

2025 Annual Performance Report

West Perth Municipal Sewage Collection System

CLI-ECA No. 060-W601





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Overview

This report has been prepared in accordance with Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) No. 060-W601. As required under the CLI-ECA, the Owner is to prepare an annual performance report for the Authorized System, which is submitted to the Director on or before March 31 of each year and covers the period from January 1 to December 31 of the preceding calendar year.

The Municipality of West Perth owns and operates the West Perth Municipal Sewage Collection system, which conveys wastewater from residential, commercial, institutional, and industrial areas in Mitchell to the Mitchell Wastewater Treatment Plant (WWTP). The collection system consists of approximately 41 km of sanitary sewers, three forcemains, and two Sewage Pumping Stations (SPS) located on Herbert Street and James Street. Wastewater flows by gravity to these pumping stations, where it is then pumped through dedicated forcemains to the treatment plant for processing. Treated effluent is ultimately discharged to the Thames River.

The system is designed to operate under both dry- and wet-weather conditions, with the SPS and the WWTP working together to manage variable flows. Under normal conditions, one pump at each SPS operates to convey flows to the plant. During wet-weather events and higher flow conditions, additional pumps automatically engage as required to manage increased flows. The WWTP is equipped with temporary storage to manage excess flows and prevent hydraulic overloading during periods when inflow exceeds treatment capacity.

Overall, the collection system is an integrated network of gravity sewers, SPS, and forcemains that continuously transfer wastewater to the WWTP while providing operational flexibility to manage peak wet-weather flows and protect downstream treatment processes.

Summary and Interpretation of Monitoring Data

Flows at both the Herbert St. and James St. SPS are continuously monitored through automated level and pump control systems. Operational data, including flow volumes are recorded. Select data is transmitted to the WWTP via SCADA for real-time monitoring and inclusion in daily, monthly, and annual reporting.

Table 1: Herbert St. SPS Flows

Herbert St SPS	Total Monthly Flow (MLD)	Average Daily Flow (MLD)	Maximum Daily Flow (MLD)
January	89.974	2.902	3.604
February	74.224	2.651	3.274
March	134.117	4.326	7.450
April	105.075	3.503	11.862
May	80.835	2.608	3.097
June	79.769	2.659	3.537
July	73.868	2.383	2.705
August	73.210	2.362	3.011
September	73.006	2.424	3.063
October	80.838	2.608	5.462
November	78.657	2.622	3.073
December	106.391	3.432	10.132

Table 2: James St. SPS Flows

James St SPS	Total Monthly Flow (MLD)	Average Daily Flow (MLD)	Maximum Daily Flow (MLD)
January	34.586	1.116	2.273
February	25.498	0.911	1.715
March	92.124	2.972	6.792
April	55.057	1.835	8.963
May	28.723	0.927	1.520
June	24.811	0.827	1.536
July	19.377	0.625	1.023
August	21.067	0.680	1.284
September	21.505	0.548	1.241
October	28.851	0.931	4.528
November	30.408	1.014	1.345
December	60.423	1.949	8.899

The flow data from the Herbert St. and James St. pumping stations demonstrates a clear difference between dry and wet weather conditions. During the summer months (June to September), flows at both stations remain low and consistent. Herbert St. averages around 2.3–2.7 MLD, while James St. averages about 0.5–0.8 MLD. Herbert St. consistently records higher flows as it is the town’s primary collection point, servicing roughly three of the town’s quadrants, including the fastest-growing residential areas. The limited variation between

average and maximum daily flows during this time suggests the system is mainly carrying normal sanitary wastewater, with limited inflow and infiltration.

Flows increase significantly during wet-weather conditions, particularly in March, April, and December at both stations. These increases are likely caused by snowmelt and rainfall entering the sewer system. The large differences between average and maximum daily flows suggest sudden inflow contributions, which are more characteristic of direct inflow sources rather than gradual infiltration. The flow patterns indicate that stormwater is entering the sanitary sewer system, likely through inflow and infiltration. While this cannot be confirmed from the data alone, this may include direct connections such as sump pumps, roof drains or other improper drainage connections.

These connections are undesirable as they unnecessarily introduce stormwater into the sanitary system, increasing hydraulic loading and placing additional demand on pumping and treatment infrastructure. During high-flow conditions, this can exceed system capacity and increase the risk of sewer surcharge, where flows may back up into basements and building plumbing. It also results in the treatment of water that does not require treatment, reducing overall system efficiency. Staff intend to investigate and address potential illegal connections to reduce excess flows and improve system performance.

Summary of Operating Problems Encountered and Corrective Actions Taken

The table below summarizes the operating problems encountered during the reporting period, along with the corresponding dates and corrective actions implemented.

Table 3: Operating Problems

Date	Operating Problem	Corrective Action Taken
January 8, 2025	Herbert St - Pump 3 faulted	Reset VFD - tested in manual
January 16, 2025	James St - Sump Pump air locked	Replaced drain line
February 9, 2025	Herbert St - Pump 3 faulted	Reset VFD - tested in manual
February 21, 2025	Herbert St - Emergency light fail	Replaced light
February 28, 2025	Herbert St - Pump maintenance	Pulled pump 1 and 3. Put new pump in pump 1 spot, pump 1 in pump 3 and pump 3 sent for service
March 8, 2025	James St - Flow meter failed	Reprogramed flow meter to register flow
March 11, 2025	James St - Flow meter failed	Adjusted display settings to display 8 digits

