Wastewater Operations

Annual Performance Report

Innisfil Sanitary Sewage Collection System

Environmental Compliance Approval (ECA) #120-W601

~Town of Innisfil~

Reporting Year - 2023

Introduction

Effective January 1, 2016, the Town of Innisfil (TOI) transferred ownership of its municipal sewage works to InnServices Utilities Inc. (InnServices). InnServices is a municipal service corporation, wholly owned by the Town of Innisfil, charged with the responsibility to operate, maintain, and expand the municipal sewage works that service the Town of Innisfil.
The Board of Directors are appointed by the Shareholder and represent the Owners of the System.
InnServices has prepared this Performance Report for the operations conducted during the 2023 calendar year.

This Performance Report has been prepared to meet the following commitments:

- To provide InnServices Utilities Inc., Board of Directors, as "Owners" of the sewage works, a summary of the operations and maintenance of the Innisfil Sanitary Sewage Collection System for the period January 1 to December 31, 2023; and
- To comply with Schedule E, Condition 4.6 of Environmental Compliance Approval (ECA)#*120-W601,* issued March 28, 2023.

This Performance Report, provided to the InnServices Board of Directors, conveys information related to the performance of operations and maintenance, which aids decision making related to system expansion needs.

The Innisfil Municipal Sanitary Sewage System (referred to hereafter as the collection system) consists of works for the collection and transmission of sewage, two separate systems consisting of 132.48 kilometers of gravity sewers and 13.52 kilometers of forcemains and 10 (ten) sewage pumping stations, with discharge into the Lakeshore WWTP; and 12.32 kilometers of gravity sewers for discharge into the Cookstown Water Pollution Control Plant and 1.53 kilometers of forcemain for transmission of effluent to the outfall at Innisfil Creek.

Environmental Compliance Approval (ECA)

The Innisfil Sanitary Sewage Collection System is now subject to the conditions as set out in Environmental Compliance Approval (ECA) Number 120-W601, issued March 28, 2023. As such, there is a requirement to prepare an annual performance report which is submitted to the Director.

For the reporting period covered in this report, InnServices Utilities Inc. was defined as the Operating Authority of the collection system.

The collection system is operated under the following Certificates of Classification:

Class II Wastewater Collection Certificate #2450 (Lakeshore)

Class I Wastewater Collection certificate #1479 (Cookstown)

Monitoring Data

Normal pump station operation is unmanned and automated by use of electronics, electro-mechanical devices, and programmable logic controllers. Real-time condition data is monitored by a Supervisory Control and Data Acquisition (SCADA) system and recorded on a data server located at the Lakeshore Wastewater Treatment Plant (WWTP).

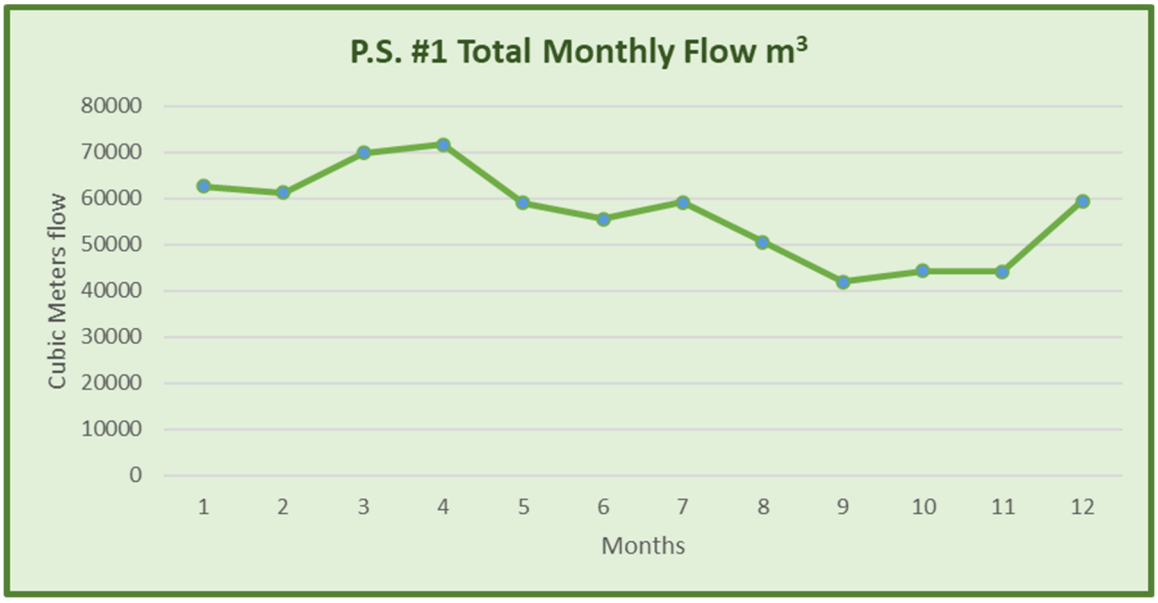
Ten (10) pump stations have flow meters and, in general, smaller pump stations have less complex control and metering systems. Station alarms will call out via telephone line or wireless network to an on-call operator 24/7/365. Alarms are annunciated at the Lakeshore WWTP.

