

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4006 WWTP Effluent Flow Meter		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Description

#### Project Description

Replacement of the WWTP final effluent flow meter, instrumentation, and wiring controls.

#### Project Justification

The WWTP final effluent flow meter's purpose is to accurately tabulate the quantity and velocity of treated water leaving the WWTP to Lake Ontario. The final effluent flow meter also plays an important role in chemical dosage optimization, recorded process data, and provincial and federal regulatory reporting.

The current "Flo-Dar" radar style final effluent flow meter, instrumentation, and wiring controls are nearing the end of its estimated useful life of 15-20 years and require asset(s) replacement. Additionally, in 2023 the final effluent flow meter experienced failures that required emergency repairs to the control board and battery backup system that are prompting full asset(s) replacement.

In 2023 an engineering consultant was hired to review and recommend flow meter and instrumentation options available to the Municipality for a final effluent flow meter that is best suited for the WWTP's design, that is capable of tabulating multi-directional flows accurately, and that will work in conjunction with the municipalities effluent pumping station configuration.

As a result of the poor asset condition due to expired estimated useful life, failures causing emergency repairs, and improved modern flow meter technological advances, the WWTP final effluent flow meter is required to be replaced in 2025.

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4006 WWTP Effluent Flow Meter		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Budget							
	Total	Prior Years	2025	2026	2027	2028	2029
<b>Expenditures</b>	100,000		100,000				
<b>Funding</b>							
<b>Utility Rates &amp; Reserves</b>							
Contrib fr Wastewater R/F	100,000		100,000				
	100,000		100,000				
<b>Funding Total</b>	<b>100,000</b>		<b>100,000</b>				

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## Capital Projects

<b>Project</b>	4006 WWTP Effluent Flow Meter		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Attributes		
Attribute	Value	Comment
<b>Attributes</b>		
Department	Wastewater	
Project Type	Replacement	
Replacement Type	Replacement - Similar	
Tax Levy Allocation	Utilities	
Physical Boundary Location		
Identified in any Council Approved Plan?	Yes	
<b>Plan?</b>		
Identify Council Approved Plan(s)	2019 Water/Wastewater Rate Study	
Project Status	Ongoing	
<b>Asset Management Plan (AMP)</b>		
Existing Asset ID #	Flow Meter (11165) / Instrumentation (11149)	
Replacement Value Identified in AMP (\$)	\$107,537	- Value taken from 2019 Water/Wastewater Rate Study - Individual cost pooled in AMP
Replacement Year Identified in AMP	2022	
Estimated Useful Life (in years)	15	
Future Annual Impact on AMP (Cost per year)	\$500	- Annual Inspection & Calibration
<b>Date</b>		
Start Date	Apr 7, 2025	
Completion Date	May 29, 2026	
<b>To be Completed by Finance</b>		
Approval Status	Recommended by Finance Committee	No budget approval prior to 2022.
GL Account Number	410-000-4006-6900	

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4006 WWTP Effluent Flow Meter		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Gallery

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# Municipality of Port Hope

## Capital Projects

Project	4006 WWTP Effluent Flow Meter		
Department	Wastewater		
Version	04 Approved by Council	Year	2025

### Gallery

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# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4006 WWTP Effluent Flow Meter		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Gallery

C:\Users\yulek\OneDrive - Municipality of Port Hope\Pictures\WWTP Effluent Channel Level Transmitter - Image #1.jpg



# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4029 WWTP SCADA System Replacement		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Description

#### Project Description

Replacement and upgrade of the WWTP SCADA System; computers, programs, licenses, reporting libraries, software, hardware, and firewall security.

#### Project Justification

The WWTP SCADA (Supervisory Control and Data Acquisition) system's purpose is for controlling, monitoring, and analyzing the wastewater systems industrial devices and processes. The computerized SCADA system consists of software, hardware, and program components that enables the remote and on-site operation, process adjustment, equipment monitoring, and data gathering from the wastewater system.

The current WWTP SCADA computer system was installed in 2016 and has surpassed its estimated useful life of 5 years and requires asset replacement.

The WWTP SCADA system; computers, programs, licenses, reporting libraries, software, hardware, and firewall security plays an important role in wastewater treatment and collection system operation, remote and on-site process adjustments, data collection, equipment monitoring, and provincial and federal regulatory reporting.

As a result of poor asset condition due to expired estimated useful life; dated software, hardware, programs, and licenses; and the need for improved firewall security, the WWTP SCADA system is required to be replaced in 2025.

