innservices

Wastewater Operations

Annual Performance Report

Cookstown Water Pollution Control Plant (WPCP)

Environmental Compliance Approval (ECA) #9741-B4GRWZ

Town of Innisfil

Reporting Year – 2025

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 Summary Report for the operations conducted during the 2025 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 Cookstown Water Pollution Control Plant that took place during the reporting period of January 1 to December 31, 2025; and
- To comply with Condition 11 of ECA #9741-B4GRWZ, issued May 29, 2019.

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 Cookstown Water Pollution Control Plant (WPCP) is a package extended aeration facility constructed in 1986, located at 59 Victoria Street West in Cookstown.
The treated effluent is discharged seasonally, as guided by the ECA, to Innisfil Creek through a combination of force and gravity mains. The collection system consists of approximately 14 km of gravity sewers serving the community of Cookstown.

Environmental Compliance Approval (ECA)

For the reporting period covered in this report, InnServices Utilities Inc. was defined as the Operating Agency of the Cookstown Water Pollution Control Plant (WPCP) and the associated collection system.

The treatment facility and collection system are operated under the following Certificates of Classification:

Class II Wastewater Treatment Certificate #950
Class I Wastewater Collection Certificate #1479

The Cookstown WPCP operated under Environmental Compliance Approval (ECA) #9741-B4GRWZ issued May 29, 2019. The ECA identifies a design capacity with all treatment trains in operation of 825 m^3/day.

Consolidated Linear Infrastructure ECA Number 1220-W601 was issued on March 28, 2023, for the Cookstown sewage collection system as part of the Innisfil Sanitary Sewer Collection System.

Influent Monitoring Data

The 2025 average daily influent flow was 620 m^3 or 75.15% of plant capacity.

The plant received a raw influent total of 226,174 m^3 for the entire year.

The 2025 maximum daily flow occurred April 3 when the flow recorded was 3435.8 m^3.

The overall removal efficiency is 97.12%.

Cookstown Flows	Design Capacity	80% of Rated Capacity	2025 Flows	Performance
Daily Flow	825 m³/ day	660 m³/ day	620 m³/day Avg. Daily Flow	75.15% of Design
Peak Flow	2634 m³/day	2107 m³/ day	3435.8 m³/day	130% of Design*
Annual Total	301,125	------	226,174	

Table1: 2025 Influent design capacity and actual flow comparisons

* Environmental Assessment has been opened to explore options to address increased influent flows.

The following charts demonstrate the monthly influent flows and 10-year trending for the Annual Average Daily flows.

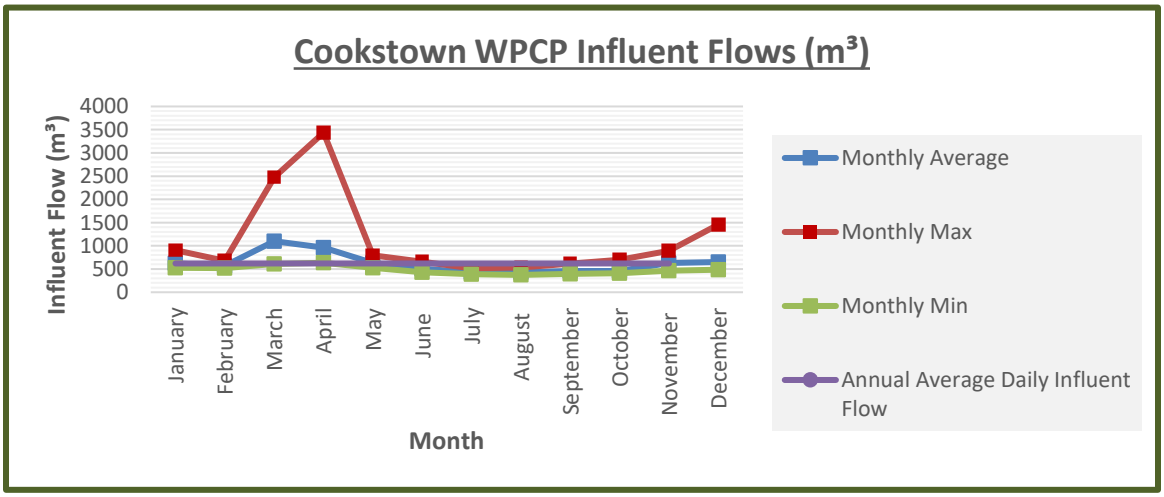

Chart 1: Monthly influent flows in cubic meters (m3)

