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SEVERN

Collection System

Coldwater

2023 Annual Report



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Introduction

Township of Severn prepared the 2023 annual report for the Coldwater Wastewater Collection System in compliance with the Environmental Compliance Approval (ECA Number 148-W601, Issue 1, dated May 19, 2023). This report summarizes notable operating events, repair and maintenance, non-compliance issues, Influent quality, and flow data for 2023. This report is based on operating data collected and compiled by the Township of Severn. The Coldwater Wastewater Collection System consists of 5 sewage pump stations.

- Main SPS
- Reinbird SPS
- Hardware SPS
- Community Centre SPS
- Donlands SPS

All sewage pump stations have a control panel for pump and level controls. Two (2) submersible pumps are installed at each station and are run as lead lag, the exceptions being Reinbird SPS and the Main SPS. Reinbird SPS only contains one (1) submersible pump and Main SPS contains three (3) submersible pumps. Each station is equipped with a level transducer with float back-ups (lead and lag start) and a high-level float. In this system all stations are equipped with UPS battery backups and TOSIBOX for remote access and allows for communication with the Coldwater Water Pollution Control Plant so that trending can be monitored and to also receive station alarms. The Coldwater Water Pollution Control Plant has a SCADA program to trend pump stations.

Generators

Coldwater collection system has two (2) stand-alone generators. One is located at the Main SPS, and the other is located at Hardware SPS. Both are tested underload monthly. All stations have the capability to have portable generators connected for power outages in the system.

Raw Sewage Quality

Table 1 illustrates the monthly and annual average raw sewage quality results.

Table 1: 2023 Monthly Raw Influent Quality

Month	CBOD ₅ (mg/L)	TSS (mg/L)	Total Phosphorus (mg/L)	TKN (mg/L)
January	109	105	2.78	25.8
February	76	84	2.49	24.6
March	46	57	1.86	18.3
April	55	65	1.71	17.3
May	54	84	2.46	22.2
June	83	83	2.69	23.7
July	48	52	2.29	24.5
August	88	84	2.97	28.0
September	128	109	3.67	34.5
October	94	120	3.55	32.6
November	70	86	2.19	23.3
December	45	49	1.59	17.2
Average	75	81	2.52	24.3

Pump Station Capacity and Flow

Main pump station is equipped with (3) submersible sewage pumps, with a pumping capacity of 18.8 L/s at 16m T.D.H. The pump station pumps directly to the Coldwater Water Pollution Control Plant.

Reinbird pump station is equipped with (1) submersible sewage pumps rated at 60Hz/230V/5hp/14 FLA/ 3phase. The station pumps via forcemain to the River Street sewer.

Hardware pump station is equipped with (2) submersible sewage pumps. Each rated for 5hp/60Hz/3phase. The station is pumped to the River Street sewer.

Community Centre pump station is equipped with (2) submersible sewage pumps. Each rated for 60Hz/600V/5hp/ 5FLA/ 3phase. The station is pumped via forcemain to the Coldwater Road sewer.

Donlands pump station is equipped with (2) submersible sewage pumps. Each rated for 2.28 L/s at 10.4m TDH. The station is pumped via forcemain to the Gray Street sewer.

Influent Flows

The rated capacity of the Coldwater WPCP is 921 m³/day (average daily flow) with a peak flow rate of 3,420 m³/day, as listed in the C of A.

Table 2 shows daily and monthly average influent flows.

Table 2: Summary of Influent Flows

Month	Total Monthly Flow (m ³)	Average Daily Flow (m ³ /day)	Average Daily Flow (% of Rated Capacity)	Peak Daily Flow (m ³ /day)	Peak Daily Flow (% of Rated Capacity)	Peak Daily Flow (% of Rated Peak Flow)
January	22763	734	80%	1745	189%	51%
February	19493	696	75%	1164	126%	34%
March	23498	758	82%	1359	148%	40%
April	29081	909	99%	1532	166%	45%
May	17829	575	62%	890	97%	26%
June	16100	537	58%	1591	173%	47%
July	21039	679	74%	1218	132%	36%
August	13994	451	49%	659	72%	19%
September	10426	348	38%	423	47%	12%
October	18181	586	64%	1227	133%	36%
November	17104	570	62%	776	84%	23%
December	20823	672	73%	827	90%	24%
Average	19194	626	68%	1118	121%	33%
Max	29081	909	99%	1745	189%	51%
Total	230331					

Charts

Figure 1: Coldwater WWTP 2023 average monthly inlet flow total values are in (m³)

