

Public Information Centre

Cookstown WPCP Class Environmental Assessment

Public Information Centre No. 2

June 26, 2025

Open House from 5 pm to 7 pm

Cookstown Library – Meeting Hall, 20 Church Street, Cookstown, ON

Welcome & Please Sign In

The goals of this Public Information Centre:

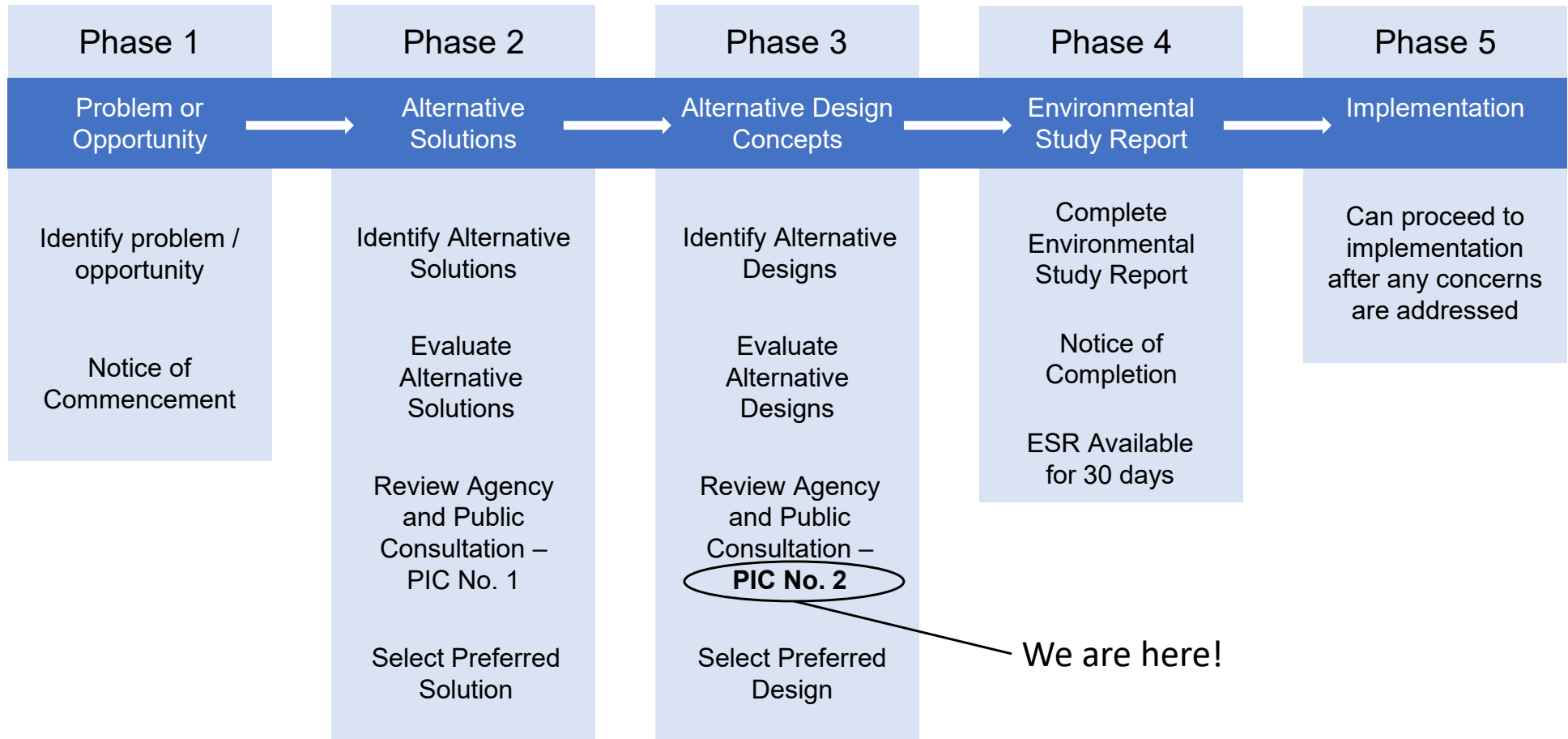
- ❖ Provide an overview of the study process
- ❖ Present alternative design concepts under consideration
- ❖ Provide an update on progress since Public Information Centre No. 1
- ❖ Answer your questions and provide an opportunity to get involved in the project