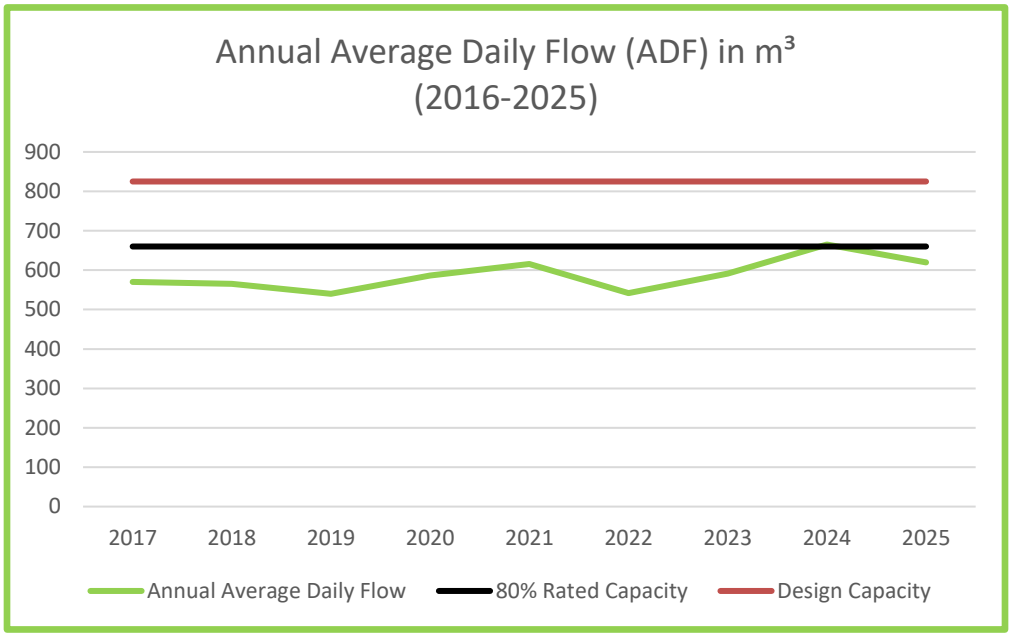

Chart 2: 10-year Annual Average Influent Daily Flow

Monitoring of influent requires monthly sampling. The annual averages for influent and effluent parameters and the removal efficiencies are depicted in this table, followed by a table depicting removal efficiencies of the past five (5) years.

Cookstown WPCP Parameter-Influent	Sample Type	Minimum Frequency	Annual Average Influent (mg/L)	Annual Average Effluent (mg/l)	% Removal Efficiency
CBOD5	Grab	Monthly	219.12	4.87	97.78
Total Suspended Solids (TSS)	Grab	Monthly	297.12	7.44	97.50
Total Phosphorus (TP)	Grab	Monthly	6.12	0.05	99.18
Total Kjeldahl Nitrogen (TKN)	Grab	Monthly	59.30	2.90	95.11
Total Ammonia Nitrogen	Grab	Monthly	49.75	1.98	96.02

Table 2: Annual averages for influent and effluent flows, removal efficiencies

Cookstown WPCP Parameter-Influent	Removal Efficiency 2025	Removal Efficiency 2024	Removal Efficiency 2023	Removal Efficiency 2022	Removal Efficiency 2021
CBOD5	97.78	98.41%	98.60%	98.90%	98.30%
Total Suspended Solids (TSS)	97.5	97.60%	98.40%	99.00%	98.30%
Total Phosphorus (TP)	99.18	99.52%	99.30%	99.00%	98.30%
Total Kjeldahl Nitrogen (TKN)	95.11	95.73%	94.70%	95.70%	91.80%
Total Ammonia Nitrogen	96.02	97.21%	97.50%	96.90%	92.90%

Table 3: 5-year removal efficiencies

Final Effluent Monitoring Data

A total of 236,544 m^3 of final effluent was discharged from the polishing lagoon during the discharge periods of January through May, and October through December 2025.

Design Objectives were achieved more than the required 50% of the year (100%), with no deterioration of the Final Effluent quality trending.

