

2025

Edwardsburgh/Cardinal Stormwater System Annual Performance Report



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For: CAO and Council
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Introduction

Under the Environmental Compliance Approval Linear (ECA) # 155-S701 issued by the Ministry of Environment, Conservation and Parks (MECP), the Township of Edwardsburgh/Cardinal is required to prepare and submit an annual performance report regarding the Stormwater Management System by April 30th of the subsequent year. This performance report will encompass the timeframe from January 1st to December 31st, 2025, and is submitted Municipal Council and the MECP. Additionally, the report will be accessible for public viewing on the Township's website by June 1st.

The Cardinal Stormwater Management System is composed of storm mains, culverts, ditches, and outlets that direct water into the St. Lawrence River. The storm mains are constructed from materials such as concrete, clay, PVC, and steel. There are no stormwater treatment facilities in Cardinal.

The Spencerville Stormwater Management System consists of PVC and steel mains, catch basins and culverts. A stormwater improvement project was commissioned in 2022 that serves Cedar, David, Charles, Cook and Cherry Streets. An enhanced grass swale system located south of Cherry Street treats stormwater before discharging into the South Nation River.

The Johnstown Stormwater Management System currently consists of ditches, culverts, swales and PVC main that drain surface water from the Hamlet of Johnstown to 4 outlets. Three outlets discharge to the St. Lawrence River and one to a marsh north of the hamlet. A stormwater improvement project was completed on Mary and Sophia Streets from Second Street to County Road 2, which was completed in 2023.

Executive Summary

The annual performance report summarizes sampling data, inspection and maintenance activities for storm outfalls, mains and catch basins within the Edwardsburgh/Cardinal Stormwater Management System. Unplanned maintenance activities, operating problems and corrective actions are summarized for the 2025 review period.

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System Approvals

<u>System</u>	<u>Linear ECA</u>	<u>Renewal Date</u>
Edwardsburgh/Cardinal Stormwater Management System	155-S701	June 15, 2026

Monitoring Data

There were no grab samples collected during the 2025 review period. Sample results in 2023 and 2024 demonstrate storm water discharge is below the 2012 Schedule B stormwater discharge by law.

<u>Parameter</u>	<u>Sophia Storm Outfall 2024 (mg/L)</u>	<u>Sophia Storm Outfall 2023 (mg/L)</u>	<u>2012 Schedule B Storm Sewer Discharge Bylaw limit (mg/L)</u>
	March 18, 2024	May 3, 2023	
Total Suspended Solids	3	3	15
Chromium	<0.001	<0.001	0.08
Arsenic	0.0003	0.0003	0.02
Copper	0.0021	0.0017	0.04
Lead	0.00004	0.00016	0.12
Mercury	<0.00002	<0.00002	0.0004
Nitrate & Nitrite	<0.05	1.95	N/A
Oil & Grease	7.4	<1.0	N/A
Total Phosphorus	0.03	0.04	0.4
PHC F1 (C6-10)	<25 ug/L	<25 ug/L	N/A
PHC F2(>C10-C16)	<50 ug/L	<50 ug/L	N/A
PHC F3 (>C16-C34)	<400 ug/L	<400 ug/L	N/A
PHC F4 (>C34-C50)	<400 ug/L	<400 ug/L	N/A

Grab sample results are lower than parameters outlined in the 2012 Schedule B Storm Sewer discharge bylaw.

Monitoring Data Trending Review 5-year review

There is insufficient data to develop trending and analyses of monitoring data over 5 years. Results from grab samples collected in 2023 and 2024 from the Sophia storm outfall remain consistent and are below the 2012 Schedule B Stormwater discharge by law. The MECPS monitoring plan, once released, will provide guidance and direction on sampling requirements, data collection and review.

Operational Problems

March 17, 2025- Small sinkhole developed from storm main flushing in 2024 on Dundas Street. Temporary measures including filling the hole were completed until repairs were made. Repair completed on August 20, 2025.

March 31, 2025- Small sinkhole adjacent to a catch basin on Dishaw Street. Public Works repaired.

June 25, 2025- Received a drainage complaint on Waddell Street. Issue resolved by the time E/S arrived. Storm main replacement and road reconstruction were completed in 2025.

September 8, 2025- Business owner advised his sump pump isn't draining properly from the catch basin at the corner of Henry and Dundas Street. E/S and Public Works repaired catch basin and modified drain line.

September 26, 2025- Sump pump line not draining properly at a property on Sophia Street due to reconstruction work previously completed. Public Works excavated and repaired.

October 14, 2025 - Small sinkhole by catch basin on Loyalist Place reported.

October 23, 2025 – E/S and Public Works repaired catch basin on Loyalist Place.

Inspection, Maintenance & Repair

The following is a summary of inspection and maintenance activities within the Edwardsburgh/Cardinal Stormwater Management System.

Outfall Inspection Program

CARDINAL			
<u>Date</u>	<u>Outfall</u>	<u>Asset ID</u>	<u>Inspection Findings</u>
April 1, 2025	939 Reid Street	2625	Extension piece disconnected at bell but not impacting flow and operations. Cleared dead vegetation.
April 1, 2025	Henry Street	2628	Outfall in fair condition. Cement pipework disconnected at bell. Not impacting operations or flow.
April 1, 2025	Dundas Street	2631-2632	Removed sediment build up in catch basin.
April 1, 2025	Gill Street	2627	Outfall clear and in good condition.
April 1, 2025	Flett Street	2627	Inspected from top of embankment. PVC pipework appears in good condition.