Date	Operating Problem	Corrective Action Taken
March 14, 2025	Herbert St - Pump 1 faulted	Reset VFD-tested in manual
March 15, 2025	Herbert St - Pumps faulted	Reset VFD's-tested in manual
April 2, 2025	Herbert St - Communication failure	Cleaned ice from antenna
September 9, 2025	Herbert St - Emergency light fail	Replaced receptacle
September 24, 2025	Herbert St - Pump 2 - Rail system failure	Installed new rail system for pump 2
September 30, 2025	Herbert St - Pump 2	Returned to service
October 8, 2025	James St - Pump 1	Returned to service

Summary of all Calibration, Maintenance and Repairs on the Municipal Sewage Collection System

The Municipality utilizes a computerized maintenance management system (CMMS) to track and document work orders, inspections, and maintenance activities related to the wastewater collection system. Monthly work orders completed at each pumping station include exercising valves; cleaning and inspecting bar screens; inspecting and maintaining floats and transducers; generator inspections; hatch inspections; general building checks; and pump inspections. Flow meters, lift equipment and generators are inspected and verified annually by a qualified third-party contractor. The table below summarizes the maintenance activities completed during the reporting period, along with the corresponding dates.

Table 4: Maintenance Activities

Date	Maintenance Activity	Corrective Action Taken
January 27, 2025	Herbert St - Lifting equipment maintenance	Annual inspection
January 27, 2025	James St - Lifting equipment maintenance	Annual inspection
April 9, 2025	Herbert St - Generator maintenance	Annual inspection
May 1, 2025	James St - Backflow preventer maintenance	Annual testing
May 7, 2025	James St - Generator maintenance	Annual inspection
June 24, 2025	James St - Wet well maintenance	Cleaned
June 24, 2025	Herbert St - Wet well maintenance	Cleaned
August 21, 2025	James St - Pump 1 maintenance	Pulled for service
September 9, 2025	James St - MCC maintenance	Cleaned MCC
September 12, 2025	James St - MCC maintenance	Cleaned MCC
September 25, 2025	Herbert St - Unit heaters maintenance	Inspection
September 25, 2025	James St - Unit heaters maintenance	Inspection
November 17, 2025	Herbert St - Flowmeter verification	Annual verification
November 17, 2025	James St - Flowmeter verification	Annual verification

Dead ends within the wastewater collection system were flushed in the spring and fall in 2025. Flushing is carried out by introducing approximately 400 gallons of water into each manhole to create adequate flow velocity, which helps remove accumulated debris, mitigate potential blockages, and maintain efficient system operation.

In 2025, a total of four manholes were repaired, two manholes were replaced, and approximately 50 metres of sanitary sewer main were replaced as part of ongoing system maintenance and infrastructure renewal efforts.

Summary of any Public Complaints Related to Sewer Works and Corrective Actions Taken

During the 2025 reporting period, a total of five customer complaints were received related to suspected blockages, sewer backups, or plumbing concerns within the wastewater collection system. Municipal staff responded to each complaint by conducting field investigations, including inspection of nearby manholes and sewer mains to confirm system performance and identify any potential issues.

In most cases, no deficiencies were identified within the municipal infrastructure, and issues were determined to be related to private plumbing, such as frozen service lines, improper connections, or maintenance-related concerns (e.g., grease buildup). When necessary, residents were advised to contact a plumber to address private property issues. Preventative measures, including sewer main flushing and lateral cleaning, were undertaken in select circumstances to maintain system performance and reduce the likelihood of recurring issues.

Summary of Alterations to the Authorized System

The following table is a summary of all alterations to the authorized system within the reporting period.

Table 5: Alterations of Authorized System

Street Name	Limits	Type of Work	Description
Wellington St.	Frank St. to Goderich Rail Tracks	Capital	The project involved the installation of a 200 mm diameter PVC DR-35 sanitary sewer on Wellington Street, extending 66.2 m north from Herbert Street. A new 200 mm diameter service was also provided to serve existing vacant industrial lands. Additionally, approximately 50 m of existing 200 mm AC pipe on Lane Street was replaced with new 200 mm PVC DR-35 sanitary sewer.
Anderson Lane	Park Lane to Anderson Lane dead end	Development	Installation of 155 m of 200 mm diameter DR-35 sanitary sewer, including two manholes.

Collection System Overflow and Spills of Sewage

There were no Collection System overflows and one spill reported in 2025.

On April 3, 2025, a spill occurred from a manhole on the inlet sewer for the James Street Pumping Station (ID 2807). The spill began at 04:09 and ended at 07:24, lasting approximately 3 hours and 15 minutes. An estimated 1,000 m³ of wastewater was released into Whirl Creek. The event was caused by elevated flows in the collection system due to heavy rainfall and snowmelt, which temporarily overwhelmed system capacity. Corrective actions included the installation of solid manhole risers on the inlet sewer manholes to reduce the likelihood of similar events in the future. Samples were collected following the spill, with results summarized below.

Table 6: Sample Results

Parameter	Result
BOD	3 mg/L
TKN	0.97 mg/L
Total Phosphorus	0.21 mg/L
Total Suspended Solids	ND
E. Coli	21,000 CFU/ 100mL

Summary of Efforts Made to Reduce Collection System Overflows, Spills, and/or STP Bypasses

The Environmental Services Department carries out regular preventive maintenance to reduce overflows, spills, and inflow and infiltration, and to keep the collection system operating efficiently. This includes inspecting and repairing manholes to prevent leaks and flushing dead-end sewers twice a year to remove solids buildup. Staff are also planning to develop a manhole inspection program and a sump pump education program to help address inflow and infiltration issues in the near future.