

2025

Sanitary Collection System Performance Report

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**EDWARDSBURGH
CARDINAL**

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For: CAO and Council
1/14/2026

Introduction

Under the Environmental Compliance Approval Linear (ECA) 155-W601 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 for the Sanitary Collection System by March 31st of the subsequent year. This performance report will encompass the period from January 1st to December 31st, 2025, and is submitted to both Municipal Council and the MECP. Additionally, the report will be accessible for public viewing on the Township's website.

The Cardinal Sanitary Collection System consists of four sanitary lift stations, four force mains, and piping that varies in diameter from 200 mm to 450 mm, constructed from clay, PVC, and CIPP lined materials. Influent flow is directed to the Cardinal Water Pollution Control Plant for treatment.

The Spencerville Sanitary Collection System was constructed in 1989 and comprises of 4,000 meters of PVC piping, with diameters varying from 100 mm to 250 mm. This system utilizes two remote pumping stations in addition to one main pumping station, which transports sewage through a 125 mm force main to one of two facultative stabilization ponds for treatment.

The Sanitary Collection System of the Edwardsburgh/Cardinal Industrial Park is composed of gravity pipework with diameters varying from 300 mm to 914.4 mm, constructed from reinforced concrete and PVC materials. The collected influent flow is directed to Prescott's Water Pollution Control Plant for treatment.

Executive Summary

The yearly performance report provides a comprehensive overview of monitoring data, operational challenges, inspections, maintenance, calibration activities, and overflow incidents related to the Edwardsburgh-Cardinal Sanitary Collection System. This report also summarizes efforts made to mitigate overflows within the collection system.

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System Approvals

| <u>System</u> | <u>Linear ECA</u> | <u>Renewal Date</u> |
|--|-------------------|---------------------|
| Edwardsburgh/Cardinal Sewage Collection System | 155-W601 | June 15, 2026 |

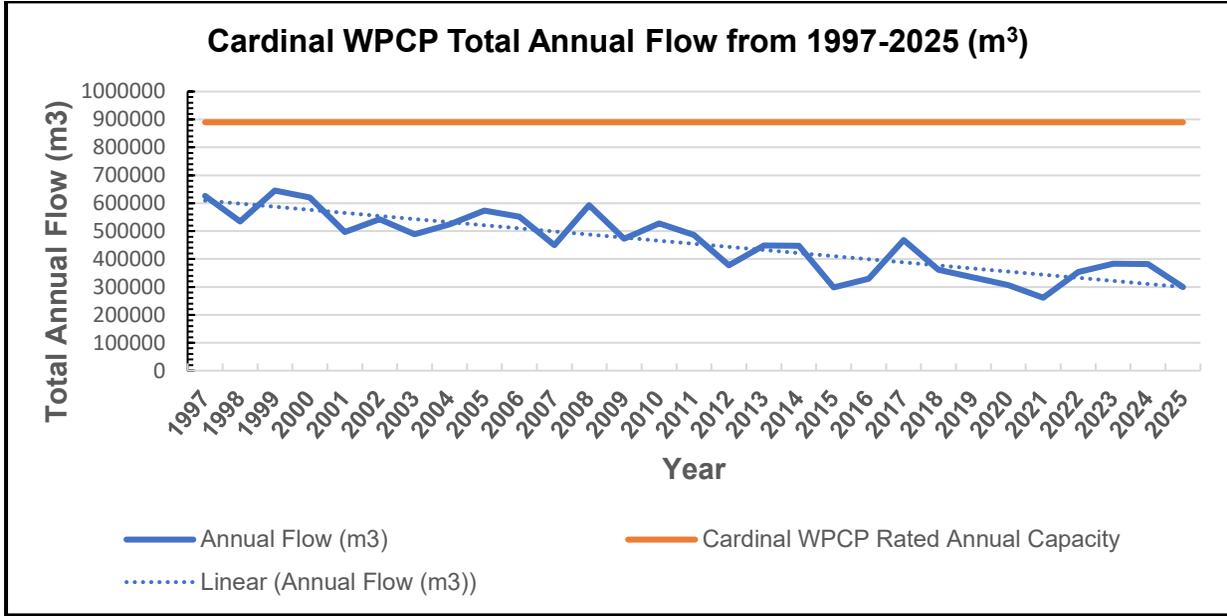
Sanitary Collection System Monitoring Data

