

Stormwater Management System 2023 Annual Report



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Date Prepared:	April 19, 2024
Version:	Final Report
Prepared For:	Ministry of the Environment, Conservation and Parks Management Review Committee

1. Purpose

This annual report was developed by the City of Orillia for the purpose of establishing, implementing and enforcing stormwater management. This report has been prepared as a requirement of CLI-ECA 125-S701 Schedule E Section 5.2. The report covers activities performed from January 1, 2023 through to December 31, 2023 and must be submitted to the Director on or before April 30th of each year.

2. Background

Stormwater Management facilities (SWMF's) are humanmade infrastructure designed to protect downstream property from flooding and erosion by temporarily storing runoff and improve water quality by holding pollutant, sediment, preventing its release into the environment.

To remain effective, regular inspections, maintenance and monitoring must be conducted to meet the quality and quantity design objectives. Regular inspections are also key to ensuring that acceptable public safety standards are being met.

The City of Orillia is in the process of compiling a comprehensive Monitoring Program by a Qualified Person (QP) as required per CLI-ECA 125-S701 Schedule E Condition 4.1. The Monitoring Plan is to be in effect and reviewed by Management by May 10, 2024 or within twenty-four (24) months of the date of the publication of the Ministry's monitoring guidance, whichever is later.

3. Stormwater Reporting Requirements

The following documentation is a requirement of CLI-ECA 125S701 - Section 5.2 of Schedule E as follows:

5.2.2 Summary of All Monitoring Data, Interpretation of the Data and Overview of Operational Performance of the Authorized System and any Adverse Effects

The City maintains a maintenance and repair program for storm facilities. The City is in the process of hiring a QP to prepare an ongoing monitoring program for its stormwater facilities. At this time, monitoring data is unavailable. There were no reported adverse effects on the natural environment.

5.2.3 Summary and Interpretation of Environmental Trends Based on Monitoring Data for the Previous 5 Years

Monitoring data will be compiled and reported on once the monitoring program is set up in 2024.

The City of Orillia currently monitors precipitation including rainfall and snow. According to Environment Canada, Canada's climate is warming at twice the rate of the rest of the world. Climate trends show a steady rise in seasonal and annual temperatures, with more

intense precipitation events throughout the year. Changes in Orillia include stronger windstorms, more frequent heavy rain events and warmer winters, which are affecting the community in various ways.

Orillia's Climate Future encompasses all the actions and planning that the City of Orillia is undertaking to reduce our environmental impact and strengthen the community's resilience to the effects of climate change.

The City is committed to taking action to combat climate change through greenhouse gas reductions and through adapting our natural, built and social systems to these new conditions. The City has developed a Climate Change Action Plan (CCAP) and the Climate Change Adaptation Strategy, as well as investments in electric vehicle charging stations and LED lighting upgrades. Established programs include waste diversion, solar energy and promoting local sustainable businesses.

Year	Rainfall (mm)	Snowfall (cm)
2019	988.4	57
2020	950.1	50
2021	768.0	52
2022	759.3	78
2023	1045.4	42

Taken from the Environment and Climate Change Canada website.

Precipitation increased almost 38% in 2023 from the previous year.

Due to the increase in precipitation, the City has encountered an increased number of ditches to capacity or to overflow. Storm ponds and storm water pump stations are operating with no additional concerns at this time.

5.2.4 Summary of Operating Problems Encountered and Corrective Actions Taken

The City encountered the following concern during the reporting year:

1. Foaming at James Street Storm Pump Station – Cause or source was not able to be traced. Foaming occurs when the City has dry springs and then a heavy rain.

5.2.5 Summary of Inspections, Maintenance and Repairs carried out on any Major Structure, Equipment, Apparatus, Mechanism or Part of the Authorized System

The City maintains a maintenance and repair program for storm facilities. The frequency of maintenance and repairs for the Facility Works varies based on the activity being performed. The following outlines the maintenance and frequency on the City's stormwater collection system: Every year, each inspection is summarized into a report outlining Stormwater Management facility features that require immediate repair, routine repair, or monitoring.

Stormwater Ponds have three different types of inspections:

1. Safety Check Inspections were completed weekly until October 31, 2023. As of November 1, 2023, the frequency was revised to be conducted monthly. The City noted that monthly inspections were adequate as there were no notable changes to support the frequency. Safety inspections ensure infrastructure, such as valves, fences, and visible inlets / outlets have not been damaged. Due to challenges during the winter months, not all tasks outlined in the Safety Check may be completed. There were no major safety concerns raised during the reporting year.
2. Special Inspections occur after a significant rainfall (greater to or equal to 25 mm) event occurs that has the potential to flush significant amounts of materials into the ponds, or lead to capacity shortfalls.
3. Full Inspections occur twice per year and encompass a full check of the infrastructure, sediment loading through depth measurements and operational checks.

