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March 1st, 2024

Dear Environmental Services Customer,

We are pleased to provide the 2023 Annual Performance Report for the City of Stratford's Wastewater Collection System located across the City of Stratford servicing the City's Water Pollution Control Plant. This report has been completed in accordance with the Environmental Compliance Approval #074-W601, Schedule E Section 4.6, issued October 6, 2022, and issued to the City of Stratford.

This report covers the period from January 1, 2023 to December 31, 2023 and will be made available on the City of Stratford website by June 1, 2024. Hard copies will also be available at our 82 Erie St. office on the 3rd floor.

For any questions or additional information regarding the report, please contact me at (519) 271-0250 ext. 222.

Yours truly,

A handwritten signature in blue ink, appearing to read "J. Bowes". The signature is stylized with a large initial "J" and a long horizontal stroke extending to the right.

Johnny Bowes
Manager of Environmental Services



2023

ANNUAL PERFORMANCE REPORT

City of Stratford Wastewater Collection System

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Executive Summary

The City of Stratford Wastewater Collection System (WWC) is owned and operated by the City of Stratford in accordance with Environmental Compliance Approval #074-W601, issued October 6, 2022. The wastewater collection system consists of approximately 180 kms of sanitary sewers, and 11 sewage pumping stations. The WWC system also includes all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances that are essential for the operation of the works. The Collection System is designated as a Class 2 system.

Throughout the reporting period (January 1, 2023 to December 31, 2023), operations staff worked diligently completing several maintenance, rehabilitation and renewal projects to ensure the adequacy of the City's wastewater system infrastructure.

No Ministry of Environment, Conservation and Parks (MECP) inspections occurred during the reporting period.

2023 Annual Performance Report – Wastewater Collection System

In accordance with the Environmental Compliance Approval #074-W601, Schedule E Section 4.6, The City of Stratford, as the Owner of the Municipal Wastewater Collection System, shall prepare and submit a performance report to the Ministry of the Environment, Conservation and Parks (MECP) on an annual basis.

Schedule E Section 4.6 of the ECA requires the Annual Performance Report to contain the following elements:

- (a) a summary and interpretation of all required monitoring data, including an overview of the success and adequacy of the Works and to determine if modifications to the system are required,
- (b) a description of any operating problems encountered, and corrective actions taken,
- (c) a summary of all calibration, maintenance, and repairs carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of collection system,
- (d) a summary of any complaints received during the reporting period and any steps taken to address the complaints,
- (e) a summary of alterations to the Authorized System within the reporting period authorized by the ECA including a list of alterations that pose a Significant Drinking Water Threat.

- (f) a summary of any collection system overflow or spills of sewage that occurred in the reporting period,
- (g) a summary of efforts made to reduce collection system overflows, spills and/or bypasses.

This following report was generated from the records maintained by The City of Stratford Wastewater Collection System (WWC) for the calendar year 2023.

(a) Interpretation of Monitoring Data

Licensed operators observe and monitor the sewage pumping stations regularly, during station checks/inspections and while performing scheduled preventative maintenance activities. Operators exercise due diligence in ensuring the Works and the related equipment are properly operated and maintained and any observations are being recorded in the facility digital logbooks (e.Ris). Please refer to Appendix A for examples of our e.Ris logbook system.

Monitoring and inspection of the wastewater collection system includes annual programs consisting of; sanitary main flushing and camera work, acoustic sewer inspections, and maintenance hole repair/replacement. All programs help to sustain an effective Capital Works program that coordinates with the Municipalities Water and Wastewater Rate Study on all assets associated with the wastewater collection system.

The table on the following page details the monitoring activities performed by WWC staff during the reporting period. Based on the data collected and reviewed, it has been determined that the system is performing adequately to meet demand and maintenance requirements. At this time there are no required major modifications required for the collection system. Continuous improvement and optimization will continue to be a priority for staff and management.

