

A dark grey background with a network diagram of interconnected nodes and lines. The nodes are represented by small circles of varying sizes, and the lines are thin and light grey. The overall pattern is a complex, interconnected web.

MOVING WATER FORWARD

CONNECTING MORE PEOPLE TO MORE POSSIBILITIES

Public Information Centre No. 1

Grimsby (Baker Road) Wastewater Treatment Plant Expansion Municipal Class Environmental Assessment



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Niagara  Region

Welcome!

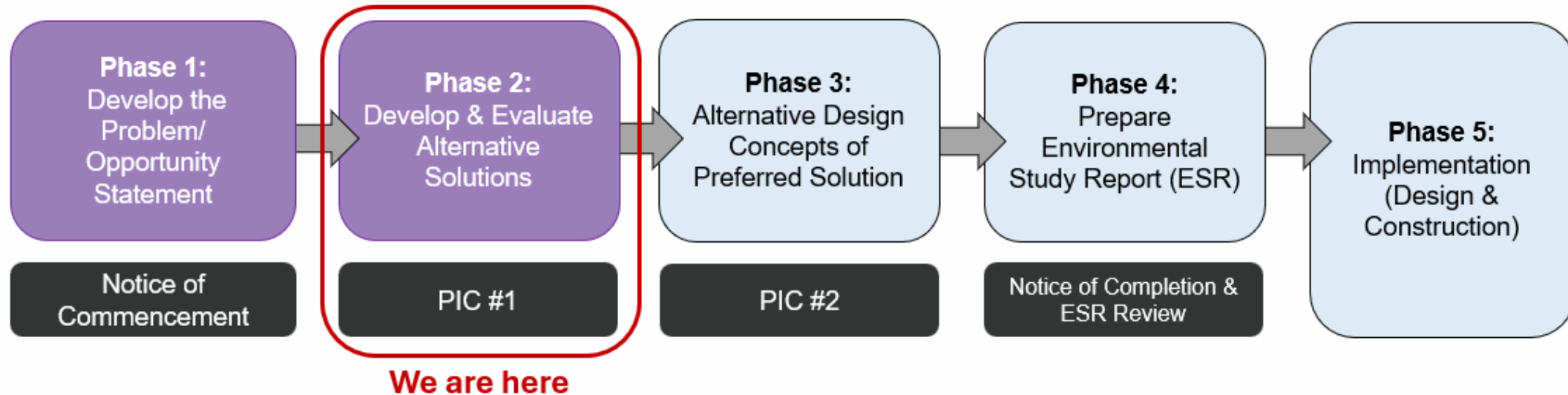
Goals of this Public Information Centre (PIC):

- Provide background information on the Baker Road Wastewater Treatment Plant (WWTP) Expansion study
- Present the Problem and Opportunity Statement
- Provide the criteria for the screening and evaluation of alternative solutions
- Summarize the evaluation of alternative solutions and present a recommended solution
- Provide an opportunity to get involved in the study



Municipal Class Environmental Assessment Process

This study is classified as a Schedule 'C' Municipal Class Environmental Assessment (MCEA) and is subject to **Phases 1 through 4** of the MCEA process.



Upon completion of Phase 4 of the study, an Environmental Study Report (ESR) will be prepared to document the MCEA planning and decision-making process and made available for a 30-day public review period. A Notice of Completion will be issued at that stage.

Study Overview

What is being done?

Niagara Region is considering different ways to provide additional capacity for the Baker Road Wastewater Treatment Plant (WWTP) to support growth within the service area. This MCEA study will consider various alternative solutions and identify a preferred solution to address future capacity needs.