Please review the materials and submit your comments on the comment sheets provided



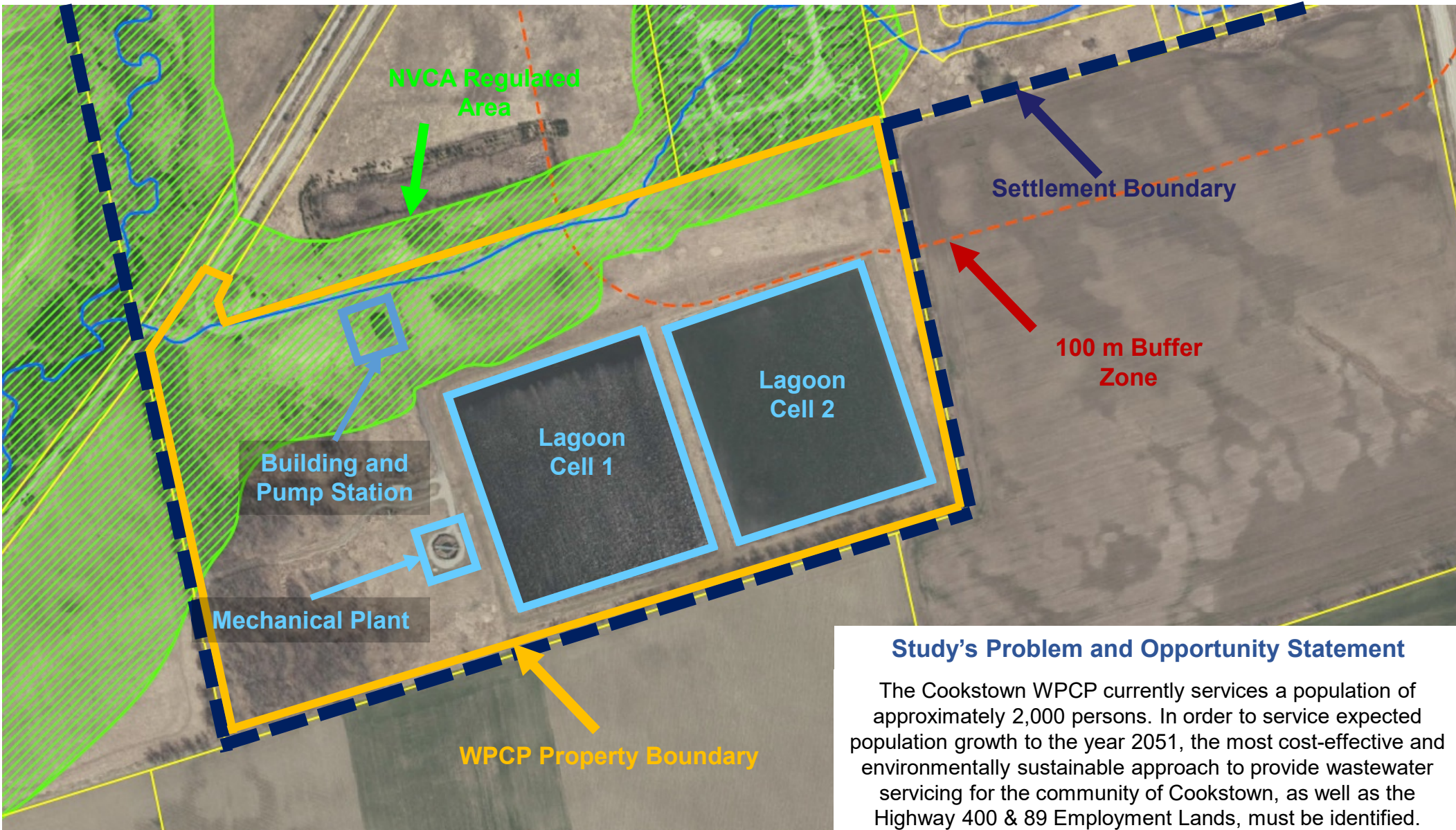
Class EA Study Process

A Schedule C Municipal Class EA Study has 5 phases. We are currently in Phase 3.