| 2025 | <u>Cardinal North Station (m³)</u> | <u>Cardinal South (m³)</u> | <u>Spencerville (m³)</u> | <u>Industrial Park Prescott WPCP (m³)</u> |
|--------------------------------|--|---|--|---|
| January | 14,173 | 9,962 | 2,853 | 5,942 |
| February | 8,252 | 6,042 | 2,371 | 7,026 |
| March | 24,380 | 24,576 | 7,191 | 12,055 |
| April | 22,486 | 34,529 | 6,085 | 9,630 |
| May | 10,503 | 19,610 | 2,894 | 6,568 |
| June | 7,742 | 13,853 | 2,722 | 5,748 |
| July | 6,080 | 11,798 | 2,347 | 5,088 |
| August | 5,138 | 9,834 | 2,221 | 4,626 |
| September | 4,768 | 9,273 | 2,387 | 3,488 |
| October | 5,207 | 9,831 | 2,365 | 6,893 |
| November | 8,189 | 12,758 | 2,971 | 7,056 |
| December | 8,108 | 12,760 | 3,090 | 6,713 |
| Summary (m³) | | | | |
| Minimum | 4,768 | 6,042 | 2,221 | 3,488 |
| Maximum | 24,380 | 34,529 | 7,191 | 12,055 |
| Average | 10,419 | 14,569 | 3,291 | 6,736 |
| Total | 125,026 | 174,826 | 39,497 | 80,833 |
| Measurement | Daily Readings collected off ABB Totalizer for all flow on north side of Cardinal. | Calculation. Totalized flow at Cardinal WPCP minus Adelaide Stn Flow. | Readings collected off ABB Totalizer for all Collection System flow. | Prescott WPCP calculates Industrial Park usage by taking the difference from Station 6 and 5 flow meter readings. |

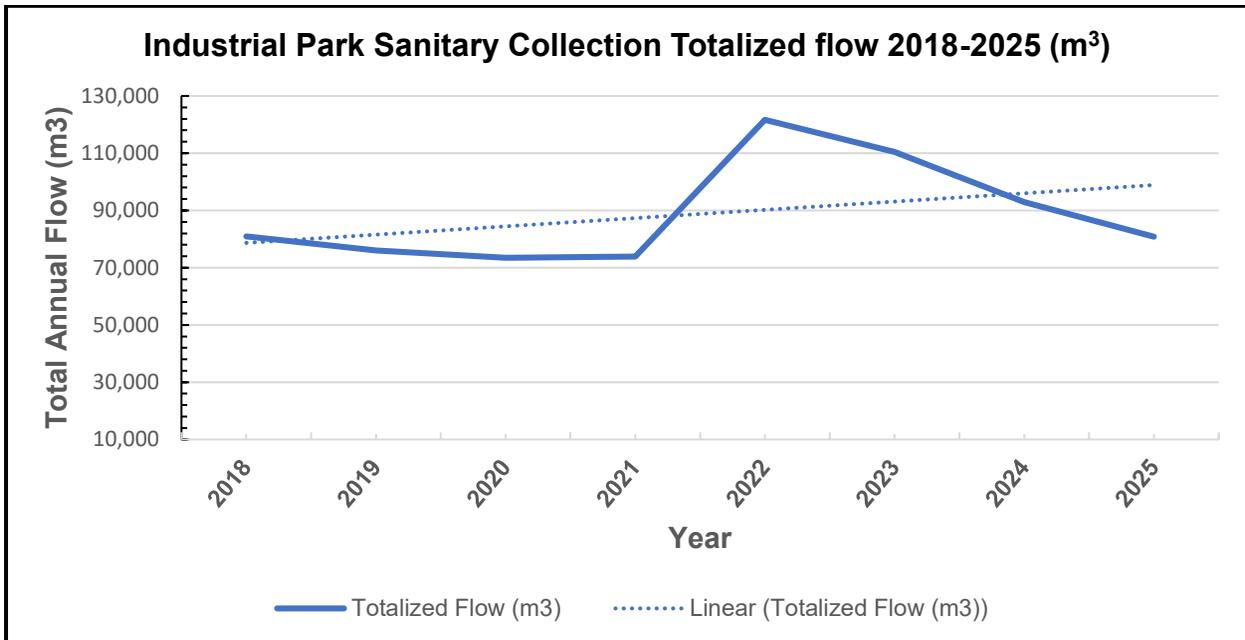
Monitoring Data Trending Review/ 5-year review

Totalized sanitary flow into the Cardinal WPCP has been steadily declining since 1997. This can be attributed to sanitary main replacement, CIPP lining and a potable water metering program.