Table A – Summary of Monitoring Programs

Program Title	Program Description	Program Data From Reporting Period
Acoustic Sewer Inspections	Acoustic signals are sent through a sewermain segment between two MH's (transmitter and receiver). A score is given that will indicate if there are any obstructions to flow in the pipe that may need to be addressed.	Using the Sewer Line Rapid Assessment Tool (SL-Rat) Staff completed 18,400m of sewermain inspections during the reporting period.
Sewermain Flushing	Combination of reactive flushing due to sewer obstructions and mains flushed based of the SL-Rat inspection data.	Staff flushed approximately 2400m during the reporting period.
Maintenance Hole (MH) Inspections	MH condition assessments completed at the same time as SL-Rat Inspections.	Staff inspected 168 maintenance holes during the reporting period.
Maintenance Hole Washdowns	Flushing and hydrovac cleaning of known MH's with elevation or flow issues as a means of preventing flow obstructions.	There are 46 known MH structures on this maintenance list. They were all flushed twice in 2023 for a total of 92 MH washdowns.
Backflow Valve Inspections	The City has engineered backflow valves installed at critical points in the collection system on the north and south sides of the Avon River to prevent local main surcharges in the event of an issue in the trunk sewer.	Staff completed quarterly inspections and operation of the back flow valves which total 120 BFV inspections during the reporting period.
Air Release Valve Inspections	Inspections on air release valves that are connected to forcemains within the collection system.	Staff inspected the six system ARV's twice during the reporting period.
Generator Tests	Testing the portable and permanent WWC generators at the pump stations and the PW facility.	Staff inspected all 11 portable and permanent generators ten times (approx. every five weeks) during the reporting period.
Pumping Station and SCADA Alarm Inspections	General and detailed pumping station inspections at all eleven sites. These inspections look at health and safety and operational parameters.	Each pumping station was inspected weekly a confined space dry/wet well inspection completed once a month. Twice a year, staff tested all alarm components at the stations (floats, SCADA etc.).

(b) Operating Problems and Corrective Actions

All maintenance was performed on behalf of the Owner, by licensed Operators or qualified contracted services providers who exercise due diligence in ensuring the Works and the related equipment are properly operated and maintained to achieve compliance with the Approval.

Table B – Summary of Operating Problems and Corrective Actions

Operational Issue	Date	Corrective Action Taken
Burritt SPS: Pump 1 & 2 "Start" floats show alarm on HMI and call through to SCADA but are not activating pumps. Hi level still working.	06/01/2023	Issue referred to electrical contractor who replaced and reconfigured the floats to resolve the alarm issue on 07/17/2023.
Douro SPS: Well power vent and dry well float not working.	26/01/2023	Issues referred to City electrician who repaired the float and vent on 02/02/2023.
Douro SPS: Bypass start float for pump failed to shut off during run cycle.	20/12/2023	Issue referred to electrical contractor who replaced the float and resolved the issue on 21/12/2023.
Downie SPS: Pump #1 failure due to VFD overload	04/17/2023	Issue referred to City electrician who reconfigured the VFD settings and resolved the issue on 04/17/2023.
Downie SPS: Low float failure	04/24/2023	Issue referred to City electrician who replaced the float on 05/03/2023
Downie SPS: Transducer failure	08/24/2023	Issue referred to electrical contractor who replaced the pressure transducer on 08/28/2023.
Downie SPS: SCADA and PLC communication issue	08/30/2023	Issue referred to the City electrician who got the PLC communication to SCADA on 08/30/2023.
Dunn SPS: Drawdown occurring past pump volute	05/29/2023	Staff performed confined space entry and raised the Lo Float position to prevent drawdown below volute.
Erie SPS: Hour meter not functioning	Multiple Dates	Issue referred to electrical contractor made several attempts to resolve the issue. New meter installed on 11/23/2023.
Lorne SPS: HMI screen frozen	03/21/2023	Issue referred to City electrician who reset the HMI on 03/21/2023.
Lorne SPS: Float issues	Multiple Dates	Referred to electrical contractor who installed new pump start float. Rearranged Hi and Start float positions.

		Reset modem at SCADA. Issues resolved on 07/19/2023
Lorne SPS: Transducer Failure	08/01/2023	Issue referred to electrical contractor who replaced the pressure transducer on 08/01/2023
Taylor SPS: Several power outages and communication alarms	Multiple Dates	Staff responded to each outage with a portable generator (permanent genset to be installed in 2024)
Quinlan SPS: VFD unable to reset	06/02/2023	Issue referred to electrical contractor who replaced blown fuses on 06/02/2023
Quinlan SPS: VFD failure on Pump #2	15/09/2023	Issue referred to City electrician who installed new fuses in to Pump #2 VFD on 09/18/2023.
Quinlan SPS: Float and alarm communication issues	11/09/2023	Issues referred to City electrician who reconfigured dialer channels for ease of understanding the alarms
Vivian SPS: Inlet channel back up	01/05/2023	Staff performed CSE and cleared build up on grate.
Vivian SPS: Communication Alarms	06/06/2023	Issue referred to electrical contractor who replaced the modem and cables to the PLC on 06/06/2023.
Vivian SPS: Pump #1 start float would not turn off	07/05/2023	Issue referred to electrical contractor who pulled and reset the relay on 07/05/2023.
WWC System: Cooper St.	02/03/2023	CCTV contractor onsite for Cooper St. inspection. Protruding lateral discovered which was obstructing the main. Lateral fixed on 05/26/2023.
WWC System: Ontario St.	07/20/2023	CCTV and flushing contractor onsite to flush and inspect obstruction issues at Ontario and CH Meier. Issue determined to be grease from Montana's and Wendys. City By-law dispatched to inspect grease traps
WWC System: Albert St. and Queen St.	07/06/2023	Staff performed dye test to investigate sink hole. Determined to be a collapsed catch basin.
WWC System: Railway Ave.	07/17/2023	Staff performed dye test to investigate sink hole on railway. Issue around bottom lift rings. Staff returned and repaired the MH structure.