Existing Cookstown WPCP

Existing WPCP Site, Constraints, and Adjacent Properties



Study's Problem and Opportunity Statement

The Cookstown WPCP currently services a population of approximately 2,000 persons. In order to service expected population growth to the year 2051, the most cost-effective and environmentally sustainable approach to provide wastewater servicing for the community of Cookstown, as well as the Highway 400 & 89 Employment Lands, must be identified.

Alternative Design Concepts

Preferred Servicing Solution: Upgrade and Expand the Existing Cookstown WPCP with Effluent Discharge to Innisfil Creek

- This is the recommended preferred solution presented at PIC No. 1 (see figure)
- Upgrades to the Cookstown WPCP can be accomplished using various wastewater treatment technologies
- This results in alternative design concepts that need to be developed and evaluated

Overview of Design Concept Development

- All design concepts were developed to meet servicing needs to 2051
- Some upgrades will be common to all design concept options:
 - New on-site raw sewage pumping system (SPS)
 - New preliminary treatment (screening, grit removal)
 - Effluent storage and pumping system upgrades (to accommodate effluent discharge restrictions)
 - New disinfection
 - New sludge digestion and biosolids storage
 - Replacing existing outfall force main and gravity sewer (see route in figure)
- For WPCP upgrades, all new tankage / buildings to be accommodated on the existing WPCP site



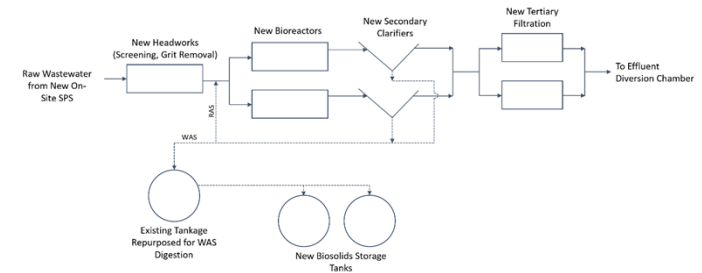
Preferred Servicing Solution

Long-List of Alternative Design Concepts

Option 1 – Extended Aeration with Tertiary Filtration

- Existing WPCP is an extended aeration process
- Common configuration of small and medium sized Ontario facilities
- Can consistently meet effluent quality targets

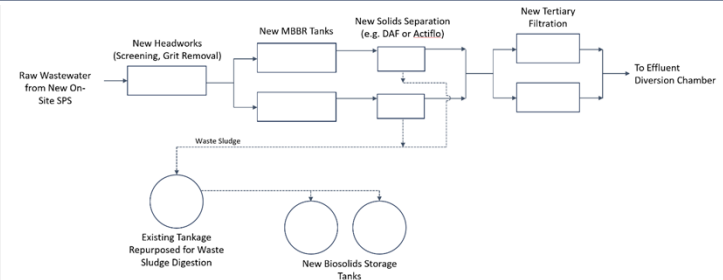
Option 1 is feasible – carried forward to Short-List



Option 2 – Moving Bed Biofilm Reactor (MBBR) with Tertiary Filtration

- Fixed-film process – limited process control
- Newer technology with limited track record
- May not consistently meet effluent quality targets

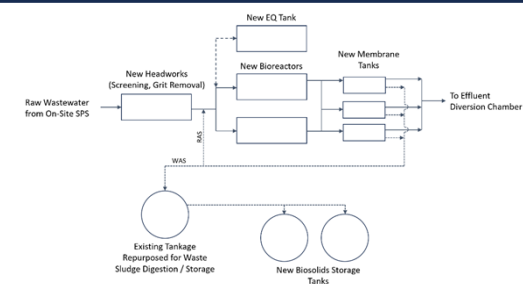
Option 2 not carried forward



Option 3 – Membrane Bioreactor (MBR)