The Cookstown collection system directs flow by gravity mains to the site pumping station at the Cookstown WPCP. Annual influent flow for 2023 was 235,863 cubic meters for the Cookstown portion of the collection system.

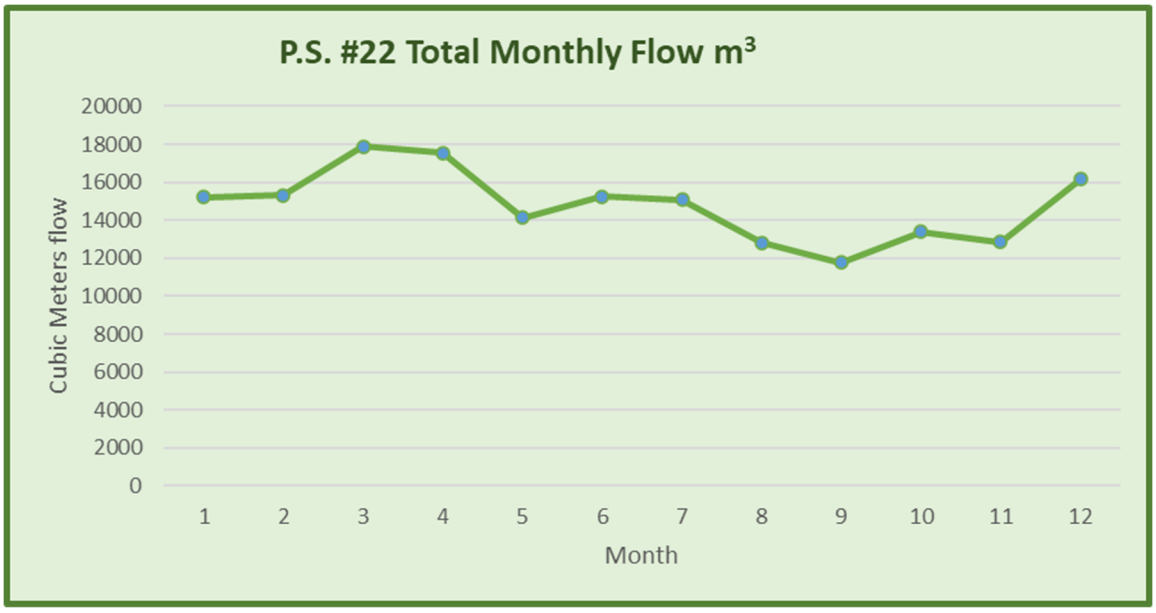
Monthly flow summaries for the pump stations that direct influent flows terminating at the Lakeshore WWTP are depicted in Table and Graphs 1-4 on the following pages. Annual influent flow for 2023 was 3,851,302 cubic meters for the Lakeshore portion of the collection system.

MonthlyTotal Flow m^3				
MONTH 2023	**P.S.#1**	**PS#22**	**P.S.#2**	**P.S.#3**
January	62,644	15,204	1,257	268,476
February	61,263	15,304	1,213	256,012
March	69,838	17,885	1,372	297,440
April	71,706	17,536	1,533	307,584
May	59,140	14,121	1,129	258,042
June	55,601	15,241	1,124	252,426
July	59,150	15,072	1,562	278,050
August	50,554	12,812	1,223	230,011
September	41,937	11,757	737	195,858
October	44,288	13,388	733	220,015
November	44,263	12,861	615	223,304
December	59,514	16,145	1,082	278,078
TOTAL	679,898	177,326	13,580	3,065,296
Min	41,937	11,757	615	195,858
Max	71,706	17,885	1,562	307,584
Avg.	56,658	14,777	1,132	255,441

