



— Township of —

SEVERN

Collection System

Westshore

2023 Annual Report



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Introduction

Township of Severn prepared the 2023 annual report for the Westshore 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.

Westshore wastewater collection system consists of 8 sewage pump stations.

- Wood Ave SPS
- Timberline SPS
- Bayou SPS
- Main SPS
- Lakeside SPS
- Bramshott SPS
- Grayshott SPS
- Aldershott 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.

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 Westshore Sewage Treatment Plant so that trending can be monitored and to also receive station alarms. The Westshore Sewage Treatment Plant has a SCADA program to trend pump stations.

Generators

Only the main pump station has generator backup which is powered from the main sewage treatment plant. All other 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	113	123	2.94	28.2
February	88	130	3.68	34.1
March	151	174	3.91	41.4
April	100	143	3.15	27.1
May	174	178	3.91	33.6
June	246	280	6.91	58.3
July	161	239	4.68	37.9
August	172	222	5.45	48.4
September	342	257	6.84	64.3
October	291	251	3.48	61.7
November	87	103	2.56	25.4
December	188	196	3.57	35.7
Average	176	191	4.26	41.3

Pump Station Capacity and Flow

Wood Avenue pump station has a 1.5 m diameter precast concrete wet well and valve chamber equipped with (2) submersible sewage pumps, each rated for 3.4 L/s at 4.3 m T.D.H. The pump station pumps through a 100 mm diameter force main to the sanitary maintenance hole on Bayou Road.

Bayou Pump station has a 1.5 m diameter precast concrete wet well and valve chamber equipped with (2) submersible sewage pumps, each rated at 11.0 L/s at

13.0 m T.D.H. The pump station pumps through a 150 mm diameter force main along Bayou Road to a maintenance hole at Hedgemere landing.

Timberline pump station has a 1.5 m diameter precast concrete wet well and valve chamber equipped with (2) submersible sewage pumps, each rated for 4.3 L/s at 9.3 m T.D.H. The pump station pumps through a 100 mm force main to a maintenance hole at Hedgemere Landing.

Lakeside pump station has a 1.5 m diameter precast concrete wet well equipped with (2) submersible sewage pumps, each rated at 3.5 L/s at 4.2 T.D.H. The pump station pumps through a 75 mm diameter force main to a maintenance hole at The Lane.

Bramshott pump station has a 1.5 m diameter precast concrete wet well and valve chamber equipped with (2) submersible sewage pumps, each rated at 11.5 L/s at 6.3 m T.D.H. The pump station pumps through a 150 mm diameter force main to a maintenance hole at Pleasant Road.

Aldershott pump station has a 1.8 m diameter precast concrete wet well equipped with (2) submersible sewage pumps, each rated at 6.5 L/s at 16.7 m T.D.H. The pump station pumps through a 100 mm diameter force main to a maintenance hole at Grayshott Drive.

Grayshott pump station has a 1.8 m diameter precast concrete wet well and valve chamber equipped with (2) submersible sewage pumps, each rated at 6.5 L/s at 16.7 m T.D.H. The pump station pumps through a 150 mm diameter force main to a maintenance hole at Brooks Lane.

Main pump station has a 2.4 m diameter precast concrete wet well and valve chamber equipped with (2) submersible sewage pumps, each rated at 42.5 L/s at 12.5 m T.D.H. The pump station pumps through a 250mm force main to the Westshore WWTP inlet works.

Influent Flows

The rated capacity of the Westshore WWTP is 1,390 m³/day (ADF - average daily flow), with a peak flow rate of 4,768 m³/day, as listed in the C of A.

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	30698	990	71%	1723	124%	36%
February	27225	972	70%	1434	103%	30%
March	31810	1026	74%	1412	102%	30%
April	34705	1157	83%	2138	154%	45%
May	28047	905	65%	1258	91%	26%
June	27330	911	66%	1882	135%	39%
July	32225	1040	75%	1474	106%	31%
August	24993	806	58%	1040	75%	22%
September	22075	736	53%	892	64%	19%
October	24149	779	56%	943	68%	20%
November	24798	827	59%	1119	81%	23%
December	31644	1021	73%	1482	107%	31%
Average	28308	931	67%	1400	101%	29%
Max	34705	1157	83%	2138	154%	45%
Total	34705					