- Can produce high quality effluent
- Has been implemented successfully in Ontario, but few applications
- Typically has a smaller footprint than extended aeration

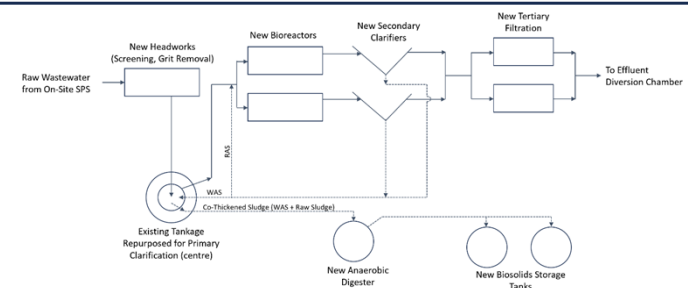
Option 3 is feasible – carried forward to Short-List



Option 4 – Conventional Activated Sludge (CAS) with Tertiary Filtration

- Common in Ontario, but typically for medium- to large-sized facilities
- Generates raw sludge – impacts sludge digestion/biosolids storage needs
- More complex process than extended aeration

Option 4 not carried forward



Short-List of Alternative Design Concepts

Summary of Alternative Design Concepts Short-List

- **Option 1 – Extended Aeration with Tertiary Filtration**
 - Upgrades common to all options (see “Alternative Design Concepts” board)
 - New bioreactors and secondary clarifiers
 - New tertiary treatment
 - Convert existing tanks into an aerobic sludge digester
 - New biosolids storage tanks
 - New headworks and tertiary treatment building(s)
- **Option 3 – MBR**
 - Upgrades common to all options (see “Alternative Design Concepts” board)
 - New raw wastewater equalization tank
 - New bioreactors
 - New membrane system including dedicated membrane tanks, chemical addition systems and permeate pumping system
 - Convert existing tanks into an aerobic sludge digester
 - New biosolids storage tanks
 - New headworks and membrane system building(s)

Evaluation

Evaluation criteria were developed that consider impacts during both the design / construction and long-term operations phases of the alternative solutions.

A preliminary evaluation was completed, and the short-listed design concepts were ranked (most to least preferred):

1. Option 1 – Extended Aeration with Tertiary Filtration (Recommended Preferred)
2. Option 3 – MBR

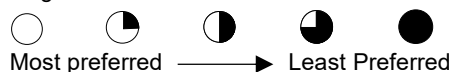
Evaluation Criteria

Group	Criteria	Design / Construction Phase	Operations Phase
Natural Environment	Effect on surface waters	✓	✓
	Disruption of terrestrial features	✓	
Social / Cultural / Community Environment	Disruption of adjacent residential, community and recreational features (noise, dust, odour, traffic)	✓	✓
Economic Environment	Capital costs of construction	✓	
	Operation and maintenance costs		✓
Technical Environment	Constructability	✓	
	Compatibility with existing infrastructure	✓	
	Ability to consistently meet effluent criteria		✓
	Performance and experience in similar climates / plant sizes		✓
	Operating complexity / familiarity with process		✓
	Operating requirements / operations staff time usage		✓