Annual Average Effluent Concentrations for CBOD5, Total Suspended Solids and Total Phosphorus were below Final Effluent Design Objectives as per Schedule B of the ECA.

The *annual* average concentration for Total Ammonia Nitrogen was 1.98 mg/L, well below the annual ECA limit of 4.0 mg/L.

A summary of the plant's performance and loading calculations in 2025 relative to the ECA Compliance Limits is in the following tables and charts.

Month	Total Phosphorus (limit 300 kg/yr.)		Total Ammonia Nitrogen	
	Monthly Avg. *1.0 mg/L*	Loading *Kg/month*	Monthly Avg. *4.0 mg/L*	Loading *Kg/month*
January	0.03	0.75	2.30	57.37
February	0.03	0.41	2.50	34.29
March	0.04	0.19	3.80	17.98
April	0.06	6.92	3.80	438.14
May	0.055	0.16	2.45	6.91
October	0.03	0.76	0.40	10.08
November	0.10	2.40	0.90	21.60
December	0.03	0.77	2.00	51.65
Total/yearly Avg.	**0.05**	**11.09**	**2.27**	**638.02**

Table 4: Effluent loading concentrations Total Phosphorus and Total Ammonia Nitrogen

Month	CBOD		Suspended Solids	
	Monthly Avg. *25 mg/L*	Loading *Kg/month*	Monthly Avg. *25 mg/L*	Loading *Kg/month*
January	4	100	4	100
February	4	55	2	27
March	6	28	9	43
April	7.8	899	12	1384
May	5	14	4.5	13
October	4	101	2	50
November	4	96	16	384
December	4	5	13	336
Total/year	**5**	**1397**	**8**	**2336**

