

Niagara Region 2024 Stormwater Management Annual Performance Report

CLI-ECA License No. 007-S701 Issue No. 2

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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 with similarities 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 Stormwater 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

- 16 Oil & Grit separators (two new in 2025)
- 1 Super Pipe
- 1 Infiltration storage system

The storm system also includes:

- 7104 inlets (catch basins 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 multiple systems across twelve (12) municipalities, installed at various times and utilizing different construction methods. The most difficult to maintain are aged systems constructed with CSP pipe which have a service life of 50 years compared to 70-100 years for PVC or concrete pipe. Flushing aged CSP pipe can result in equipment lodging in the pipe or pipe failure. In areas where these systems exist, necessary repairs are made 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 multiple underpasses at railway crossings where the road under the structure is lower than the lands surrounding it. Additional maintenance and cleaning activities provided are to ensure systems are operating as intended.

Continuous clearing of debris at catch basins, maintenance holes and outlets during significant rainfalls causing potential backups and flooding over the roadway.

Utility intrusions occur when utilities installed are using directional boring. When these instances occur 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	3059
Manufactured Treatment Device (MTD) Cleaning	Hydro-Vac all silt and debris within MTD's	All units owned by Region of Niagara	14
Grate Clearing or Checking	Check inlets for debris buildup	Inlets subject to debris	1894 hours
CB Lid and/or lead Repair	Replace frame and/or lid, locate buried CB lid or repair CB lead	Various Locations	2
Repair Collapsed Storm Lead	Replace CB Lead	Linear Meters	9

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.

Listed below are the maintenance activities that occurred at the pumping station in 2024. There were no major operational issues encountered in 2024. 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	Winter Prep	10/15/2023
115001590	Pumping Station	McLeod Rd, Niagara Falls	Remote Safety Check	First day of the month

3.5 Calibration and Maintenance of Monitoring Equipment

This section is required 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 2025.

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
83	450 Carlton Street, St. Catharines	Blocked Catch basin causing flooding onto the roadway	Blockage was cleared
83	Carlton Street & Columbia Street, St. Catharines	Two Blocked Catch basins	Blockages cleared
63	3916 Canborough Road	Sinkhole in Shoulder	Catch basin ends exposed and cleared
81	York Road, Niagara on the Lake	Numerous locations reported water over the road	Heavy rainfall, Blockages cleared

RR No.	Location	Nature of Complaint	Steps to Resolve
3	Main Street East, Port Colborne	Reports of flooding	Catch basin cleared
77	Fourth Avenue, St. Catharines	Report major flooding under train bridge	Lane closed, water pumped off road, CCTV investigating outlet
57	Thorold Stone Road & Garner Road, Niagara Falls	SE corner of the intersection is overflowing onto the road	Catch basin cleared
116	Stevensville Road, Fort Erie	Flooding into the entrance at fire hall	Flushed the system, identified blockages, spot repair blockages

3.7 Alterations to the Authorized System

There were no alterations to the Stormwater management system in 2024.

3.8 Spills or Abnormal Discharge Events

There were no spills or abnormal discharge events that occurred within the storm water management system in 2024.

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 1-4 - Summary of System Performance Improvements

RR No.	System Performance Improvement	Project Description
116	Spot Repairs between CP Rail line and #2631 Stevensville Rd	Repaired several sections of storm sewer that were full blocked, replaced one catch basin that was partially collapsed and raised 2 buried catch basins to grade.
20 & 77	AI based Road Flooding Detection	Installed detection systems at both the CP rail underpass on Regional Road 20 and CN rail underpass on Regional Road 77 which have historically flooded during heavy rain falls due to poor outlet conditions. While trying to find a permanent solution.

3.10 Status of Actions from Previous Year

This section includes a summary of the status of actions for the previous reporting year's operational issues.

Table 1-5 - Summary of Status of Actions for Previous Reporting Year

RR No.	Operational Issue	Result
Various	Failing CSP Pipes	Repairs were completed on RR116 to address some of the failing CSP storm sewers and alleviate flooding on private property. A CCTV and asset condition assessment inspection program for all storm sewers is to be completed in 2025 to identify and provide solutions to issues within the storm sewer system(s).
20, 77 & 24	Roadway Underpasses	AI-based flood detection has been installed at 2 of the underpasses with historical flooding concerns to help with response time when a flooding event occurs. The municipal drain at outlet at the RR20 underpass was cleaned out to address the flooding concerns at that location. Further investigation will be completed to resolve the flooding concerns at RR77 and RR24.

RR No.	Operational Issue	Result
Various	Utility Cross-bores	Multiple cross bores found in 2024 due to recent completed utility work. Repairs completed or planned to be by the utility owner. 2025 CCTV program will identify any other cross bores within the storm system(s).