Evaluation of Alternative Design Concepts

Evaluation Criteria	Option 1 – Extended Aeration with Tertiary Treatment	Rating	Option 3 – MBR	Rating
Design / Construction Phase				
Natural Environment	- Impacts on the receiver can be mitigated via construction staging and planning - Larger footprint than Option 3		- Impacts on the receiver can be mitigated via construction staging and planning - Smallest construction footprint	
Social / Cultural / Community	Disruption to adjacent residential, community and recreational features (e.g. noise, dust, traffic) can be mitigated		Disruption to adjacent residential, community and recreational features (e.g. noise, dust, traffic) can be mitigated	
Economic Environment	Capital cost of construction similar to that for Option 3		Capital cost of construction similar to that for Option 1	
Technical Environment	- Compatible with existing infrastructure (reuse of lagoons, existing tankage) - New treatment processes can be constructed while maintaining existing treatment process online		- Compatible with existing infrastructure (reuse of lagoons, existing tankage) - New treatment processes can be constructed while maintaining existing treatment process online	
Operations Phase				
Natural Environment	Can produce effluent that ensures protection of the receiver, Innisfil Creek		Can produce effluent that ensures protection of the receiver, Innisfil Creek	
Social / Cultural / Community	Disruption to adjacent residential, community and recreational features (e.g. noise, dust, traffic) can be mitigated		Disruption to adjacent residential, community and recreational features (e.g. noise, dust, traffic) can be mitigated	
Economic Environment	Lowest operations and maintenance costs		Highest operations and maintenance costs	
Technical Environment	- Can consistently meet effluent quality criteria - Extensive experience with this treatment technology in similar climates / plant sizes - Operations staff are familiar with the treatment process - Requires less operational effort / time than Option 3		- Higher effluent quality than Option 1 - Less experience with MBR technology in similar climates / plant sizes - Operationally complex compared to Option 1 - Operations staff not familiar with this treatment process - Requires more operational effort / time than Option 1	
	Overall Rating		Overall Rating	
Conclusion	Alternative is preferred		Alternative is not preferred	

Legend:



Recommended Preferred Design Concept

The Recommended Preferred Design Concept is Option 1 – Extended Aeration with Tertiary Filtration