Table 5: Effluent loading concentrations for CBOD and Total Suspended Solids

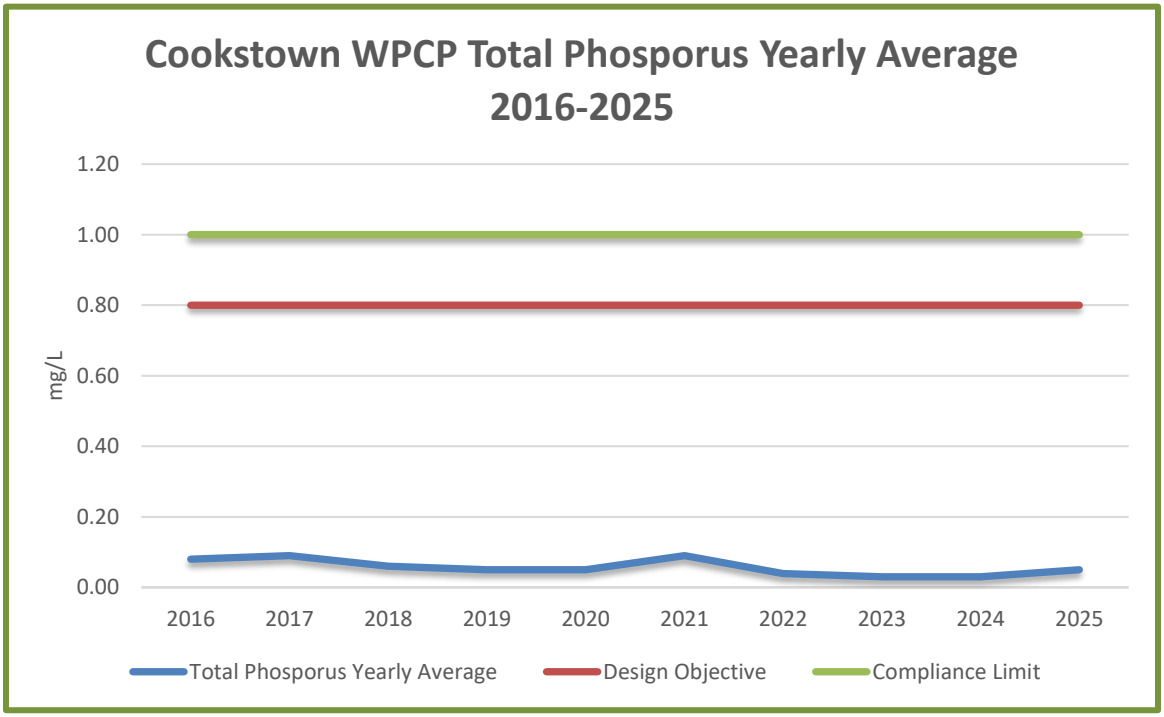

Chart 3: 10-year Annual Average Concentration- Phosphorus

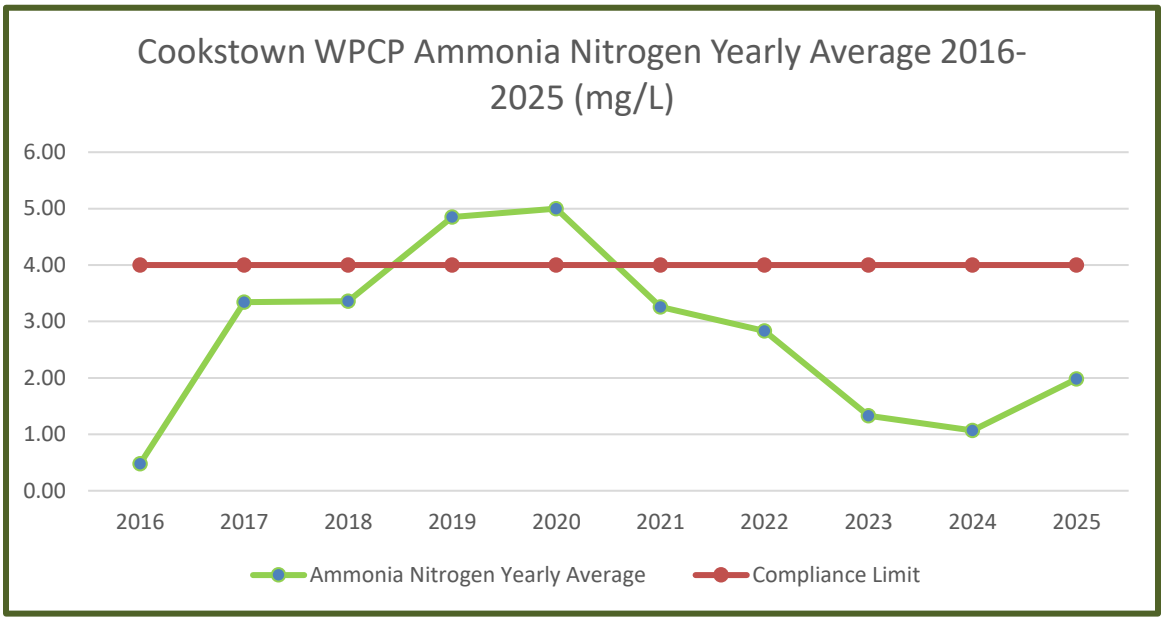

Chart 4: 10-year Annual Average Concentration-Total Ammonia Nitrogen

The table below identifies the Compliance limits and Design Objectives as set out in the ECA and the corresponding 2025 Effluent Quality data:

Cookstown WPCP Effluent Parameter	ECA Compliance Limits Annual Avg. Concentration	Design Objective Annual Avg. Concentration	2025 Treated Effluent Annual Average Concentration
$CBOD_5$	25 mg/L	15 mg/L	4.87 mg/L
Total Suspended Solids	25 mg/L	15 mg/L	7.44 mg/L
Total Phosphorus	1.0 mg/L	0.80 mg/L	0.05 mg/L
Total Phosphorus Load	300 kg/year	n/a	kg/year
Total Ammonia Nitrogen (Ammonia Nitrogen + Ammonium Nitrogen)	4.0 mg/L or Monthly Avg. Concentration in April, Oct. Nov.	n/a	2.27 mg/L

Table 6: 2025 data compared to Compliance limits and Design Objectives

The table below is a summary of discharge volumes in 2025, January to May and October to December.