WWC System: Flow Monitoring	Multiple Dates	Staff coordinated with consultant to install and remove flow monitoring equipment to be used for flow study for the sanitary master plan.
WWC System: Maintenance Structure Repair	Multiple Dates	Staff completed nine maintenance structure repairs during this reporting period.
WWC System: Smoke Tests	Multiple Dates	Staff completed three system smoke tests for property owners to determine plumbing and connection issues
WWC System: Surcharged Sewer Mains	Multiple Dates	Staff responded to four sewer surcharge calls and resolved all issues at the time of response.

(c) Major Structure & Equipment Calibration, Maintenance and Repair

The table below provides a summary of activities carried out on major structures and collection system works that were not covered under the operational issues section (b) of this report.

Table C – Major Structure & Equipment Calibration, Maintenance and Repair

Major Structure	Work Performed in 2023
Air Release Valves	1. Replacement of Dunn Rd. SPS ARV 2. Replacement of Vic Inn SPS ARV 3. Rebuild of Quinlan Rd. SPS ARV's
Maintenance Hole Structures	Staff completed nine maintenance structure repairs during this reporting period. This includes MH lid replacements, interior structure rebuilds and rehab
Home Servicing Agreements	Staff completed ten Home Servicing Agreement excavations which consist of property lateral replacements, new installations and spot repairs.
Property Lateral Relining	Nine properties in the City had their sewer laterals rehabilitated using CIPP liners during this reporting period.
Directional Drilling	Staff installed a new 65m lateral to a previously unserviced property on Crooks St. and connected to a system MH via directional drilling.
Safety Grates	New steel safety grates were fabricated and installed at all SPS access points that were identified during a Health and Safety inspection as having inadequate fall protection.

Fall Arrest Equipment	All fall arrest and lifelin device (SLRs, Davit arm etc.) inspected during the reporting period.
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(d) Complaints

The number of complaints received during the Reporting Period, regarding the Wastewater Collection System, was fourteen (14). Complaints are itemized below with corresponding steps taken to address the complaints.

Table D – Summary of Complaints

Complaint and Location	Date	Resolution
Ontario St. - Request to have staff investigate back up.	01/23/2023	Staff met with building owner and plumbing contractor to advise on back up. Plumber rodded and CCTV inspected - grease build up present. Private issue, no concerns with sewermain.
Wellington St. - Ongoing sewer and odour issues.	02/15/2023	Staff met tenant and discussed options including smoke testing. Tennant to relay information not the building owner for next steps.
Queen St. - Sewer back up	03/14/2023	Staff spoke with homeowner regarding previous back up. Staff explained it is a private issue, the sewer line is the responsibly of the homeowner. Staff checked flow in sewermain, no issues.
Brunswick St. - Water in basement	03/17/2023	Multiple calls from homeowner to staff about water in the basement. Staff checked the sewermain, all clear. Owner to contact private plumber. Private issue.
Huron St. - Odour in store	04/12/2023	Staff checked to ensure service is open outside of the building. Drains are covered in store. Staff suggested they call a private plumber, also noted "farm smell" coming from neighbouring farm field. Private issue.
Devon St. - Odour complaint	05/10/2023	Staff responded to callout, no odour detected. Basement floor drain was found, instructed owner to ensure trap is primed for an air barrier. Down drafting from roof vent on the west side of house the cause. Private issue.