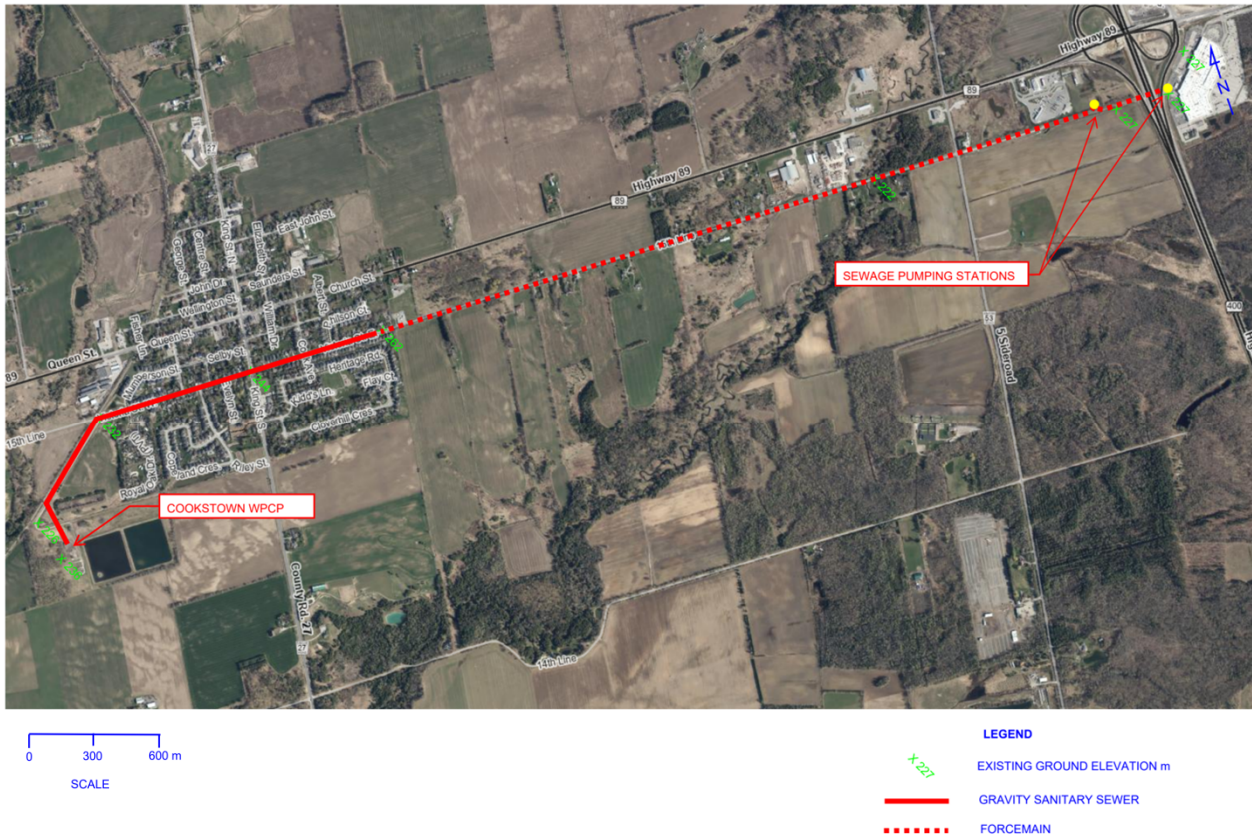


Conceptual Layout for Option 1 – Extended Aeration with Tertiary Filtration

- Works to increase the capacity of the Cookstown WPCP:
 - Upgraded on-site SPS, new headworks, new effluent pumping system, new disinfection
 - New extended aeration process (bioreactors, secondary clarifiers)
 - New tertiary treatment
 - Sludge digestion in retrofitted tanks, new biosolids storage
 - New building(s)
- Works to increase the capacity of the effluent discharge system to Innisfil Creek:
 - Upgraded effluent diversion and pumping system (on WPCP site)
 - Replace existing outfall force main and gravity sewer to Innisfil Creek
- All new tankage / buildings can be accommodated on previously disturbed land on the existing WPCP site

Of the short-listed options, Option 1 best met the overall weighted evaluation criteria associated with natural, social, cultural, community, technical and economic factors.

Feasibility Assessment – Wastewater Conveyance from Highways 400 & 89



- At a minimum, two main sewage pumping stations (SPSs) would be required
 - One on either side of Highway 400
 - Appears to be sufficient land available
- Will require crossing Highway 400
 - Approximately 200 m crossing
 - Can be completed using microtunnelling
- Will require a bridge crossing over Innisfil Creek
 - Co-ordination with NVCA will be required
- The new force main will have to cross a major natural gas pipeline
 - Close co-ordination with natural gas utility will be required
- Additional studies / approvals would be required prior to design and construction
 - Class EA requirements (if any)
 - Natural environment, heritage and archaeological supporting studies (as required)
 - Approvals from regulatory bodies (such as MTO, NVCA, TransCanada Pipelines Limited, County of Simcoe, MECP)

Conceptual Layout – Highway 400/89 Area Sanitary Servicing to Cookstown WPCP

Conveyance of wastewater from the Highway 400/89 area to the Cookstown WPCP is feasible

Conceptual Level Cost Estimates

Life Cycle Cost Estimates – Upgrades to the Cookstown WPCP

Cost Item	Option 1 – EA with Tertiary Filtration (Preferred Option)	Option 3 - MBR
Estimated Capital Cost	\$45.2M	\$44.9M
Estimated Annual O&M Cost	\$1,051K	\$1,315K
Estimated Net Present Value of O&M Costs to 2051	\$34.4M	\$43.1M
Estimated Life Cycle Cost to 2051	\$79.6M	\$88.0M

Capital Cost Estimate – Upgrades to the Cookstown WPCP and Wastewater Conveyance from Highway 400/89

Cost Item	Estimated Capital Cost
Estimated Capital Cost – WPCP Upgrades (Option 1 – Extended Aeration with Tertiary Filtration)	\$45.2M
Estimated Capital Cost – Conveyance from Highway 400/89 Area	\$40.7M
Total Estimated Capital Cost	\$85.9M

Next Steps

Thank You for Attending!

Following PIC No. 2, the Project Team will finalize the selection of the Recommended Design Concept.

Questions and Comments?

- Visit the Class EA Study webpage to stay up-to-date on project notices and shared study materials:
<https://innservices.co/infrastructure-upgrades/environmental-assessments/cookstown-water-pollution-control-plant>
- Complete a Comment Sheet this evening, or submit comments via email to staff below:

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Please Provide Comments by July 26, 2025