A Summary of stormwater pond inspection results is found in the following tables.

Table 1: Champlain Stormwater Pond Asset ID#8058	
Monitoring Notes	One pipe sagging/partially crushed internally at Inlet (5x1000CSP) South forebay, needs riprap added, monitor vegetation, trash, and sediment at inflow point, to South forebay, monitor riprap, monitor condition of outfall pipe, Sediment Forebay (West) 50-60% (phragmites), inflow point to West forebay from storm sewers; monitor geotextile/riprap, headwall condition, outfall pipe condition, Wetland Pond; monitor woody growth/unauthorized planting on berm, monitor phragmites.
Routine Repair	Phragmites in sediment forebay (South), tree/brush needs to be removed, phragmites in sediment forebay (West), missing grate at inflow point to West Forebay, from MH 889, phragmites at inflow point to West Forebay, outlet pipe not clear due to phragmites.
Immediate Repair	No access through area with no fence (private property), new fence around well/pumpstation blocking maintenance access.
Corrective Actions	Gate is being installed to re-establish access for maintenance. Vegetation concerns are to be addressed in a long-term maintenance planning project.

Table 2: Dancy Stormwater Pond Asset ID#8059

Monitoring Notes	General; Bell or Rogers access panel on boulevard in front of gate, lock rusty, gate difficult to open Detention Pond Veg; 95% vegetation, sediment accumulation between 100-300mm, pond holding water, outlet pipe at 60% water level, soft/boggy spots in pond.
Routine Repair	General; vines on fence, pond buffer; entire pond thick vegetation, invasive phragmites present, algae present Inflow point; phragmites present, overgrown brush, riprap not visible due to water level.
Immediate Repair	N/A
Corrective Actions	Bell is aware and installed in utility corridor at this time is not an immediate concern. Noted for awareness. Vegetation concerns are to be addressed in a long-term maintenance planning project.

Table 3: Fitton's Stormwater Pond Asset ID#8068

Monitoring Notes	Outlet weir structure; woody growth, woody growth/unauthorized planting on berm.
Routine Repair	General; Sign missing, Inflow Point SW 675mm storm sewer with grate; woody growth/unauthorized planting, Low Flow Swale; sediment/accumulation in swale, Outlet Weir Structure; cannot see rip/rap may be under organic material, or more may be needed.
Immediate Repair	N/A
Corrective Actions	Sign replaced and to be installed in summer 2024. Vegetation concerns are to be addressed in a long-term maintenance planning project. Rip-rap to be addressed during storm pond clean out.

Table 4: Inch Stormwater Pond Asset ID#8057

Monitoring Notes	Permanent Pool Vegetation; algae present, 20% vegetation, Permanent Pool; level seems low, woody growth cattails & phragmites, East Forebay; riprap channel, Inflow Point to east Forebay; could not see riprap, possibly insufficient or covered in organic material north and south channel, Outlet to Creek; woody growth.
Routine Repair	Pond Buffer; clearing of vegetation required, Permanent Pool; invasive plants phragmites, Permanent Pool Outlets to regional storm structure; CB with CI birdcage missing cage/frame, Dry Pond Vegetation; overgrown with brush, tress, 90 vegetation coverage, East Forebay; Outfall pipes x3 CSP sediment and vegetation needs removed, East Forebay Pond Vegetation;

	invasive plants, phragmites, 90% vegetation coverage, Inflow Point to East Forebay; inflow channel (N) sediment/vegetation present, woody growth, sediment at headwall outfall from MH 1471, Regional Storm Spillway; gate missing near valves, woody growth between headwall and gabion, Spillway Structure; outlet full of sediment/vegetation
Immediate Repair	Dry Pond (regional storm); woody growth excessive, East Forebay; woody growth excessive, Inflow points to east Forebay; Outfall pipe sediment needs removed, Outlet to Creek: pipes under roadway severely rusted.
Corrective Actions	Inch Pond is being retrofitted in 2024. Vegetation concerns are to be addressed in a long-term maintenance planning project.

Table 5: Toboggan Hill Stormwater Pond Asset ID#8063	
Monitoring Notes	Outlet Point; leaf buildup, Overflow Channel; can't see gabion, covered in organic material, Dry Pond; leaf debris.
Routine Repair	Overflow Channel; woody growth, Inflow Point SW Swale; woody growth.
Immediate Repair	N/A
Corrective Actions	Vegetation concerns are to be addressed in a long-term maintenance planning project.