SPENCERVILLE			
<u>Date</u>	<u>Outfall</u>	<u>Asset ID</u>	<u>Inspection Findings</u>
April 22, 2025	South Street	2633	Pipework is in good condition.
April 22, 2025	Swale System	2634	No issues identified. Removed minor vegetation buildup.

JOHNSTOWN			
<u>Date</u>	<u>Outfall</u>	<u>Asset ID</u>	<u>Inspection Findings</u>
April 2, 2025	Sophia Street	2678	Removed minor vegetation growth. No other issues identified.
April 2, 2025	Mary Street	2544	No issues identified.
April 2, 2025	Sophia Street Oil-Water Separator	2678	Inspected oil-water separator. Measurements taken of sediment levels. No issues identified.
October 21, 2025	Sophia Street Oil-Water Separator	2678	Inspected oil-water separator. No issues identified.

CAPITAL PROJECTS & MAINTENANCE		
<u>Location</u>	<u>Date</u>	<u>Maintenance/Repair</u>
Henderson-South-Water Streets, Spencerville	July-August 2025	Repaired and replaced catch basins during road reconstruction.
Waddell Street, Cardinal	August 2025	Replaced storm main and catch basins during road reconstruction.
Dishaw Street	August 19-22, 2025	Catch basin and storm service replacements at the Cardinal Public Works Garage parking lot.
Dundas Street East	August 20, 2025	Repaired sink hole at 2166 Dundas Street, Cardinal
Loyalist Place	October 23, 2025	Repaired sinkhole by catch basin.

STORM MAIN & CATCH BASIN FLUSHING-INSPECTION PROGRAM		
Date	Location	Maintenance
July 14, 2025	Cardinal	Catch basins were cleaned under high pressure and inspected on Joseph, Dundas, Victoria, John Streets.
July 21, 2025	Cardinal	Catch basins high pressure cleaned on Middle Street.
July 23, 2025	Spencerville	All catch basins were inspected and high pressure cleaned.
July 24, 2025	Cardinal	Catch basins were high pressure cleaned and inspected on Lambert, Walter, Dundas East and John Streets.
September 8, 2025	Cardinal	Catch basins were cleaned under high pressure and inspected on Walker Street.

Summary of Calibration and Equipment Maintenance

Not Applicable

Summary of Complaints

The following complaints were received during the reporting year.

Date	System	Complaint	Corrective Action(s)
March 17, 2025	Cardinal	Small sinkhole	Filled in then repaired on August 20, 2025
June 25, 2025	Cardinal	Drainage complaint	Addressed during road reconstruction and stormwater replacements.
September 8, 2025	Cardinal	Sump pump line not draining.	Made repair in catch basin.
Sept 26, 2025	Johnstown	Sump pump line not draining.	Public Works excavated and repaired. Unresolved issue from roadwork reconstruction.
October 14, 2025	Cardinal	Sinkhole	Repaired on October 23, 2025

Alterations to Authorized System

Waddell Street, Cardinal- Existing storm main infrastructure, including catch basins and storm leads replaced during roadwork reconstruction.

Henderson Street, Spencerville- Existing catch basin replaced during roadwork reconstruction.

South Street, Spencerville- Existing catch basins replaced or repaired during roadwork reconstruction.

Spills and Abnormal Discharge Events

No Spills or abnormal discharge events occurred or were reported in 2025.

Summary of Actions taken including timelines, to improve or Correct Performance

Flushing and CCTV inspection program implemented on an annual basis. Storm mains are being assessed prior to commencing roadwork resurfacing and rehabilitation to determine if replacement is required.

Status of Actions from Previous Reporting Year

No status or action items from previous reporting year.

Significant Drinking Water Assessment Report

A Significant Drinking Water Assessment Report has been prepared for the stormwater and sanitary collection systems in Edwardsburgh/Cardinal. This report utilizes data from the Source Water Protection Plan provided by the South Nation Conservation Authority, along with the Directors Technical Rules concerning potential threats to drinking water, to pinpoint activities that may endanger water quality. The assessment found no existing stormwater projects that could compromise water quality in the Intake or Well Protection zones 1 and 2 for either Cardinal or Spencerville in 2025. Furthermore, the Significant Drinking Water Assessment Report undergoes an annual review and update.

Operational Plan

The Linear ECA required an operational plan to be developed and implemented by May 2023. The operational plan encompasses procedures and maintenance schedules for stormwater infrastructure, which includes outfalls, treatment systems, and mains. Additionally, the plan must outline procedures for managing complaints and reporting spills or bypasses. An operational plan was developed and implemented on January 1, 2023.

Storm Sewer-shed Inventory

The Linear ECA requires the development of a Storm Sewer-shed inventory that classifies treatment level for each outfall, the estimated catchment area, the receiving stream, the water shed and whether treatment is provided by another municipality. The inventory summary and mapping were submitted to the MECP on January 21st, 2025.