

**2024**

# **2024 Edwardsburgh-Cardinal Storm Water System Annual Report**



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For: CAO and Council  
2/13/2025**

## 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, 2024, 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 2024 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](#)

During the reporting year one set of grab samples were collected to compare stormwater discharge effluent with the 2012 Schedule B Stormwater discharge bylaw limit.

<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 bylaw. The MECPS monitoring plan, once released, will provide guidance and direction on sampling requirements, data collection and review.

Operational Problems

**August 21, 2024-** On call operator received a complaint of water pooling on roadway after torrential rains on Dundas/Lower Street. Operator was able to pump down catch basin and clear blockages. Follow up flushing and CCTV inspection of mains occurred on August 24, 2024.

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>
March 7, 2024	939 Reid Street	2625	Extension piece disconnected at bell but not impacting flow and operations. Cleared dead vegetation.
March 7, 2024	Henry Street	2628	Outfall in fair condition. Cement pipework disconnected at bell. Not impacting operations or flow.
March 7, 2024	Dundas Street	2631-2632	Removed dead vegetation and sediment build up by hand in catch basins.
March 7, 2024	Gill Street	2627	Outfall clear and in good condition.
March 7, 2024	Flett Street	2627	Inspected from top of embankment. PVC pipework appears in good condition.

CARDINAL			
Date	Outfall	Asset ID	Inspection Findings
March 7, 2024	Walter Street	2629	Outfall extends down canal embankment. No issues identified.
SPENCERVILLE			
Date	Outfall	Asset ID	Inspection Findings
April 30, 2024	South Street	2633	Pipework in good condition.
April 30, 2024	Swale System	2634	No issues identified. Pipework and ditching clear.
JOHNSTOWN			
Date	Outfall	Asset ID	Inspection Findings
March 14, 2024	Sophia Street Oil-Water Separator	2678	Inspected oil-water separator. Measurements taken of sediment levels.
March 18, 2024	Sophia Street	2678	Removed dead vegetation from outfall. Collected samples for chemical analyses.
March 18, 2024	Mary Street	2544	Outfall clear, free flowing. No issues identified.
June 13, 2024	Sophia Street Oil-Water Separator	2678	Aqua drain vacuumed and cleaned separator. No oil observed, debris and sediment removed.

CAPITAL PROJECTS & MAINTENANCE		
Location	Date	Maintenance/Repair
Cardinal Outfalls	March 7, 2024	Cleared dead vegetation from outfalls.
Oil-Water Separator-Sophia Street	June 13, 2024	High pressure cleaned and removed sediment buildup.
Reid Street	October 8, 2024	Tackaberry Construction extended storm cover to surface.

STORM MAIN & CATCH BASIN FLUSHING-INSPECTION PROGRAM		
Date	Location	Maintenance
April 10, 2024	Cardinal	High pressure cleaned and CCTV inspected storm mains on Reid Street.
May 17, 2024	Spencerville	High pressure cleaned and CCTV inspected storm mains on South Street.
June 13, 2024	Johnstown	High pressure cleaned storm catch basins and mains on Sophia/Mary Streets.
August 24, 2024	Cardinal	High pressure cleaned and CCTV'd storm mains on Dundas-Lower Streets.

Summary of Calibration and Equipment Maintenance

Not Applicable

### Summary of Complaints

The following complaints were received during the reporting year.

<u>Date</u>	<u>System</u>	<u>Complaint</u>	<u>Corrective Action(s)</u>
January 26, 2024	Cardinal	Storm cover shifted out of place.	Plow truck shifted storm cover during snow plowing. Storm cover put back into place.
January 26, 2024	Spencerville David Street	Snowbanks covering storm drains.	Public Works removed snow banks.
August 21, 2024	Cardinal Dundas Street	Water pooling on roadway after intense precipitation.	Pumped down catch basin and removed blockages.

### Alterations to Authorized System

There were no alterations to the authorized system in 2024.

### Spills and Abnormal Discharge Events

No Spills or abnormal discharge events occurred or were reported in 2024.

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

Flushing and CCTV inspection program implemented on 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 2024. 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 out fall, 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 21<sup>st</sup>, 2025.