Effluent Discharge 2025 Cookstown WPCP		
Month	Maximum Discharge Rate	Total Discharge (m^3)
January	10 L/sec	24,942
February	10 L/sec	13,716
March	10 L/sec	4,731
April	60 L/sec	115,301
May	10 L/sec	2,819
October	10 L/sec	25,206
November	10 L/sec	24,001
December	10 L/sec	25,827
Total		**236,544**

Table 7: 2025 Effluent discharge volumes in cubic meters (m^3)

Monitoring Schedule

Influent sampling is required at a minimum frequency of monthly by grab sampling. The influent sampling point is located at the Inlet Works.
Monitoring of final effluent is done monthly during the designated discharge period (October 1 –May 31) except for April. In April, effluent is required to be sampled once per week. The first sample is collected one day after commencement of lagoon draw-down, and the last within one day before the holding level in the lagoon is attained.
The pH and temperature of the Final Effluent is determined in the field at the time of sampling.
Sampling type is determined by the parameter and includes grab, probe, or analyzer.
Samples for final effluent reporting were collected from the sample ports on the discharge side of the effluent pumps at the outlet of the storage pond.

Flow rates for influent and final effluent discharge are monitored by continuous flow measuring devices.

As per Condition 9.1.b of the ECA, effective January 2025, Monday was designated as the scheduled day for sampling, except for statutory holidays when this may shift to the next appropriate day. This schedule was maintained to the end of 2025. The scheduled sample day will be rotated to Wednesday (in January 2026) and is expected to be maintained for the next year.

Operational Issues and Corrective Actions Taken

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.

Aeration blower motors failure caused the Dissolved Oxygen level to drop. This also caused ammonia levels to rise to a level harming the biological treatment process. The plant needed to be re-seeded (introducing healthy microbes in activated sludge from our Lakeshore WWTP) to restore function, and faulty blower motors were replaced.

Maintenance Activities

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.

Significant maintenance activities in 2025 include:

- Added sump pump to influent chamber to mitigate water infiltrations
- Transmitter for influent flowmeter replaced
- Regular maintenance and cleaning of aeration basin within treatment facility
- Replaced aeration blower motor #4
- Replaced aeration blower motor #2
- Received two (2) loads of seed from Lakeshore WWTP
- Replaced aeration overload contactors and switch gear
- Wet well cleaning
- Replacement of return sludge flow meter

Effluent Quality Assurance or Control Measures Undertaken

Analytical tests to monitor required parameters are performed by SGS Environmental Services, which is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with the recognized International Standard ISO/IEC 17025:2005.
Plant operation and performance is monitored by licensed operators.
An in-house lab facility has been set up in the Cookstown WPCP Control Building for monitoring essential parameters. There is a dedicated operator assigned to analyze regular monitoring parameters to assist plant operation. Use of an on-site high-range TAN (Total Ammonia Nitrogen) analyzer has enabled operators to evaluate the state of the clarifier and lagoon in real time. The frequency of in-house testing for parameters has been increased. The non-regulated parameter Dissolved Oxygen (DO) is being closely monitored at the aeration tank.

Calibration & Maintenance on all Influent and Final Effluent Monitoring Equipment

Annual verifications/calibrations of flow monitoring equipment were performed in October 2025 by a third-party instrumentation and controls technician. This included influent and final effluent monitoring equipment.
All results were in compliance with the recommendations provided in the manufacturer manual.

Summary of efforts made to achieve Design Objective

Design Objectives were achieved 100%, more than the required 50% of the year.
The 2025 average daily influent flow was 620m^3, which equates to 75.15% of the plant's design rated capacity of 825m^3 per day. An Environmental Assessment has been opened to explore options to address increased influent flows.

An operator has been dedicated to the Cookstown WPCP full-time to provide consistent operations and monitoring activities.
An on-site lab has been set up, including a high-range TAN analyzer, for analysis of regular monitoring parameters to assist in plant operation.

Sludge Generation and Removal

There were no sludge removal activities in 2025. Anticipated volumes to be generated in the next reporting period is zero (0).

Complaints Received & Steps taken to address Complaints

Customer Service inquiries are received and logged through the Town of Innisfil. There were seven (7) customer service inquires logged in 2025. There was one (1) call for sewer back-ups which was found to be on homeowner's side.

Bypasses, Overflows, other situations outside Normal Operating Conditions and Spills

Quarterly Bypass reports were submitted to the MECP. There were two (2) unplanned bypass events in 2025.

Location	Date	Event Start Time	Event End Time	Event Duration (hours)	Total Volume (m3)	Sampled
Cookstown WPCP	2025-03-30	11:00:00 AM	20:00:00 PM	9 hrs	875	Y

On March 30, 2025, the Cookstown Water Pollution Control Plant experienced a prolonged power failure lasting nine hours, from 11:00 a.m. to 8:00 p.m., due to an ice storm. During this period, an estimated total volume of 875 cubic metres of final effluent was discharged to lagoons. The event was reported to MECP under reference number 1-N14603.

