & REID SIDE RD	Less than 5 litres of liquid coolant spill on road
1-480203878	28-Nov-23	TRAFALGAR RD & CORNWALL RD	Between 5-10 litres of hydraulic fluid spill on road

11.0 Summary of Performance Actions

Table 7 below provides a highly level summary of both capital and operating projects that were completed in the current reporting period to improve, or correct, the performance of Halton Region's stormwater system.

Table 7 – Summary of Performance Improvements

Timeline in current reporting year	Aspect of Authorized System	Description of Performance Improvements or Corrections
Spring, Summer, Fall	Regional Roads	Sweeping and flushing to minimize sediment entering Authorized System

Timeline in current reporting year	Aspect of Authorized System	Description of Performance Improvements or Corrections
September to November	Storm Sewers	Flushed and CCTV approximately 6.3km
October	Outlet and Ditch	Ditching to improve conveyance of stormwater from outlet through ditch
October	Stormwater Management Ponds	Remove litter / debris from forebay, cut grass, clean inlet and outlet to improve drainage, installed rip-rap to manage erosion
June to November	Spillways	Assessed condition of spillways and removed sediment accumulation
December	Oil Grit Separators	Thoroughly cleaned 38 units
October	Catch Basins and Maintenance Holes	Repaired catch basins and maintenance holes in accordance with OPSS.PROV.408
October	Culvert	Replaced an elliptical 1.7m x 1m x 18.7m steel cross culvert

12.0 Summary of Previous Actions

The purpose of this section is to summarize the status of actions completed in the current reporting period, however since this is the inaugural Annual Performance Report there are no actions to report.