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4029 WWTP SCADA System Replacement		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Budget							
	Total	Prior Years	2025	2026	2027	2028	2029
<b>Expenditures</b>	58,000		58,000				
<b>Funding</b>							
<b>Utility Rates &amp; Reserves</b>							
Contrib fr Wastewater R/F	58,000		58,000				
	58,000		58,000				
<b>Funding Total</b>	<b>58,000</b>		<b>58,000</b>				



# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4029 WWTP SCADA System Replacement		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Attributes		
Attribute	Value	Comment
<b>Attributes</b>		
Department	Wastewater	
Project Type	Replacement	
Replacement Type	Replacement - Similar	
Tax Levy Allocation	Utilities	
Physical Boundary Location	Urban Port Hope	
Identified in any Council Approved Plan?	Yes	
Identify Council Approved Plan(s)	2019 Water/Wastewater Rate Study	
Project Status		
<b>Asset Management Plan (AMP)</b>		
Existing Asset ID #	N/A - Asset pooled with WWTP (8284)	Individual asset does not exist; SCADA System requires individual asset creation
Replacement Value Identified in AMP (\$)	\$47,229	- Value taken from 2019 Water/Wastewater Rate Study
Replacement Year Identified in AMP	2025	- \$21,507 (2022) / \$25,792 (2027)
Estimated Useful Life (in years)	5	- last upgrade 2016
Future Annual Impact on AMP (Cost per year)	\$3000	- Annual software and license updates
<b>Date</b>		
Start Date	Feb 3, 2025	
Completion Date	Apr 30, 2025	
<b>To be Completed by Finance</b>		
Approval Status	Recommended by Finance Committee	
GL Account Number		

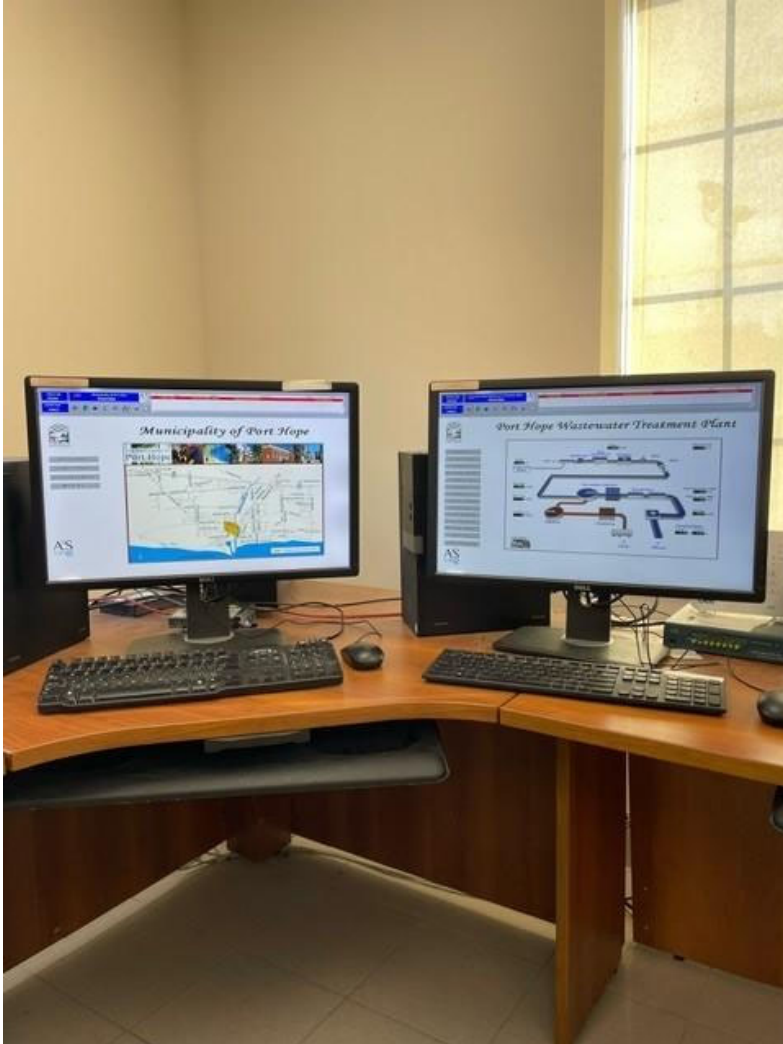
# Municipality of Port Hope

## Capital Projects

<b>Project</b>	4029 WWTP SCADA System Replacement		
<b>Department</b>	Wastewater		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Gallery

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# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5025 Train 2 Membrane Replacement		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Description

#### Project Description

Train 2 Membrane Replacement

#### Project Justification

Veolia membrane data indicates that Train 2 ultra-membrane filtration modules are not performing to its' desired specifications and could achieve failure within 1-2 years. This Train represents 25% (3,500,000 L/day) of the Municipality's water filtration process. The Water Treatment Plant cannot operate with 3 Trains over the long term from both a production and fire flow perspective. As membranes deteriorate, they become more susceptible to incremental fouling, resulting in the inability to filter the desired amount of water.