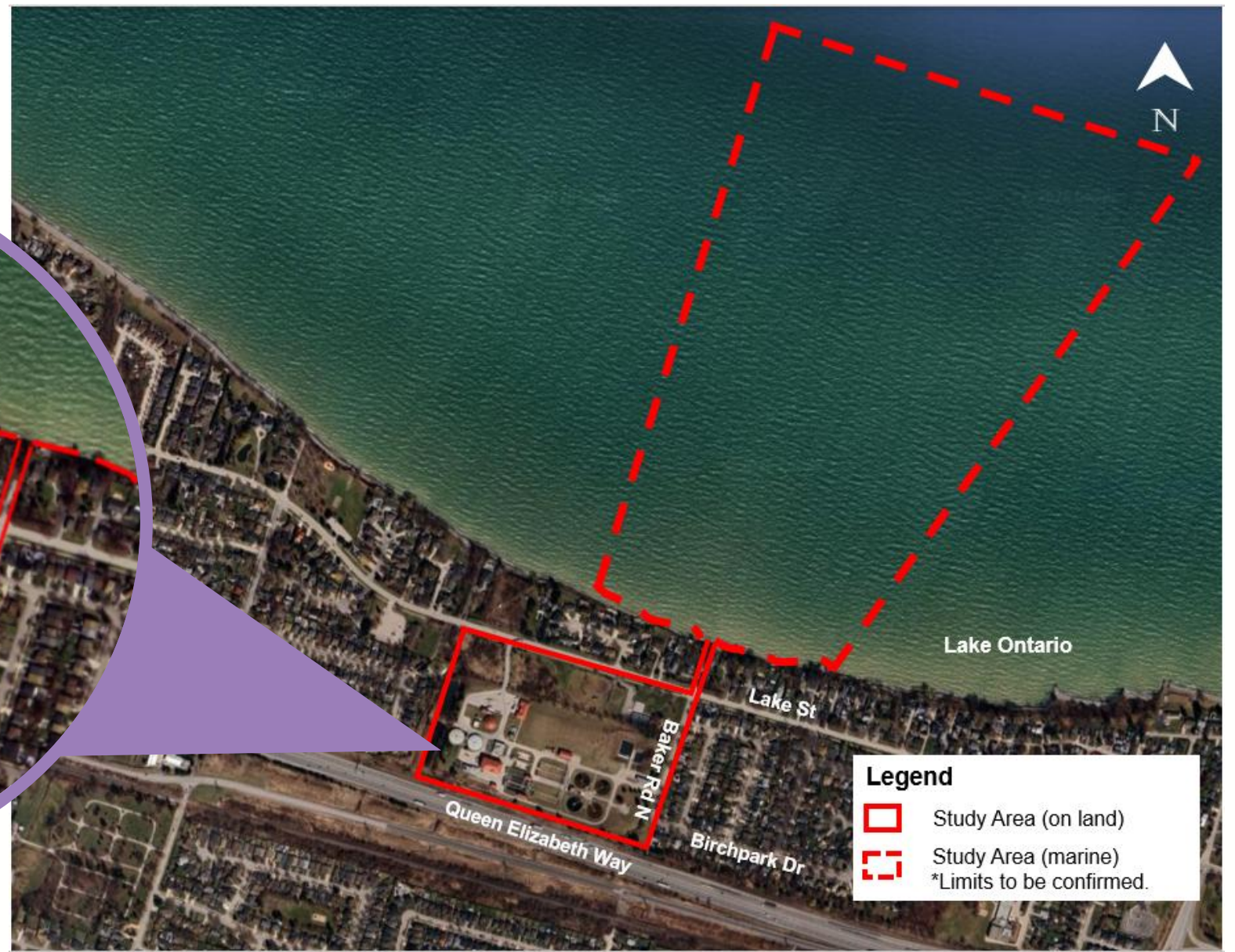
Why is it being done?

Population growth in the area is expected to increase the amount of wastewater generated. The current capacity of the WWTP is insufficient to treat the anticipated future wastewater flows. This study is taking steps to continue supporting the communities' current needs while also providing support for future conditions.



What does this mean for the community?

The MCEA process provides opportunities for the public and interested parties to share comments and feedback, which will be considered throughout the planning process.

Study Area



Legend

-  Study Area (on land)
-  Study Area (marine)
*Limits to be confirmed.

Problem and Opportunity Statement

During this MCEA study, the following problems and opportunities will be addressed:

The Baker Road WWTP's current capacity of 31.3 Million Liters per Day (MLD) is insufficient to meet the demands anticipated by 2051. Expansion of the Baker Road WWTP to 47.3 MLD, as recommended by the 2021 Water and Wastewater Master Servicing Plan Update, presents an opportunity to support the anticipated growth within the service area.

Preferred servicing solution(s) will contribute to the wastewater system's long-term sustainability and address immediate needs, intermediate goals, and long-term growth. It/they will:

- Comply with applicable regulations to provide adequate wastewater treatment.
- Comply with the recommendations from the 2021 Water and Wastewater Master Servicing Plan Update.
- Consider stakeholder and rightsholder comments and concerns.
- Be financially viable.
- Be technically feasible and operationally sustainable.
- Be socially and environmentally responsible.

Existing Environmental Conditions

- The study area is within the Western Lake Ontario watershed under the jurisdiction of the Niagara Peninsula Conservation Authority (NPCA).
- The WWTP sits higher than the surrounding lands. Surface water flows are collected by stormwater retention ponds, drainage ditches or catch basins that feed into Lake Ontario.
- There is an unnamed watercourse west of the WWTP that supports a variety of aquatic vegetation.
- Two large berms are present on either side of the WWTP north driveway.
- Vegetation communities in the study area are largely the product of construction and landscaping (such as mowed lawns and planted trees).
- A number of at-risk bat species and the at-risk Monarch butterfly have a high probability of occurring in the study area.
- Should any impacts on the natural environment occur, the appropriate mitigation measures will be implemented.