Butler Cove - Back up	05/31/2023	Staff responded, water coming back from drains and toilets. Contractor was flushing the sewer line in the area earlier in the day. Staff contacted the foreman, advised him of the issue, contractor to meet with homeowner and assess damage and resolution.
Huron St. - Back up	07/11/2023	Commercial property back up. Staff spoke with manager, discovered it was a storm related backup. Referred to property manager - Private issue.
Veterans Dr. - Backup	07/19/2023	Public call in for public toilets backing up. Confirmed no issues on city side by staff. Private issue.
Douglas St. - Noisy MH Lid	08/22/2023	Staff shimmed MH lid with wood to stop lid from moving.
Devon St. - Sewer Issues	08/25/2023	Plumber contacted the City for reoccurring sewer issues at private property. Staff inspected sanitary main, no issues. Staff provided plumber with City plumbing record of the property.
Front St. - Odour Issue	09/18/2023	Staff inspected mains on Grange and Front St. in response to sewer odour complaint. No concerns private issue.
Grange St. - Sewer Issues	11/23/2023	Staff met with owner who reported ongoing sewer issues. Staff explained pipe responsibility and gave information on city subsidy and sewer line replacement programs.
Ontario St. - Sewer Odours	12/11/2023	Staff working and the owner of neighboring property came by to discuss their odour issues. Staff gave recommendations including smoke testing.

(e) Alterations to the Authorized System

The table on the following page summarizes the projects that saw alterations to the collection system in 2023. Several of the major capital projects from the reporting period were water only and not sanitary. In addition, there were no new developments that connected to the system in 2023. This is expected to be much different in the 2024 Performance Report as the City expects to see more developments and capital projects connecting to the collection system in 2024.

Table E – Summary of Alterations to the Authorized System

Alteration to the Authorized System Project Name	Project Details	Does This Project Pose a Significant Drinking Water Threat (SDWT)?
Albert. St Reconstruction Capital Project (Phase 1)	<p>The replacement of all City infrastructure on Albert St. From Waterloo Ave. to Front St. This includes all sanitary, storm, water, roadway, sidewalks, and curb.</p> <p>Specifically to sanitary, this saw the replacement of approximately 520m of sanitary sewer mains and all property sanitary servicing within the work area to property line.</p>	No

(f) Summary of Collection System Overflows or Spills of Sewage

There were zero (0) environmental incidents such as by-passes, spills, or abnormal discharges from the collection system to be reported for 2023.

Table F – Summary of Collection System Overflows or Spills of Sewage

Overflow or Spill Location	Date	Volume and Duration	Loadings (TSS, BOD, TP, KJN, E.coli)	Disinfection (if applicable)	Adverse Impacts/ Corrective Actions
N/A	N/A	N/A	N/A	N/A	N/A

(g) Summary of Efforts Made to Reduce Overflows, Spills and Bypasses

Table G – Summary of Efforts Made to Reduce Overflows, Spills and Bypasses

Overflow/Spill/Bypass Reduction Project	Project Description	Does This Project Pose a Significant Drinking Water Threat (SDWT)?
Albert St. Reconstruction	The replacement of existing sewer mains and laterals which lower the inflow and infiltration into the collection system.	No
Sewermain Relining	The City relined approximately 2.2km of existing sewer mains in the reporting period which will result in reduced inflow and infiltration.	No

Subsidy Programs	Four properties disconnected their weeping tile of their homes from the sanitary lateral and installed a sump pump. Nine properties had their sewer laterals relined. These were all completed under the City's sewer subsidy programs and result in reduced collection system I&I.	No
Dish Installations	Staff installed several MH's that are in low elevation spots. The dishes will reduce the inflow and infiltration into the collection system	No
City Wide Leak Program	The City water department completed a system wide leak survey on potable water system components. Several leaks were found and repaired which will affect inflow and infiltration into the wastewater collection system.	No

Pollution Prevention Control Plan (PPCP)

The City has a PPCP from 2007 that was amended in 2016. This section of the Annual Performance Report highlights the ongoing work within the City of Stratford to improve its sanitary and collection system.

Upon completion of the flow monitoring program, sanitary sewer system model update, and update to the City’s Sanitary Master Plan in 2024, the City will present a complete updated Pollution Prevention and Control Plan to comply with all the requirements of MOE Procedure F-5-5.

PPCP Project	Project Details	Effectiveness of Action Taken
Sewer Re-lining	Annual Program with approximately \$800,000/year budgeted to complete sanitary main relining. This program has been in place since 2015.	Reduced I&I with the relining rehabilitation of older, failing sanitary mains.
Sanitary Master Plan	The update of the Sanitary Master Plan was awarded in 2022 to Civica Consulting. The plan is expected to be complete in 2024. The sanitary model will also be updated as part of this project and will include a Flow Monitoring Report.	This plan will provide detailed recommendations on the sanitary system performance. It will also contain data relating to flow I&I and recommendations to reduce this issue.
Albert St. Reconstruction	Albert St. Phase 1 was completed in 2023 which had the replacement of all sanitary mains and laterals to property line.	Replacement of this aging infrastructure will show a decrease in collection system I&I.