On April 3, 2025, the Cookstown Water Pollution Control Plant experienced a hydraulic overload event that occurred between 4:30 a.m. and 4:45 a.m. During this 15-minute period, approximately 153 cubic metres of untreated wastewater overflowed the grit channel. The overflow was contained within the immediate area of the facility. The incident was reported to the MECP under reference number 1-N7PYMO.

Notices of Modifications to Sewage Works

There were zero (0) Notices of Modifications to Sewage Works in 2025.

Efforts to Achieve Conformance with Procedure F-5-1 Determination Of Treatment Requirements For Municipal And Private Sewage Treatment Works

Operations has a program for regular flushing and inspection program; CCTV inspection is required every 5 years as per ECA# 4098-BC2SMK, Condition 3.2.b. This was last completed in 2022 and is being considered for flushing again prior to 2027.

InnServices Utilities (IUI) Engineering group have been working on several projects and initiatives to eliminate Bypass/Overflow incidents. These include, but are not limited to the following in 2025:

- Regular flushing and inspection program of sanitary mains. All sanitary mains in Cookstown were flushed in 2025 under InnServices annual capital program.
- Flow Monitoring of active developments (34 King Street Condominium)
- Install bulkheads from unoccupied subdivision/condominium phases to the existing sewer system.
- Policy requiring CCTV inspections in subdivision developments: mainline twice - prior to Underground Certificate and after Above-ground Certificate, but before top asphalt; and once for laterals (prior to occupancy).
- Sanitary exfiltration testing of new sewers; low-pressure air testing is a requirement for subdivision developments, new development is subject to infiltration/exfiltration testing in accordance with OPSS 410.
- Required as per Town Standards section 5.15, external MH (maintenance hole) wrapping of horizontal joints and frame/moduloc on all projects (Capital and Development)

IUI Engineering has identified the following practices and projects continuing into 2025:

- MH Lids in grassed, low lying, or in areas with regular flooding require waterproof MH frame/cover.
- Bulkhead and water-tight plug required in downstream MH of subdivision until first occupancy, developer’s engineers to do regular inspection and pumping as required.
- Seek opportunities for more MH rehabilitation.
- Pursue opportunities for more Sanitary Sewer rehabilitation.
- Consider Wrapping of pipe to MH Connections (similar to Region of Peel).

- Explore Rebate program for disconnection of sump pump from sanitary (similar to City of Barrie).
- Add Inflow & Infiltration (I & I) information and education to the Town/IUI website.
- Flow monitoring of new developments from first occupancy until assumption and emergency measures to be established for high flow events.
- MH condition assessment program (Private and Municipal) to be developed.
- Internal non-penetrating frost straps on new MH installation
- InnServices Engineering also carried out I & I flow monitoring on Cookstown sanitary mains.

Cookstown Water Pollution Control Plant - Municipal Class Environmental Assessment

The purpose of the Cookstown WPCP Class Environmental Assessment (Class EA) is to identify a cost effective and environmentally sustainable approach to provide wastewater servicing for the community of Cookstown, as well as the Employment and Residential area at Highway 400 and Highway 89. Additional wastewater servicing capacity is required to accommodate the population and employment growth outlined in the Official Plan and OPA No. 1 to 4, all in accordance with the goals and objectives of the Official Plan.

Key Objectives of the Cookstown WPCP Class EA include:

- Identify technically feasible options to provide wastewater servicing to the planned population and employment growth to the year 2051.
- Achieve environmental protection and public health goals.
- Obtain and incorporate stakeholder input throughout the process;

InnServices will be following the Schedule C Municipal Class Environmental Assessment Study process, which has five phases.

- Phase 1: The Notice of Commencement was issued December 4, 2023.
- Phase 2: Review Agency and Public Consultation No. 1, comment period closed December 6, 2024.
- Phase 3: Review Agency and Public Consultation No. 2; Public Information Centre held June 26, 2025. Comment period closed July 26, 2025.
- Phase 4: Environmental Study Report
- Phase 5: Implementation

Updates may be found on the InnServices' website: environmental-assessments/cookstown-water-pollution-control-plant