Existing Aquatic Conditions

- The Baker Road WWTP's existing outfall pipe discharges treated wastewater effluent into the nearshore of Lake Ontario.
- It is expected that a new outfall pipe will be required.
- A geophysical survey will be undertaken in the summer of 2026 to collect more information about aquatic conditions in the area, including:
 - Aquatic species and lakebed (benthic) ecology
 - Potential fish spawning habitat
- Results from the survey will inform future project planning.
- Should any impacts on the aquatic environment occur, the appropriate mitigation measures will be implemented.

Note: The limits of the marine study area in Lake Ontario will be confirmed following the geophysical survey. All applicable regulatory requirements for activities in the lake will be met.

Technical Considerations

Various evaluations of the WWTP have been completed to date. The findings were documented in several Technical Memorandums (TMs):

TM 3 - Hydraulic Capacity Review

A review of historical flow data at the WWTP was conducted to **establish baseline conditions** for the study, and a high-level analysis was conducted to estimate the flow capacity of the existing WWTP.

It was determined that the current infrastructure will require major upgrades to meet projected wastewater flows. Upgrades will include a new outfall pipe to discharge treated wastewater effluent to Lake Ontario.

TM 4 – Hydraulic Capacity Assessment

Using a hydraulics model, the performance of the WWTP was simulated in various flow scenarios to **identify bottlenecks**.

It was found that the WWTP can handle the current average daily flows, but that peak flows caused by rain or snowmelt are exceeding capacity in parts of the plant.



TM 5 – Process Capacity Assessment

Using a model of the WWTP's biological and chemical processes, the major process areas in the WWTP were assessed to **determine which processes will require upgrades** to effectively treat the projected wastewater flows. It was determined that all processes except one will require an upgrade.



TM 7 – Optimization Recommendations

The process model was further analyzed to **identify opportunities to optimize the treatment process with minor changes**.

It was determined that parts of the WWTP's treatment process can be optimized to improve efficiency. However, optimization alone will not be sufficient to treat the projected wastewater flows.



Identification of Alternatives

The following alternative solutions were identified by the project team and evaluated:

Alternative 1 – Do Nothing

As per MCEA requirements, the do nothing alternative was included to establish baseline comparison of the impacts should the plant not be expanded.

Alternative 2 – Re-Rate Existing WWTP

Upgrade and optimize the existing WWTP to increase its capacity without expanding the facility's footprint.

Alternative 3 - Expand WWTP Within Existing Site

Alternative 3a) – Perform upgrades to the existing outfall to achieve future capacity requirements.

Alternative 3b) – Construct a new outfall to handle the additional flows caused by development (expansion).

Alternative 3c) – Construct a new outfall to handle all flows (replacement).

Alternative 4 - Construct a New WWTP

Construct a new WWTP and outfall at another site and reroute some or all sewage influent to the new location.

Evaluation Methodology

Evaluation of alternative solutions followed a two-step process:

- 1) The long list of alternative solutions were screened into a short list of reasonable and feasible solutions.
- 2) The short-listed alternative solutions were evaluated against several criteria to select the recommended solution.

Screening Criteria: The alternatives were screened against pass or fail criteria to confirm feasibility before proceeding to a detailed evaluation. Specific screening criteria are shown below:

Criteria	Consideration
Feasibility of the alternative	Is the alternative technically feasible and reasonable? Can the alternative be constructed for a reasonable cost? Are the ecological, social, cultural or other impacts anticipated to be unreasonably high relative to other alternatives? Does the alternative provide a long-term solution?
Ability of the alternative to address the problem and opportunity statement	Does the alternative comply with applicable regulations to provide adequate wastewater treatment? Does the alternative comply with the recommendations from the 2021 Water and Wastewater Master Servicing Plan Update? Does the alternative consider stakeholder and rightsholder comments and concerns? Is the alternative financially viable? Is the alternative technically feasible and operationally sustainable? Is the alternative socially and environmentally responsible?
Consistency of the alternative with applicable planning policies	Does the alternative meet local, regional, and provincial planning policies?

Screening of Alternative Solutions

See the pass or fail of each alternative below. Alternatives summarized with a green check mark moved forward to the detailed evaluation.

