

Niagara Region 2023 Stormwater Management Annual Performance Report

CLI-ECA License No. 007-S701 Issue No. 1

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1.0 Purpose of Annual Performance Reporting

On April 4, 2023 the Niagara Region (the Region) was issued a Consolidated Linear Infrastructure-Environmental Compliance Approval (CLI-ECA) for the storm sewer system that is owned and operated by The Regional Municipality of Niagara.

This license functions similar to the Region's Drinking Water License and gives the Region the ability to alter, extend or modify a storm sewer system without requiring individual approval from the Ministry of Environment Conservation & Parks (MECP) or through the previous transfer review program administered by the Region for each project. This approval is subject to various restrictions and requirements which are contained in the license.

An annual report is one of the requirements to be submitted to the MECP by April 30 of each year, for the previous calendar year and is to be made available to the public by June 1 on the Region's Website.

The annual report is required to address specific criteria related to operational performance, environmental impacts and identified alterations to the system which are listed in schedule E section 5.2 of the Region's license.

One of the conditions of the CLI-ECA license is to monitor the water quality. The monitoring requirements are not required until two-years after the guidelines are established by the MECP. The draft and final versions of these guidelines have not been provided to date, and therefore the sections of the annual report related to the Monitoring data are not included at this time.

2.0 Storm Water Management System Description

The Region has multiple storm water management systems that convey storm water run-off from regional roads and area lands. These systems are typically located in urban areas. A stormwater management system typically contains a series of storm mains with inline maintenance hole access and roadside catch basins with leads connected to the mains. Recently the installation of manufactured treatment devices are required to be installed by the MECP to remove oil and silt from the storm water before out letting into the natural environment to reduce impacts to the environment. Where determined necessary oversized pipes are utilized to retain the additional volume of water created by the increased road surface area and slowly outlet the water to prevent erosion and damage to the natural environment. The Region currently does not own any storm water management ponds which can be designed and used to reduce flow and remove contaminants and silt from the natural environment. The Region

owns and maintains one pumping station which is used in low lying areas that cannot drain into a sufficient outlet via gravity. These pumps are required to be serviced and maintained regularly to prevent flooding and damage to the area.

Currently, the Region's storm water management system as defined by the CLI-ECA license S007-S701 consists of the following:

- 86.188 km of storm pipe
- 12.696 km of culverts
- 15 Oil & Grit separators
- 1 Super Pipe
- 1 Infiltration storage system

The storm system also includes:

- 7104 inlets (catchbasins and ditch inlets)
- 2005 maintenance holes

3.0 Stormwater Management System Summary

The information reported below is a summary of the current conditions of the storm water system based on data in the Region's computerized maintenance management system (CMMS) and additional details from the relevant Road Supervisors. The data required to be reported on in the CLI-ECA license are listed in schedule E section 5.2.

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.

3.1 Monitoring data

The Stormwater CLI ECA Section 4.0 requires the Region to implement a Monitoring Plan in accordance with the Ministry of Environment Conservation and Parks (MECP) guidance document within 24 months of when the MECP releases the guidance document. To date the MECP has yet to publish the guidance document.

3.2 Environmental Trends

Environmental trends will be determined through the monitoring data once completed.

3.3 Operational Challenges

The Region's storm water management system consists of several systems across 12 municipalities installed at various timeframes and construction methods. The most difficult to maintain are old systems constructed with CSP pipe which have a service life of 50 years compared to 70-100 years for PVC or concrete pipe. Flushing old CSP pipe can result in equipment getting lodged in the pipe or pipe failure. In areas where these systems exist, repairs are made as necessary until replacement of the system can be completed.

Roadway underpasses can be prone to roadway flooding as they are the lowest point in the roadways with no shoulder to drain overland flows. The Region owns several underpasses at railway crossings where the road under the structure is lower than the lands surrounding it. Additional maintenance and cleaning activities are provided to ensure systems are operating as intended.

Utility intrusions occur when utilities are installed using directional boring. When these are found it is the utility company that is responsible for relocating their infrastructure and repairing damage to the Region’s systems.

3.4 Inspections, Maintenance, and Repairs

The Region is currently developing an operations & maintenance manual as required in the CLI-ECA license that will identify the current and proposed future inspection, maintenance & repair activities. The proposed changes are to ensure efficient operational performance of the storm water management system.

Table 1-1 - Summary of Completed Inspections, Maintenance and Repair Activities

Maintenance Activity	Scope of Work	Location	# of Assets Maintained
Catch Basin Cleaning	Hydro-Vac debris in sump of catch basins.	All catch basins on Regional Roads	6750
Manufactured Treatment Device (MTD) Cleaning	Hydro-Vac all silt and debris within MTD’s	All units owned by Region of Niagara	15
Grate Clearing or Checking	Check inlets for debris buildup	Inlets subject to debris	918 hours
Maintenance Hole Lid Repairs	Replace frame and/or lid	Various Locations	10
CB Lid and/or lead repair	Replace frame and/or lid, locate buried CB lid or repair CB lead	Various Locations	438
Maintenance Hole Lid Repair with new Concrete collar	Replace or reset Frame and lid and install concrete collar around frame	Various Locations	12

The Region owns one pumping station located at the underpass on McLeod Road near Stanley Ave. The pumping station drainage areas include the road and a portion of the surrounding area and pumps storm flows to a nearby watercourse. The system is monitored and maintained by the Region’s Water & Wastewater division on behalf of the Transportation Services Division. The pumping station was recently reconstructed in 2022.