Cardinal WPCP Totalized Flow

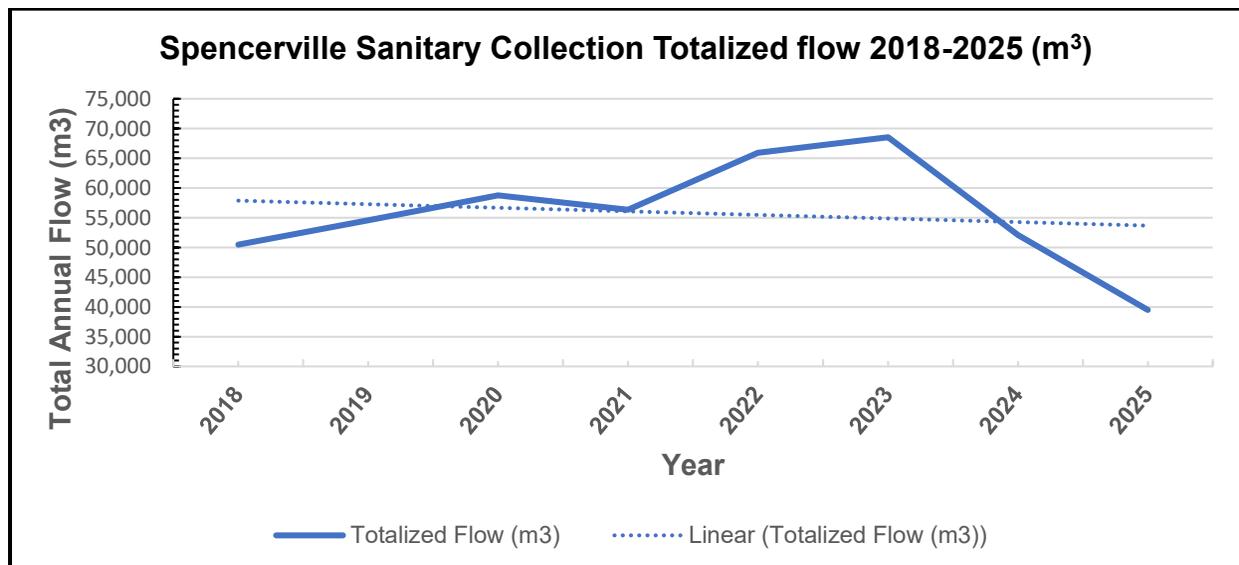


Industrial Park Sanitary Collection Consumption



Sanitary flow has declined steadily since 2023. Totalized flow decreased from 110,494 m³ in 2023 to 92,900 m³ in 2024, representing a 15.9% year-over-year reduction. Flow continued to decline in 2025 to 80,833 m³, a further 13.0% decrease from 2024. Overall, this represents a 26.8% reduction in flow between 2023 and 2025.

Spencerville Sanitary Collection Annual Consumption Review



Totalized flow into the Spencerville Lagoons decreased by approximately 24% in 2024 and by a further 24% in 2025. Sanitary maintenance hole lining was completed in 2024 and wet well sealing at station # 1 in 2025 were undertaken to address infiltration and reduce extraneous flows.

Inspection, Maintenance, Repair and Operational Problems

The following is a summary of inspection, maintenance, repair, and operational problems for the sanitary collection systems.