Subsidy Programs	The City budgets annually for subsidy programs available to resident for the disconnection of weeping tile systems from the sanitary system. In addition, there are subsidies available for the replacement and rehabilitation of sewer laterals.	Each year we are seeing more residents use the subsidies for relining the laterals. The City intends to have more public outreach to make residents aware of these programs as they all contribute to reduced I&I.
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Appendix A

Examples of e.Ris Digital Forms and Maintenance Tracking:

Vivian Station Check

Save New
2024-01-23 13:27:00

	Comments & History	Value
Wet Well		
Wet Well Inspection	<input type="checkbox"/>	CSE
Wet Well Condition General Components (Ventilation, Structure, Piping, Grating, Ladders Etc.)	<input type="checkbox"/>	No Concerns
Cleaning Required Grease Build Up/Debris	<input type="checkbox"/>	Yes
Cleaning Complete	<input type="checkbox"/>	Yes
Float Ball Inspection Proper Position/Clean & Unobstructed	<input type="checkbox"/>	No Concerns
Hi Level Float Test Physical Test of Float and Active Alarm	<input type="checkbox"/>	1:01pm
Grating Clean, Clear of Debris or Obstructions	<input type="checkbox"/>	Cleaned
Call Thru Test Contact SFD prior to Test	<input type="checkbox"/>	No

Station/Dry Well

Ventilation	<input type="checkbox"/>	No Concerns
Heating/Cooling	<input type="checkbox"/>	No Concerns
Gen Fuel	<input type="checkbox"/>	Enter value..
Gen Fluids	<input type="checkbox"/>	Select value...
Gen Battery	<input type="checkbox"/>	Select value...
Gen Hours	<input type="checkbox"/>	Enter value..
Dry Well Alarm Test	<input type="checkbox"/>	No
Dehumidifier	<input type="checkbox"/>	No Concerns
Sump Pump	<input type="checkbox"/>	No Concerns
Gen Test Vivian Generator Test Form	<input type="checkbox"/>	No

Control Panel

Breakers/Disconnects On/Not Tripped	<input type="checkbox"/>	No Concerns
Panel Lights	<input type="checkbox"/>	No Concerns
Pump 1 Amps Hand Start (Unless Running or Well Level is too Low)	<input type="checkbox"/>	14
Pump 1 Hours	<input type="checkbox"/>	2251
Pump 2 Amps	<input type="checkbox"/>	Enter value..
Pump 2 Hours	<input type="checkbox"/>	Enter value..
Pump 3 Amps	<input type="checkbox"/>	18
Pump 3 Hours	<input type="checkbox"/>	1372
Pump 4 Amps	<input type="checkbox"/>	18
Pump 4 Hours	<input type="checkbox"/>	1425
Combo Hours	<input type="checkbox"/>	27
Milltronics	<input type="checkbox"/>	No Concerns

Pumps/Piping/Valves

Pump 1 Condition Sound & Visual/Mechanical Condition, Piping & Valves (Gate, Check & ARV)	<input type="checkbox"/>	No Concerns
Pump 2 Condition	<input type="checkbox"/>	No Concerns
Pump 3 Condition	<input type="checkbox"/>	No Concerns
Pump 4 Condition	<input type="checkbox"/>	No Concerns

Comments

Comments Please Note All Concerns	<input type="checkbox"/>	Brame electric here to fix bathroom heater //
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Thursday, January 18, 2024					
☰	10:30	Service Investigation	Sanitary main on Cobourg St. measured @ ~ 7". Inspected basement, no c.o. access to service. Window to floor measurement ~ 56".	Mike Baker	2024-01-18 14:55:03
☰	08:30	Service Investigation Other Sanitary Activities	Prep for repairs to sanitary sewer lateral @ 26 Trow Ave.	Mike Baker	2024-01-18 14:51:38
☰	08:00	Other Sanitary Activities	Brett; Vivian bathroom reno.	Mike Baker	2024-01-18 08:21:24
👤	00:00		00:00:00-23:59:59 ORO: Sean Beech (sbeech) 00:00:00-23:59:59 OIC/Lead Hand: Mike Baker (pub-mb) 07:30:00-15:30:00 Operator: Brett Wallace (bwallace) 07:30:00-15:30:00 OIT: Josh Jongerden (jongerden)	Mike Baker	2024-01-18 07:54:18