Alternative	Screening Criteria			Summary
	Feasible and Reasonable?	Address the Problem and Opportunity Statement?	Meet Applicable Planning Policies?	
1. Do Nothing	✗	✗	✗	✓*
2. Re-Rate Existing WWTP	✗	✗	✗	✗
3. Expand WWTP Within Existing Site	■	■	■	■
3a. Upgrade existing outfall to achieve future capacity requirements	✗	✗	✓	✗
3b. Construct a new outfall to handle additional flows caused by development (expansion)	✓	✓	✓	✓
3c. Construct a new outfall to handle all flows (replacement)	✓	✓	✓	✓
4. Construct a New WWTP	✗	✗	✓	✗

*Note: As per MCEA requirements the “Do Nothing” alternative is carried forward to the detailed evaluation as a baseline for comparison.

Evaluation Criteria

The following criteria were used to evaluate the short-listed alternative solutions and identify a recommended solution to carry forward into Phase 3 of this MCEA study:

Social



How does the alternative affect neighboring properties? Are there any cultural impacts or effects on Indigenous communities? Does the alternative have any sensory impacts during and after construction (noise, dust, etc.)? What are the effects on the municipality, local businesses, etc.? Does it satisfy the Region's Official Plan?

Technical



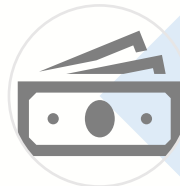
Is the alternative compatible with existing systems? How complicated is the implementation of the alternative? Are there any effects on operations and maintenance? Is the alternative able to meet existing and future capacity demands?

Environment



How does the alternative affect wildlife and vegetation? Does the alternative have any effects on habitats, air and water quality? Does it have any effects on aquatic life or Source Water Protection? Does it have any effects on climate change?

Cost



What are the relative lifecycle costs (including capital, operations and maintenance)? Are there potential construction risks that could impact cost? Are there any other financial risks?

Evaluation of Alternative Solutions

Legend		
Alignment	# value	Symbol
Not Aligned with Criteria	1	
Not Well Aligned with Criteria	2	
Somewhat Aligned with Criteria	3	
Well Aligned with Criteria	4	
Very Well Aligned with Criteria	5	

EVALUATION CRITERIA AND WEIGHTING	3. Expand WWTP Within Existing Site					
	1. Do Nothing		3b. Construct a new outfall to handle the additional flows caused by development (expansion)		3c. Construct a new outfall to handle all flows (replacement)	
SOCIAL	No construction related noise, dust or traffic impacts. Does not address risks to neighbouring properties during peak flow events. Does not support planned growth under previous plans. Places constraints on future development.		Some construction impacts related to noise, dust and traffic at the existing WWTP site and along selected outfall alignment. Minimal effects on neighbouring properties. Improves servicing capacity to support local growth consistent with the current planning horizon.		Some construction impacts related to noise, dust and traffic at the existing WWTP site and along selected outfall alignment. Minimal effects on neighbouring properties. Improves servicing capacity to support local growth consistent with the current planning horizon. Provides flexibility for long term growth beyond the current planning horizon.	
Score	1		4		5	
TECHNICAL	Does not address existing issues meeting required capacity at current flows. No improvements to operations, maintenance or treatment complexity. Unable to meet long term capacity requirements and projected future peak flow demands.		Improvements to operations, maintenance and treatment complexity. Increased capacity of the WWTP to meet future flows. Moderate flexibility for construction methods for the new outfall (open trench and micro-tunneling). Increased outfall capacity to meet future flows. Continued reliance on the existing outfall without redundancy. Approvals will be required to support the expansion.		Improvements to operations, maintenance and treatment complexity. Increased capacity of the WWTP to meet future flows. Most flexibility for construction methods (open trench, micro-tunneling and conventional tunneling). Increased outfall capacity to meet future flows. Improved redundancy to outfall capacity, with opportunity to accommodate flows beyond the current planning horizon. Approvals will be required to support the expansion.	
Score	1		4		5	
NATURAL ENVIRONMENT	Most likely no impacts to wildlife, vegetation, air quality or climate change beyond those imposed by current WWTP.		Moderate natural environment impacts; however, potential impacts would be reduced through use of mitigation measures. Impacts would be temporary, localized within existing WWTP footprint and along selected outfall alignment.		Moderate natural environment impacts; however, potential impacts would be reduced through use of mitigation measures. Impacts would be temporary, localized within existing WWTP footprint and along selected outfall alignment.	
Score	4		3		3	
COST	No initial capital cost. Continued maintenance costs of existing WWTP. High long-term financial risk due to emergency upgrades and unforeseen maintenance challenges and expenditures.		High capital cost. Additional maintenance cost of new outfall. Continued maintenance cost of existing outfall. Some financial risk related to future outfall upgrades if significant growth occurs beyond current planning horizon.		Highest upfront capital cost due to larger outfall size. Additional maintenance cost of new outfall. Continued maintenance cost of existing outfall, or reduced maintenance cost if decommissioning existing outfall. Lowest long term financial risk due to improved redundancy and spare capacity for future growth beyond current planning horizon.	
Score	3		4		3	
Total Score (Total Possible Score = 20)	9		15		16	
	NOT RECOMMENDED		NOT RECOMMENDED		RECOMMENDED	