2025 Inspection, Repairs and Maintenance Summary

| CARDINAL SANITARY COLLECTION SYSTEM | | | |
|--|---------------------------|-----------------|--|
| Date | System | Asset ID | Inspection/Corrective Action |
| February 3, 2025 | Adelaide Stn | 604 | GAL Power completed semi-annual generator servicing. |
| February 20, 2025 | Adelaide Stn | 604 | Serviced and cleaned solenoid valve on generator. |
| March 3, 2025 | Adelaide Stn | 604 | Replaced solenoid valve on generator. |
| March 25, 2025 | All stations | All | ESA performed annual electrical inspections. |
| April 1, 2025 | Henry Stn | 603 | Inspected outfall, removed dead vegetation. |
| April 8, 2025 | Henry Stn Adelaide Stn | 603 604 | Clean Water Works high-pressure cleaned interior walls and removed grease. |
| May 1, 2025 | Adelaide Stn | 604 | GAL Power completed preventative maintenance on generator. |
| May 6, 2025 | Henry Stn | 603 | Falcon Security installed antenna for alarm communication. |
| July 3, 2025 | Hoy Street | 2648 | Two new sewer lateral services installed on Hoy Street. |
| July 22, 2025 | John St | 1141 | Sanitary manhole lid repaired and relevelled to asphalt. |
| August 18, 2025 | Adelaide Stn | 604 | GAL Power completed semi-annual generator maintenance and load testing. |
| September 3, 2025 | Adelaide Stn | 604 | Falcon Security upgraded alarm communicator. |
| August 25, 2025 | Waddell Street | 2644 | Contractor repaired sanitary manhole during road work reconstruction. |
| September 11, 2025 | County Road 2 | 1182 | Vacuumed out sanitary manhole. |
| September 23, 2025 | Waddell Street | 2644 | Vacuumed sanitary manholes post-road work construction. |
| October 28, 2025 | Adelaide Street | 1268 | Cut and capped sanitary service. |
| SPENCERVILLE SANITARY COLLECTION SYSTEM | | | |
| Date | System | Asset ID | Inspection/Corrective Action |
| February 3, 2025 | Station 1 | 2605 | GAL Power completed semi-annual generator servicing. |
| February 3, 2025 | Station 1 | 2605 | GAL Power replaced battery and charger on generator. |
| March 16, 2025 | Station 1 | 2605 | IECBL replaced faulty circuit breaker for North pump. |

| <u>Date</u> | <u>System</u> | <u>Asset ID</u> | <u>Inspection/Corrective Action</u> |
|---|---------------|-----------------|---|
| March 24-28, 2025 | Station 1 | 2605 | GAL Power replaced generator fuel supply tanks and repaired exhaust system (Capital). |
| March 25, 2025 | All Stations | All | ESA performed annual electrical inspections. |
| March 25, 2025 | Station 1 | 2605 | Inspected overflow pipework. All good. |
| March 29, 2025 | Spencerville | N/A | Relocated manhole cover after being struck. |
| April 8, 2025 | All stations | All | CWW high pressure cleaned interior walls and removed grease. |
| April 14, 2025 | Station 2 | 2606 | High level alarm not resetting- Falcon Security DCS panel reset. |
| May 21, 2025 | Station 1 | 2605 | IECBL replaced north pump relay. Pump pulled and unplugged. |
| June 14, 2025 | Station 1 | 2605 | IECBL replaced north pump starter relay and capacitor due to pump plugging. |
| June 24, 2025 | Station 2 | 2606 | Removed grease that was causing an echo loss. |
| July 2, 2025 | Station 1 | 2605 | Pulled and unplugged south pump. |
| July 9, 2025 | Station 2 | 2606 | Removed grease. |
| July 14, 2025 | Station 2 | 2606 | Transducer removed and cleaned. |
| July 23, 2025 | Station 2-3 | 2606/2607 | CWW high pressured cleaned pumping stations. |
| July 23, 2025 | Station 1 | 2605 | Pulled and unplugged north pump. |
| August 7, 2025 | Station 1 | 2605 | Pulled and unplugged north pump. |
| August 8, 2025 | Station 3 | 2607 | Pulled and unplugged pump. |
| August 19, 2025 | Station 1 | 2605 | GAL Power completed semi-annual generator servicing. |
| September 12, 2025 | Station 3 | 2607 | Pulled and unplugged pump. |
| September 19, 2025 | Station 1 | 2605 | GAL Power completed annual fuel tank system inspection. |
| September 19, 2025 | Station 1 | 2605 | Pulled and unplugged south pump. |
| September 23, 2025 | Station 1 | 2605 | Semi-annual inspection of overflow pipe. No issues identified. |
| October 7, 2025 | Station 1 | 2605 | Louis Bray Construction placed bypass system online to start pumping station upgrades. |
| October 27, 2025 | Station 2-3 | 2606/2607 | Pulled pumps, checked and reset shims- to reduce plugging. |
| November 13, 2025 | Ryan Street | - | Cut and capped sewer service. |
| November 20,21,24, 2025 | Station 1 | 2605 | Commissioning of pumping station after upgrades and placed online. |
| December 18, 2025 | Station 1 | 2605 | IECBL and Capital Controls relocated an ultrasonic sensor and adjusted pump operational levels. |
| INDUSTRIAL PARK SANITARY COLLECTION SYSTEM | | | |
| <u>Date</u> | <u>System</u> | <u>Asset ID</u> | <u>Inspection/Corrective Action</u> |
| - | - | - | - |