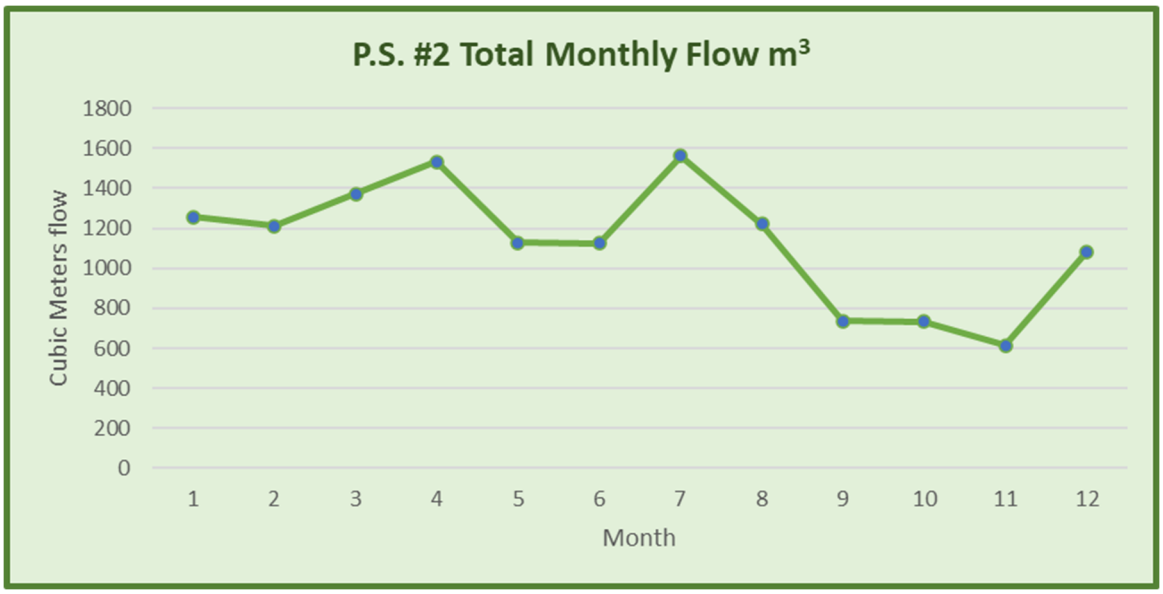
Table 1: Monthly flow summaries in Cubic Meters (m^3)



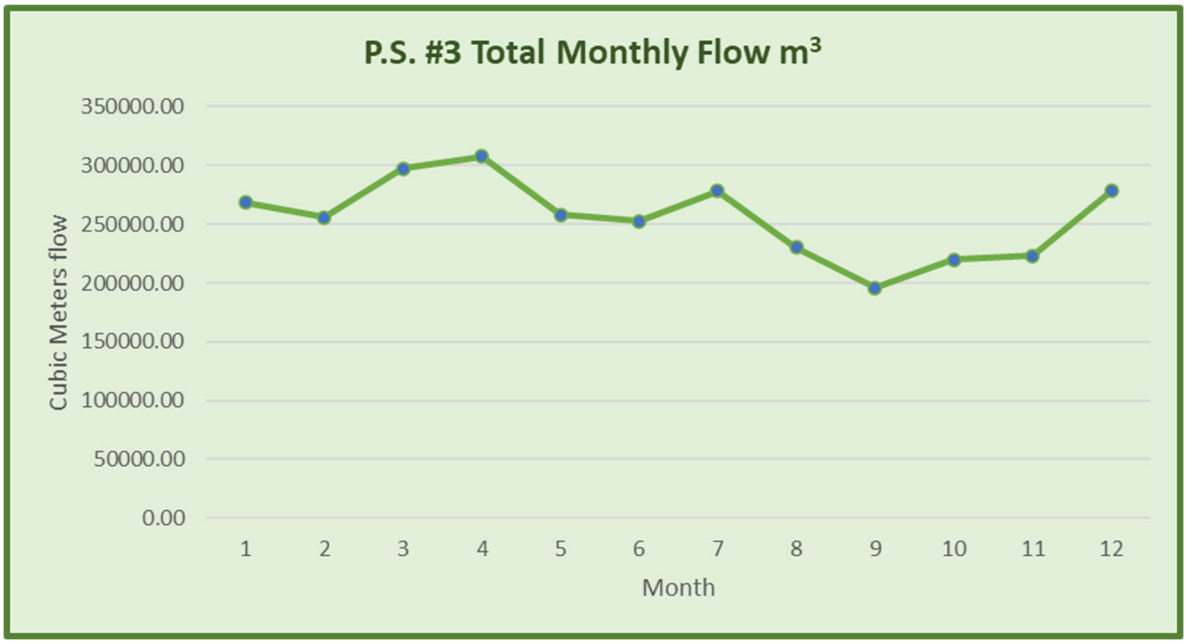
Graph 1: Pump Station 1 Monthly flow summary