Charts

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

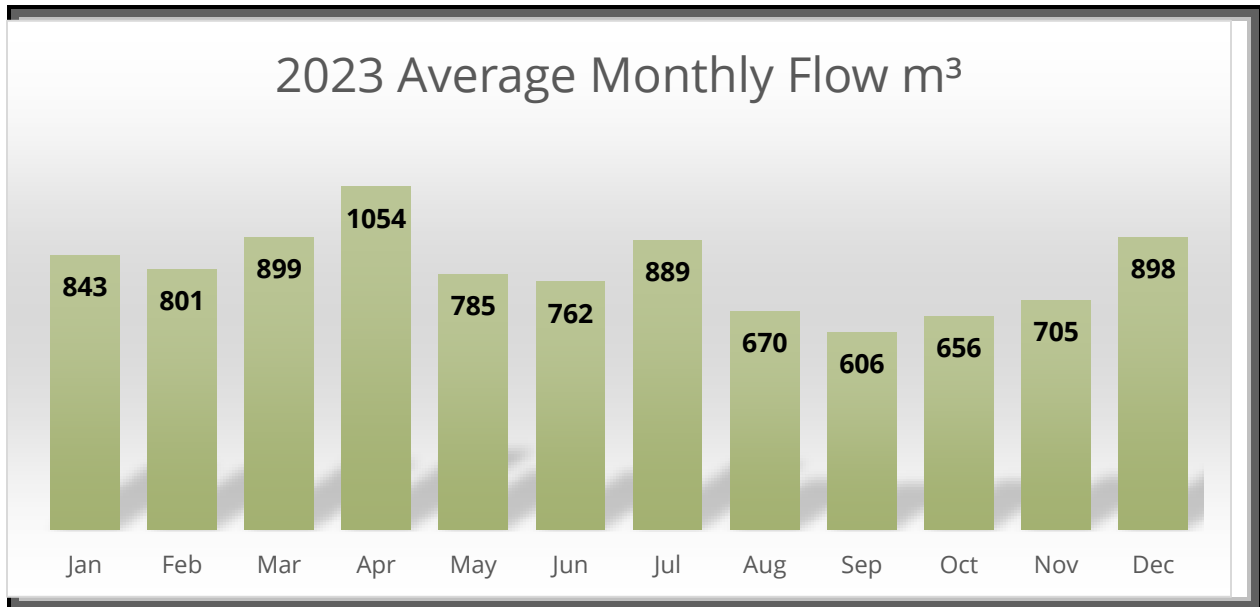
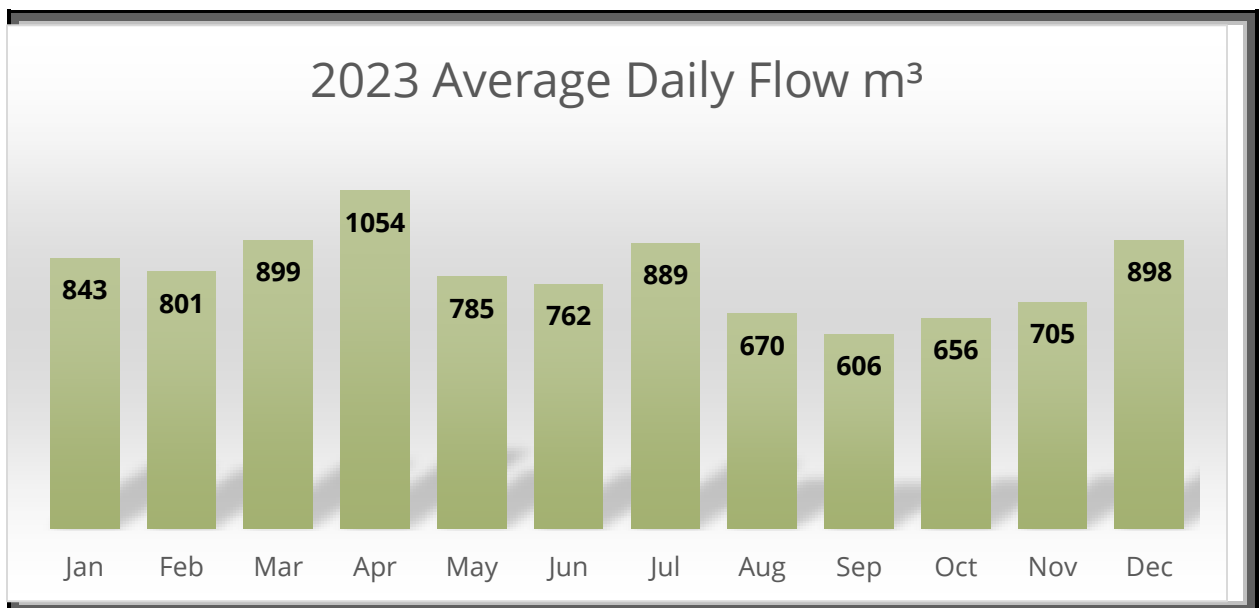


Figure 2: Westshore WWTP 2023 average daily inlet flow total values are in (m³)



Maintenace 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 2907 m of sewer main.
- Inspected 2907 m of sewer main by video camera to identify necessary repairs.
- Replaced check valve and installed new pump at Timberline pump station.

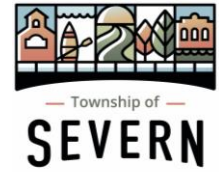
Summary of Complaints

There were four complaints in 2023 related to Municipal infrastructure.

- 4 residential sewage back-ups

Summary of Calibration and Maintenance on Effluent Monitoring Equipment

Magnetic flow meters calibrated by a certified technician on April 12, 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.