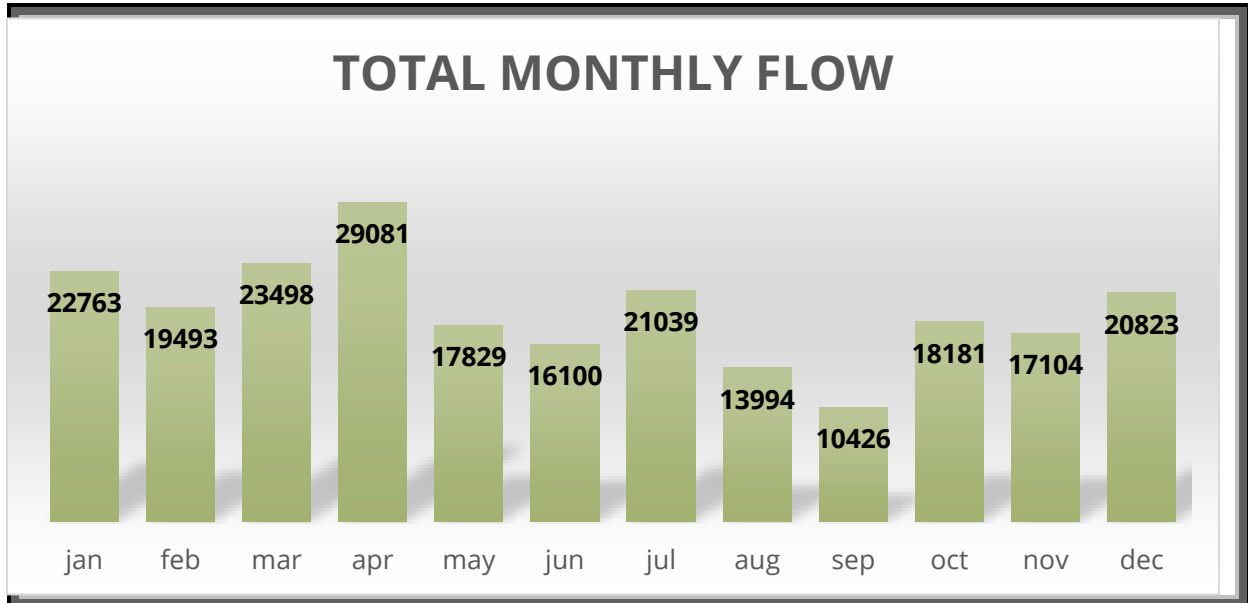
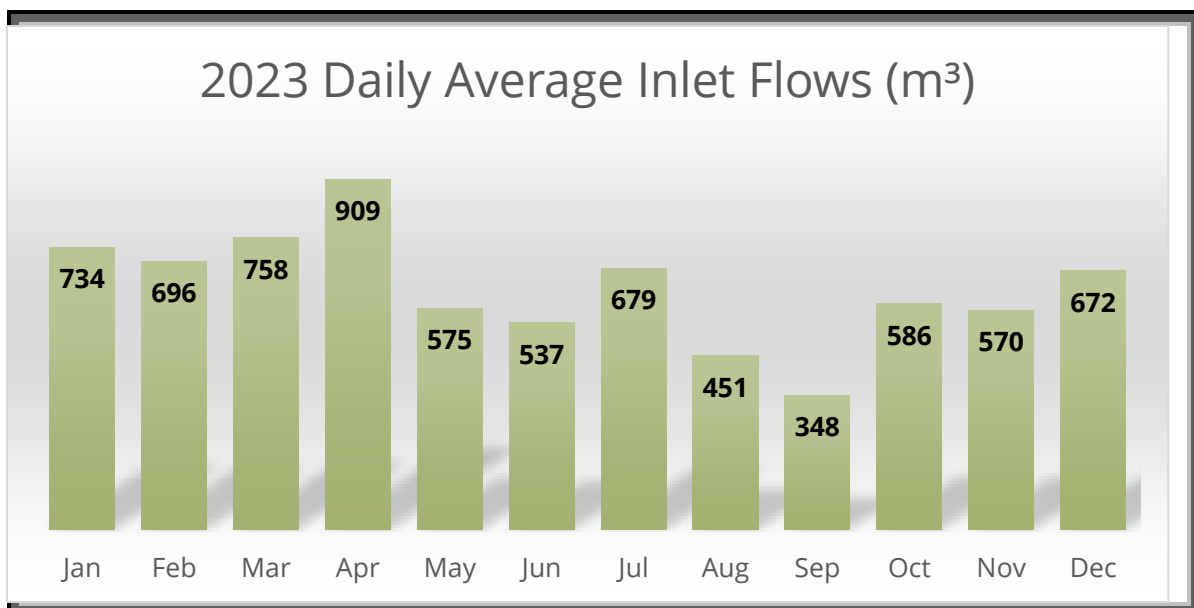


Figure 2: Coldwater WWTP 2023 average daily inlet flow total values are in (m³)



Maintenance Summary

Collection System

All maintenance in 2023 on major structures, apparatus and/or mechanical equipment is summarized below. The following is a list of preventative and emergency maintenance completed on the sewer system in 2023:

- Sewage Pump stations cleaned to remove grease, grit, and other debris.
- All sewage pumping station alarms were tested monthly.
- All floats in the sewage pumping stations were inspected and cleaned monthly.
- Debris removed from pumps in the sewage pumping stations as warranted.
- Approximately 25% of maintenance holes were inspected.
- All generators were serviced.
- Flushed approximately 1631 m of sewer main.
- Inspected 1427 m of sewer main by video camera to identify necessary repairs.
- Replaced check valve, base, and pump at River Street pump station.

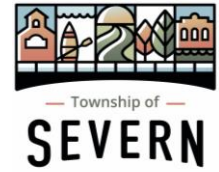
Summary of Complaints

There were three complaints in 2023 related to Municipal infrastructure.

- 2 residential sewage back-ups
- 1 residential sewage blockage

Summary of Calibration and Maintenance on Effluent Monitoring Equipment

Magnetic flow meters calibrated by a certified technician on April 13&19, 2023. All in-house and collection system monitoring equipment is calibrated based on manufacturer's recommendations.



Summary of By-Pass, Spills or Abnormal Discharge Events

There were no bypasses, spills, or abnormal discharge events in 2023.

System Alterations

There were no system alterations in 2023.