Cardinal Sanitary Collection Rehabilitation Program

Ongoing efforts are occurring to reduce extraneous flow into the collection and treatment systems. Below is a summary of capital maintenance activities since 2011.

| Year | Street | Project |
|-------------|---|--|
| 2011 | Joseph Street | CIPP lined. |
| 2011 | George Street | CIPP lined. |
| 2012 | East Street | CIPP lined. |
| 2012 | Victoria Street | CIPP lined. |
| 2012 | Middle Street | CIPP lined. |
| 2012 | Dundas Street | CIPP lined. |
| 2012 | Gill Street | Sanitary main and manholes replaced. |
| 2013 | Hoy Street | CIPP lined. |
| 2013 | Adelaide Street | CIPP lined. |
| 2013 | County Road 2 | CIPP lined. |
| 2016 | James Street | Sanitary main and manholes replaced. |
| 2017 | Walter St Easement | CIPP lined |
| 2018 | William-Henry Easement | CIPP lined |
| 2018 | Walker Street | Sanitary main and manholes replaced. |
| 2019 | Marjorie Street | CIPP lined. |
| 2022 | Helen/Walker to Helen/Shanly Road. | CIPP lined. |
| 2023 | County Road 2/St Lawrence to 740 County Road 2. | Sanitary main and manholes replaced. |
| 2024 | Sanitary manholes | Spin-casted three sanitary manholes to ensure structural stability and address infiltration. |
| 2025 | Wadell Street- Sanitary manhole | Sanitary manhole repaired during roadwork construction. Upper rings replaced and parged. |

Sanitary Main Flushing and CCTV Inspection Program

Sanitary mains are routinely cleaned to reduce the likelihood of backups. CCTV inspections are completed to assess and identify structural defects and prioritize mains for CIPP rehabilitation or replacement.

| CARDINAL SANITARY COLLECTION SYSTEM | | | |
|--|--|-------------------------|--------------------------|
| Year | Street | Cleaning | CCTV Inspection |
| 2018 | Walker-Adelaide-Marjorie | High Pressure cleaning. | Walker Street |
| 2019 | Dishaw-Canal-West | High Pressure cleaning. | N/A |
| 2020 | County Road 2 | High Pressure cleaning. | N/A |
| 2021 | George-Benson-Helen, William-Flett-Loyalist | High Pressure cleaning. | William and Helen Street |
| 2022 | East-Middle- Victoria- Dundas | High Pressure cleaning. | N/A |
| 2023 | Dundas West easement | High Pressure cleaning. | Dundas St |
| 2023 | New- Adelaide West | High Pressure cleaning. | New Street. |
| 2024 | County Road 2 | High Pressure cleaning. | N/A |
| 2024 | Reid | High Pressure cleaning. | Reid Street |
| 2024 | Walker South | High Pressure cleaning. | N/A |

| <u>Year</u> | <u>Street</u> | <u>Cleaning</u> | <u>CCTV Inspection</u> |
|---|--|-------------------------|------------------------|
| 2024 | Walker St South-Canal and West | High pressure cleaning. | CCTV inspected |
| 2024 | Meadowlands- Maple- St Lawrence | High pressure cleaning. | N/A |
| 2024 | James-New-Middle | High pressure cleaning. | CCTV inspected |
| 2025 | Waddell Street | High pressure cleaning | CCTV inspected. |
| 2025 | Dundas St West | High pressure cleaning | CCTV inspected. |
| SPENCERVILLE SANITARY COLLECTION SYSTEM | | | |
| <u>Year</u> | <u>Street</u> | <u>Cleaning</u> | <u>CCTV Inspection</u> |
| 2012 | Goodin-Bennett-South, Spencer-David-Cedar- Irving Water Streets | High pressure cleaning | CCTV inspected |
| 2020 | Center- Ryan-David, Cedar-Charles-Irving, South- Station 3 force main. | High pressure cleaning | CCTV Inspected |
| 2022 | Charles-David-Cedar, Irving | High pressure cleaning | CCTV Inspected |
| 2023 | County Road 44/Sloan to Pumping Station # 1. | High pressure cleaning | N/A |
| 2025 | Henderson-South-Water Streets | High pressure cleaning | CCTV inspected |
| INDUSTRIAL PARK SANITARY COLLECTION SYSTEM | | | |
| <u>Year</u> | <u>Street</u> | <u>Cleaning</u> | <u>CCTV Inspection</u> |
| 2016 | Giant Tiger Blvd. | High pressure Cleaning | CCTV Inspected |
| 2016 | County Road 2 | High pressure Cleaning | CCTV Inspected |
| 2020 | Commerce Drive | High pressure Cleaning | |