Graph 2: Pump Station #22 Monthly flow summary



Graph 3: Pump Station #2 Monthly flow summary



Graph 4: Pump Station #3 Monthly flow summary

Operational Issues and Corrective Actions Taken

In general, the accumulation of non-organic debris (i.e., wipes, and personal hygiene products) are plugging pumps and causing pump failure. Since the onset of COVID-19, the system is also experiencing an increase of organic material such as grease. This has been compounded and continues to cause problems. A public education program through social media and community engagement continues to raise awareness.

Much of the equipment, structures mechanisms and apparatus forming the Works are aging and require frequent assessment. Repair and/or replacement is completed, when necessary, those items of larger scope are put forth as Capital Works Projects.

Calibration, Maintenance and Repair Activities

Annual verifications/calibrations of flow monitoring equipment were performed in October 2023 by a third-party instrumentation and controls technician. This included influent and Parshall flume flow monitoring equipment.
All were found to be within the tolerance of the equipment as recommended by the manufacturer.

The Maintenance Mechanic and Operations Staff perform a variety of scheduled, preventative, predictive and reactive maintenance on a variety of equipment throughout the year. Equipment replacement and upgrades contribute to greater process control at the Plant and increased capacity in the collection system.
Notable maintenance activities in 2023 include:

- PS3 – new variable speed drive installed.
- Routine bar screen clearing at Pump Stations 1 (1236 Maple Road), 3 (1692 Cedar Grove Ave.), and 4 (2298 Crystal Beach Road)
- Annual pump station wet well clean out programs.
- Regular flushing and CCTV (closed-circuit television) inspection program of sanitary mains. All sanitary mains in the central area of Alcona were flushed and inspected via CCTV in 2023 under InnServices annual capital program.
- Sewer laterals inspections are done with a lateral launch and repairs made if deficiencies are discovered from the main to the property line.
- Condition assessment of MH at multiple locations leading to a repair/replacement plan as required.
- Continue to conduct specific flow monitoring of areas in Alcona area sewers for flow monitoring.

Complaints Received & Steps taken to address Complaints

Customer Service inquiries are received and logged through the Town of Innisfil. There were 25 inquiries related to operation of the LS WWTP and collection systems in 2023. All incidents were resolved and logged.
There were 6 calls for sewer back-ups. All back-ups were found to be on homeowner's side.
The one issue was a sag on the lateral service found on the town side, which was repaired by InnServices.
The remaining inquiries involved other sewer problems, flushing concerns and an odour complaint.
In 2023, there were zero backups in the sanitary sewer mains causing surcharge.

Summary of Alterations

Upgrade works at Pump Station #4 (2298 Crystal Beach Road) were initiated prior to the issuance of the Consolidated Linear Infrastructure (CLI) ECA through an amended ECA process. The works described in the ECA have been completed. The Director's Notification was filed with the Ministry July 24, 2023.

ECA #	Location	Date of Issue	Status of upgrade
6459-C2JJ6P	2298 Crystal Beach Road (PS #4)	2021-05-10	Complete -Director's Notification 2023-07-24

The InnServices Engineering team continues to work on environmental assessment activities for several proposed sewage pump stations (SPS).

Collection System Overflows and Spills

There were zero (0) incidents in 2023.

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

InnServices Utilities Engineering and Operations have been working on several projects and initiatives to eliminate Bypass/Overflow incidents. These include, but are not limited to the following ongoing efforts:

- IUI Engineering is working with TOI Development Engineering to ensure all un-assumed sanitary maintenance holes are equipped with bulkheads. Implemented for Alcona capital, Sleeping Lion Phase 3, LSAMI P1/P3, Alcona Downs 4, Grand Sierra, Innis Village and underway for upcoming projects: LSAMI P4, Corm Street condos, LSAMI P2 Ph4, Melrose servicing planned for construction in 2024, Orbit Ph1A servicing planned for construction in 2024.
- External Maintenance Hole (MH) wrapping of horizontal joints on recent Capital projects and Development projects underway. All new development projects are still following the MH wrapping requirements.
- Flow Monitoring of active subdivision under progress in Alcona Capital, Sleeping Lion Phase 3, Alcona Downs 4, Innis Village, LSAMI P3 and select condominium developments.
- Working on a pre-qualified list of approved contractors to complete large sanitary sewer connections for site plans and developments.