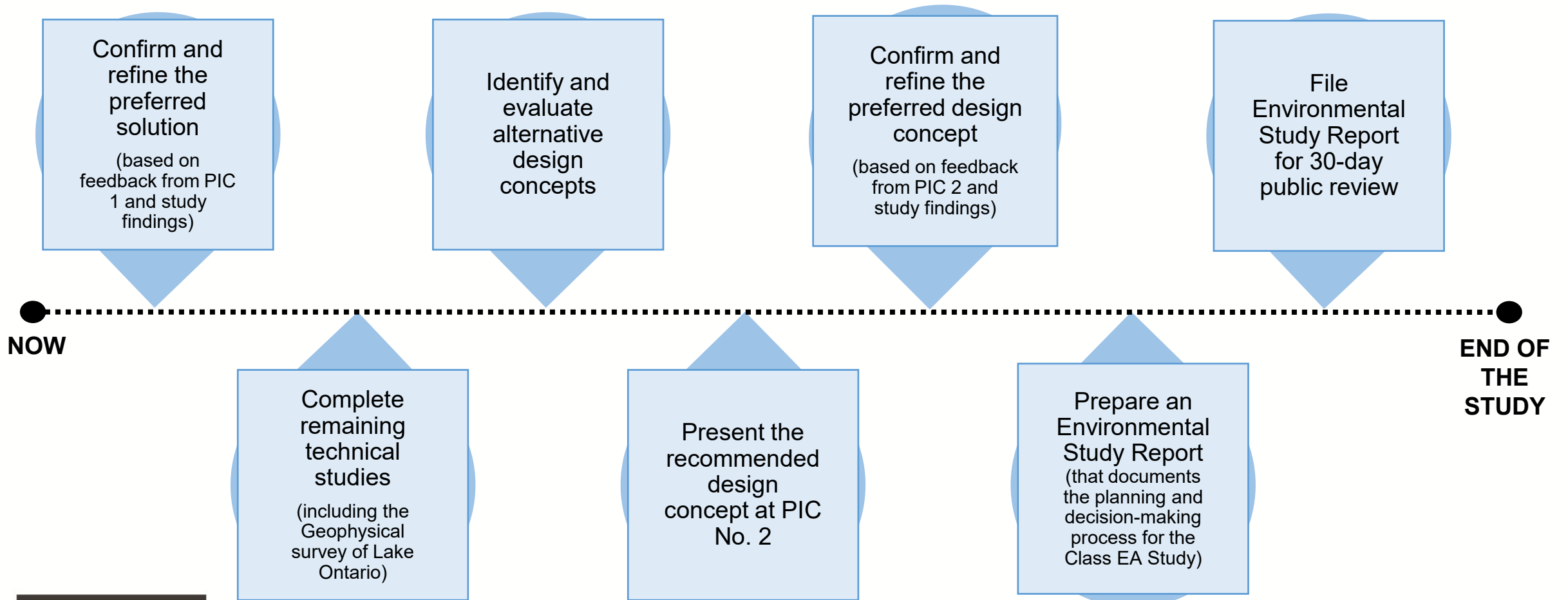
Recommended Solution

Based on the evaluation of the short-listed alternative solutions, the recommended alternative solution is Alternative 3c – **To expand the WWTP within the existing site and construct a new outfall to handle all flows (replacement).**

This alternative most effectively addresses the problem and opportunity statement and is better suited to future expansions beyond the current planning horizon.

The recommended solution will be confirmed as the preferred solution at the end of Phase 2, subject to input from the public, relevant agencies, First Nations and Indigenous communities.

Next Steps



Thank you for your participation!

How can you stay engaged and up to date on this MCEA study?

- 1) Review presentation slides and submit questions and comments using the comment form on the Region's webpage listed below.
- 2) Request to be added to the Study Contact List to receive future notices by contacting one of the Project Managers listed below.
- 3) Visit the Region's project webpage for study updates <https://www.niagararegion.ca/projects/grimsby-wastewater-treatment-plant/>
- 4) Attend future Public Information Centre No. 2.

Contact Us:



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