Listed below are the maintenance activities that occurred at the pumping station in 2023. There were no major operational issues other than vandals that cut the cables which required immediate repair as the station was not operational until repairs were completed. Table 1-2 indicates the inspection, maintenance and repair activities to the McLeod Rd storm pumping station.

Table 1-2 - Summary of Maintenance on Pumping Station

Facility ID	Asset Type	Location	Work Completed	Date Completed
115001590	Pumping Station	McLeod Rd, Niagara Falls	Wiring Cut by Vandals. Cable Repair Completed.	03/02/2023
115001590	Pumping Station	McLeod Rd, Niagara Falls	Remote Safety Check	First day of the month
115001590	Pumping Station	McLeod Rd, Niagara Falls	Winter Prep	10/15/2023
115001590	Pumping Station	McLeod Rd, Niagara Falls	Communications failure reset.	11/03/2023

3.5 Calibration and Maintenance of Monitoring Equipment

This section is not required until 2 years after monitoring guidelines are provided by Ministry of Environment Conservation and Parks (MECP). Current anticipated timeline for release of the guidelines from the MECP is fall of 2024.

3.6 Complaints Received

Complaints are received through the Region’s dispatch services for various concerns. Table 1-3 summarizes the relevant complaints related the Region’s storm sewer system.

Table 1-3 - Summary of Complaints Received

RR No.	Location	Nature of Complaint	Steps to Resolve
98	Montrose Rd, Niagara Falls	Blocked Catch basin lead	Manual cleaning followed by Vacuum.
48	Niagara Street, St. Catharines	Blocked Catch basin lead	Manual cleaning
116	Stevensville Rd, Fort Erie	Catch basin Connection failure.	Catch basin lead repaired
3	Lakeshore Rd	Broken Storm Pipe causing roadside flooding.	Culvert pipe repaired.
12	Mountain Rd, NB Lane at Escarpment, West Lincoln	Catch basin grate is open.	Grate closed.
512	Livingston Ave, Grimsby	Grates covered by Debris.	Grates Cleared.
101	Mountain Rd & Marinelli Dr, Niagara Falls	Plugged catch basin	No issue found.
3	1056 Garrison Rd, Fort Erie	Asphalt around the sewer grate/storm drain is sinking and starting to crumble.	Monitoring location and asphalt patching when needed. Repair is scheduled to be completed in spring/summer.
20	Hwy 20 At Boyle Rd, West Lincoln	Flooding at Underpass.	Road Closure. Cleaned debris from inlets. Outlet cleared. Downstream drainage still to be addressed.
56	Thorold Stone Rd at Dorchester Rd, Niagara Falls	Reported flooding and standing water in the intersection.	No standing water found.
67	Beaverdam Rd, Thorold	Sinkhole next to MH.	Patching Completed around lid.
19	Gilmore Rd at Concession Rd, Fort Erie	Overflowing catch basin.	Monitored area and no concerns found.



RR No.	Location	Nature of Complaint	Steps to Resolve
24	Victoria Ave, Lincoln	Flooding of a full live lane. Water is up over the sidewalk.	Cleared debris. No further issues after rain event ended.
56	Collier Rd S at Sullivan Ave	Broken catch basin grate.	Lid replaced
72	Louth Street north of RR81, St. Catharines	Catch basin is damaged.	Curb face CB reinstalled
24	Victoria Ave at Second Ave, Lincoln	Road flooded over at underpass.	Water over road signs placed. CB's unplugged and debris cleaned up.
116	Stevensville Rd, Fort Erie	Sinkhole adjacent to CB.	CB repaired.
89	Glendale Ave between Riverview Blvd and Pelham Rd, St. Catharines	Reported blocked catch basin	Drain was cleared.

3.7 Alterations to the Authorized System

Table 1-4 summarize the approved alterations to the storm water system in 2023.

Table 1-4 - Summary of Alterations to Authorized System

RR No.	Project Location	Scope of Work	Significant Drinking Water Threat
42	Ontario Street from Linwell Rd to Lakeport Rd, St Catharines	Convert existing road from rural to urban which includes 2 new storm sewers and replacement of an existing storm sewer section to increase capacity	No



RR No.	Project Location	Scope of Work	Significant Drinking Water Threat
42	Ontario Street from Linwell Rd to Lakeport Rd, St Catharines	Install two (2) OGS units to remove 70% TSS with 90% efficiency	No
98	3111 Montrose Rd, Niagara Falls	150mm Storm Sewer Extension for new Roadside Catchbasin	No

3.8 Spills or Abnormal Discharge Events

There were no spills or abnormal discharge events that occurred within the storm water management system in 2023.

3.9 Actions Taken to Improve or Correct Performance of System

During road reconstruction project the existing systems are replaced when needed if in poor operating condition or increase capacity. Table 1-5 lists the works completed to improve the operating condition of the existing storm sewer systems within the project limits.

Table 1-5 - Summary of System Performance Improvements

RR No.	System Performance Improvement	Project Description
42	Ontario Street from Linwell Rd to Lakeport Rd, St Catharines	Road reconstruction project including the replacement of Storm sewers from Linwell Rd to Regatta Drive. Replaced storm sewer system on west side from #537-531.
55	Niagara Stone Rd from Line 2 to East West Line	Road reconstruction project including spot repairs to existing storm sewer system during road reconstruction. Abandoned section of sewer with watermain intrusion.



3.10 Status of Actions from Previous Year

This section is to include a summary of the status of actions for the previous reporting year. Since this is the inaugural year for the new CLI-ECA and the required Annual Performance Report, there are no preexisting actions to address. New goals and objectives are being developed internally and there will be quantifiable and tangible action items and performance improvements reviewed in the 2024 Annual Performance Report.