Summary of Calibration and Equipment Maintenance

Capital Controls is sub-contracted to complete annual calibrations and repairs to process equipment. The following work was completed during the 2025 review period.

| <u>Date</u> | <u>System</u> | <u>Activity</u> | <u>Corrective Action (if applicable)</u> |
|---------------|-----------------------------|--------------------|---|
| June 17, 2025 | Cardinal (Adelaide Station) | Annual Calibration | Both flow meters passed verifications. No issues were identified. |
| June 17, 2025 | Spencerville (Lagoons) | Annual Calibration | |

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> |
|--------------------|---------------|---|--|
| June 18 & 19 2025 | Cardinal | Sanitary lateral stoppage (County Road 2) | Augured and CCTV inspected. Issue on private property. |
| September 22, 2025 | Cardinal | Sanitary lateral stoppage- 626 County Road 2. | Private property issue. Homeowner to resolve. |

Alterations to Authorized System

Spencerville Pumping Station # 1 – Pump, mechanical, electrical, and process control upgrades were completed and commissioned on November 24, 2025. The system is now operating with Flygt pumps, a Pulsar level controller utilizing an ultrasonic sensor, and a secondary pressure sensor. In the event of a transducer or pressure sensor failure, the station will automatically operate using float controls, providing redundancy, and reducing the risk of overflows and sanitary sewer backups. A Director Notification Form was submitted on November 26, 2025.

Collection System Overflows and Leaks

Henry St Pumping Station- Asset ID 603

An overflow occurred at Henry Street Pumping Station on November 16, 2025, because of a power outage which was reported to the Southeastern Health Unit, the Municipality of South Dundas, and the Spills Action Centre (Reference No. 1-PSEM96). The overflow event occurred between approximately 14:30 and 14:45, with an estimated discharge volume of 5 m³ to the St. Lawrence River. Samples were collected, and the calculated loading concentrations are provided below.

| <u>Parameter</u> | <u>Loading Concentration</u> |
|-------------------------|------------------------------|
| Total Suspended Solids | 0.42 kg |
| Total Phosphorus | 0.005 kg |
| BOD ₅ | 0.22 kg |
| Total Kjeldahl Nitrogen | 0.055 kg |
| <i>E. Coli</i> | 15,484,500,000 |
| Disinfection | None |

Efforts made to reduce Collection System Overflows, Spills, STP Overflows and/or STP Bypasses.

Edwardsburgh/Cardinal proactively works to reduce infiltration and collection system overflows through preventative maintenance, repairs, and capital replacement projects.

Cardinal Collection System

- High pressure cleaning and CCTV inspection of sanitary mains.
- Routine inspection of sanitary manholes to confirm structural integrity is ongoing.
- High pressure cleaned sanitary pumping stations.
- Semi-annual servicing of generators.

Spencerville Collection System

- High pressure cleaning of sanitary pumping stations.
- High pressure cleaning and CCTV inspection of sanitary mains.
- Pump, mechanical and electrical upgrades completed at Spencerville Station # 1.
- Float system added as a third redundancy in the event of an ultrasonic or pressure sensor failure at Spencerville Station # 1.
- Infiltration repairs were completed at Spencerville Station # 1.

Monitoring

Sanitary pumping stations in Cardinal, equipped with Greyline level transmitters, are also fitted with a secondary pressure sensor to mitigate the impact of signal losses. This feature enhances redundancy and minimizes the likelihood of overflows or bypass events.

Routine inspections are conducted three times weekly at all sanitary pumping stations. Pump amperages are monitored to confirm proper performance. Pumps exhibiting elevated amperage levels are removed for cleaning and inspection. Additionally, high-level and power loss alarms are tested on a weekly basis to ensure the effective transmission of alarm signals.