Staff have continued to trial the use of a coagulant, which has shown to increase the life of the membranes by 1 year. Train 2 membranes were initially expected to be replaced in 2024/2025 and we are aiming for their replacement in early 2026. Currently, there is a 56 week delay between the date of order and receipt of the product.

Operations staff continue to work with Veolia on methods to ensure that the Municipality can maximize membrane life for current and future membranes.

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5025 Train 2 Membrane Replacement		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Budget							
	Total	Prior Years	2025	2026	2027	2028	2029
<b>Expenditures</b>	550,000		550,000				
<b>Funding</b>							
<b>Utility Rates &amp; Reserves</b>							
Contrib fr Water R/F	550,000		550,000				
	550,000		550,000				
<b>Funding Total</b>	<b>550,000</b>		<b>550,000</b>				

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5025 Train 2 Membrane Replacement		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Attributes		
Attribute	Value	Comment
Attributes		
Department	Water	
Project Type	Replacement	
Replacement Type	Replacement - Similar	
Tax Levy Allocation	Utilities	
Physical Boundary Location		
Identified in any Council Approved Plan?	Yes	
Identify Council Approved Plan(s)	Rate Study	
Project Status	Completed in Current Year	
Asset Management Plan (AMP)		
Existing Asset ID #	17443	
Replacement Value Identified in AMP (\$)		
Replacement Year Identified in AMP		
Estimated Useful Life (in years)	8	
Future Annual Impact on AMP (Cost per year)		
Date		
Start Date	Dec 31, 1969	
Completion Date	Dec 31, 1969	
To be Completed by Finance		
Approval Status	Recommended by Finance Committee	
GL Account Number		

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5029 Primary Chlorine Injection Redundancy		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

### Description

#### Project Description

Install new primary chlorination injection piping and diffuser on flooded side of discharge pipe for more effective chlorination. Use existing injection point as backup.

#### Project Justification

The Water Treatment Plant was designed with many redundant aspects; however, a redundant primary chlorination injection system was not considered during the 2002-2003 design phase. Primary chlorination is one of the most important aspects of drinking water disinfection and is the process that inactivates any remaining bacteria and viruses (post filtration).

The current injection point has a design flaw which would be better suited on the flooded side of the discharge pipe, as per a recent discussion with a qualified Engineer. The existing setup often results in poor mixing and uneven distribution of chlorine to the north and south contact chambers, creating operational challenges.

Primary chlorine injection is highly regulated and if the existing system failed, it would result in the Municipality being unable to effectively treat its' drinking water. Adding redundancy will mitigate the existing risk and ensure that the Municipality continues to deliver safe, treated, drinking water to the community for years to come.

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5029 Primary Chlorine Injection Redundancy		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Budget							
	Total	Prior Years	2025	2026	2027	2028	2029
<b>Expenditures</b>	40,000		40,000				
<b>Funding</b>							
<b>Utility Rates &amp; Reserves</b>							
Contrib fr Water R/F	40,000		40,000				
	40,000		40,000				
<b>Funding Total</b>	<b>40,000</b>		<b>40,000</b>				

# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5029 Primary Chlorine Injection Redundancy		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

Attributes		
Attribute	Value	Comment
Attributes		
Department	Water	
Project Type	New Asset	
Replacement Type	Replacement - Similar	
Tax Levy Allocation		
Physical Boundary Location		
Identified in any Council Approved Plan?	No	
Identify Council Approved Plan(s)		
Project Status	To be Completed by End of Year	
Asset Management Plan (AMP)		
Existing Asset ID #		
Replacement Value Identified in AMP (\$)		
Replacement Year Identified in AMP		
Estimated Useful Life (in years)		
Future Annual Impact on AMP (Cost per year)		
Date		
Start Date	Dec 31, 1969	
Completion Date	Dec 31, 1969	
To be Completed by Finance		
Approval Status	Recommended by Finance Committee	
GL Account Number		



# Municipality of Port Hope

## Capital Projects

<b>Project</b>	5029 Primary Chlorine Injection Redundancy		
<b>Department</b>	Water		
<b>Version</b>	04 Approved by Council	<b>Year</b>	2025

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# Municipality of Port Hope

## Capital Projects

Project	5029 Primary Chlorine Injection Redundancy		
Department	Water		
Version	04 Approved by Council	Year	2025

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