Table 6: University Stormwater Pond Asset ID#8067	
Monitoring Notes	East Forebay; south low flow overflow brush, cattails, bushes, phragmites, Inflow Point to East Forebay; riprap insufficient, Permanent Pool; woody growth, phragmites, vegetation over 30%, Southwest Outlet (1); may be animal burrow in slope, Southwest Outlet (2); tree/brush, Emergency Spillway; woody growth/brush, Inflow Point to West Forebay 750mm from MH 1694; riprap insufficient, Inflow Point to west Forebay; Overland Flow Channel; granular disturbed/insufficient.
Routine Repair	Easy Forebay; sediment accumulation, North Low Flow Overflow needs brush removed, cattails impeding flow, woody growth/brush/trees, Inflow Point to East Forebay: 750mm from MH 1688; headwall some chipping, outfall pipes vegetation, Inflow Point to East Forebay/ Overland flow channel; Channel vegetation, Inflow Point to East Forebay: 1950 mm from MH 1400; outfall pipes pallet in outfall behind grate as well as concrete core cut, riprap insufficient, woody growth tree/brush, Inflow Point to east Forebay: 750mm from MH 1430; woody growth brush/trees, West Forebay; brush/woody growth, phragmites, 95% vegetation coverage, Inflow Point to West Forebay: 750mm from MH 1694; Outfall pipes vegetation

	present, phragmites, woody growth, Inflow Point to west Forebay: Overland flow channel; vegetation/woody growth.
Immediate Repair	Inflow Point to east Forebay: 750mm from MH 1430; outfall pipe sitting high, sediment/vegetation”
Corrective Actions	Vegetation concerns are to be addressed in a long-term maintenance planning project. Rip-rap to be addressed during storm pond clean out.

Stormwater Continual Improvement Initiatives:

As per CLI-ECA 125-S701 Schedule E Condition 3.3, signage to stormwater pond facilities identified in Schedule B were ordered in 2024. Plans to install signage are planned for 2024.

Stormwater Pump Stations:

1. Monthly Inspections are conducted by the City’s Water/Wastewater Treatment Operators monthly. Storm Pump Station inspections include the following criteria:
 1. Visual inspection of wet well, and outfall
 2. Run all pumps in hand and record pump hours
 3. Top up all oilers, test Raco alarm once per week, check 3ph monitor

There were no operating concerns raised during the reporting year.

5.2.6 Summary of the Calibration and Maintenance and Repairs on Monitoring Equipment

The City of Orillia does not have any monitoring equipment overseeing the stormwater system.

5.2.7 Summary of Complaints Related to Sewage Works During Reporting Period and Steps Taken to Address Complaint

The City received 126 complaints for culverts, ditches, and drainage issues during the reporting year. The Environmental Officer conducts the following steps to address complaints:

- Reviews the mapping to recommend maintenance.
- Determines if the City or the owner is required to conduct the maintenance. If it is deemed as the City, it is added to the ditching or flushing list to be completed by an External Contractor or the Roads Unit.

The breakdown of the 2023 complaints was as follows:

- Culverts – 42
A culvert inspection involves a visual inspection for obstructions, joint or seam issues, buildup of debris, obstruction to the flow of water and/or odour.

- **Ditches – 79**

A ditch inspection involves a visual inspection for obstructions, buildup of garbage and sediment, obstruction to the flow of water and/or odour.

- **Drainage - 5**

A drainage inspection involves a visual inspection of the property for any changes in elevation or construction that may have caused the issue. If the issue is on private property the City may suggest as a best management improvement to address the issue ex. swale, french drain or diverting water alternatively.

5.2.8 Summary of Alterations to the Authorized System, Authorized by the Approval including a List of Alterations that Pose a Drinking Water Threat

Alterations conducted during 2023 were as follows:

- Installation of storm sewer on Matchedash St. S (375mm diameter pipe) at Colborne Street and Elgin Street intersections.
- Replacement of storm sewer on Lacie St (375-525mm diameter pipe) between Neywash and Borland Streets
- Installation of storm sewer on Tecumseth St. (375-450mm diameter pipe) east of Lacie Street to west of Centennial Drive including a stub on Parkview Avenue.
- Centennial from Neywash to Tecumseth including 40m of 525mm diameter pipe and 64m of 450mm diameter pipe.

5.2.9 Summary of Spills or Abnormal Discharge Event

The following spills occurred in 2023:

1. Spill at Canadian Tire Gas Bar Sept. 29, 2023 – Fire Department responded to control spill and GFL Utility Service overseen the cleanup. Storm systems on both sides of road were inspected and found empty and dry with no odour of fuel. GFL pumped down the catch basins in the parking lot closer to the road, to help prevent any overflow into the City drainage system. The Fire Department was confident that there was no impact of the storm sewers or Lake Couchiching.
2. Illegal waste from recreational trailer was dumped in a storm drain – The individual was fined, and the storm drain was vacuumed out.

5.2.10 Summary of Actions Taken, Timelines to Improve or Correct Performance of Authorized System

This is the first year of reporting; therefore, there are no actions outstanding during this reporting year.

5.2.11 Summary of the Status of Actions for the Previous Reporting Year.

This is the first year of reporting; therefore, there are no actions outstanding during this reporting year.