

Welcome!

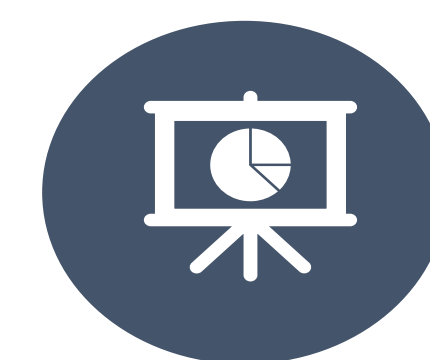
Welcome to the second Public Information Centre (PIC) for the Thorndale Wastewater Treatment Plant (WWTP) Expansion Municipal Class Environmental Assessment (EA) study. After reviewing the information, we would appreciate your comments and feedback. Members of the project team are available to discuss your questions. Your input is important to us!



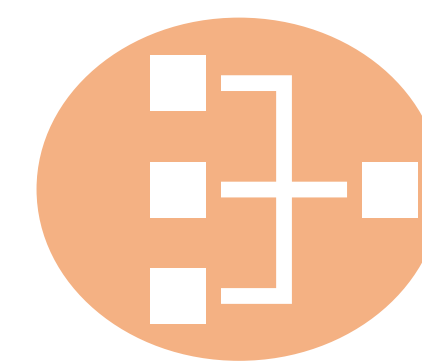
**Thorndale Wastewater
Treatment Plant Expansion
Schedule C Municipal Class
Environmental Assessment**

**Public Information Centre #2
September 26, 2024**

The purpose of this PIC is to:



Provide an overview of the Thorndale WWTP and study context.



Evaluate the alternative solutions and alternative designs



Identify progress to date and next steps.



Provide an opportunity for you to learn about the project and how to get involved.

Project Overview

What are we doing?

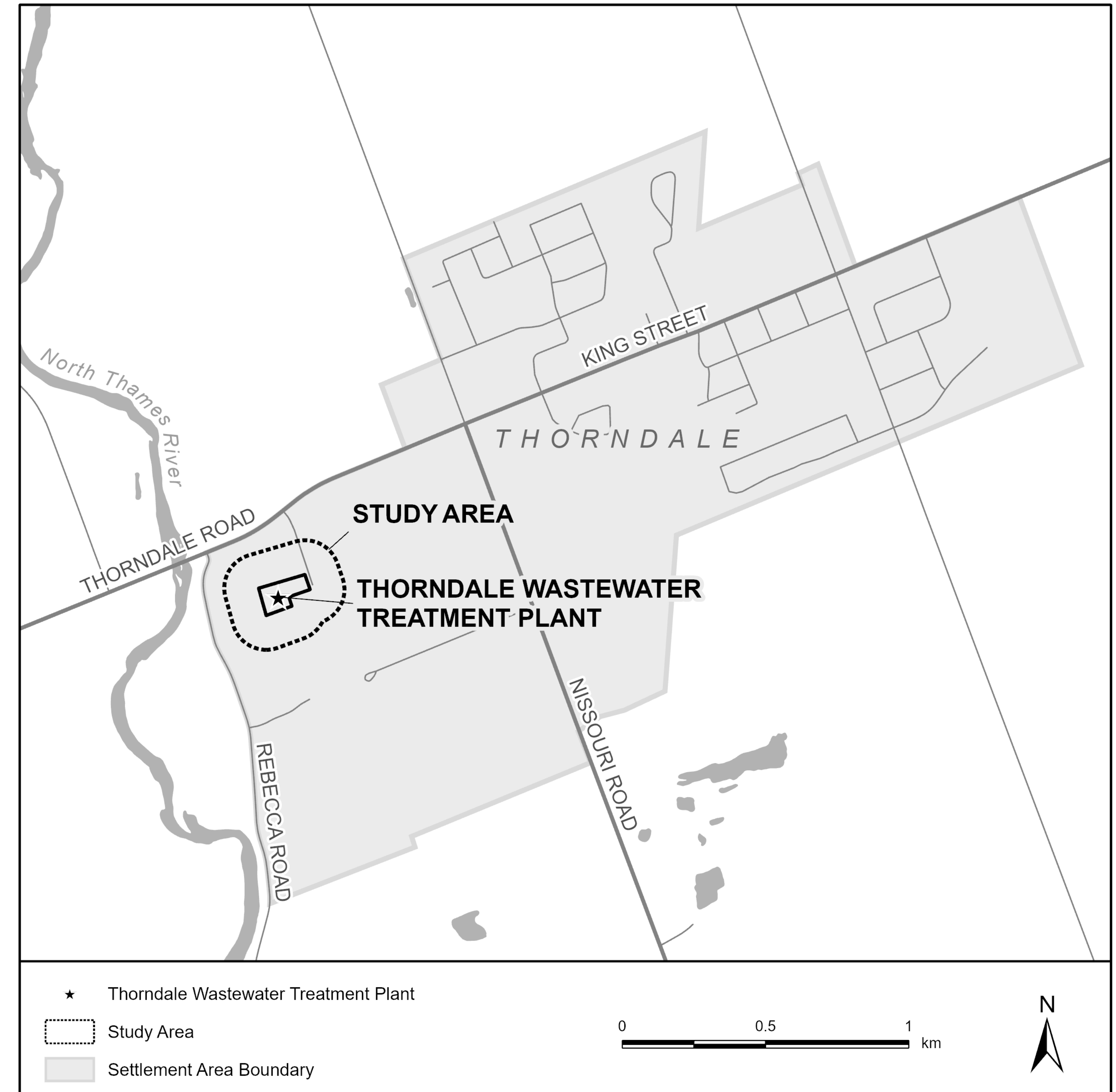
- The Municipality of Thames Centre is planning for the future capacity expansion of the WWTP to serve the community of Thorndale.

Why are we doing it?

- To accommodate future residential and commercial/industrial development by ensuring wastewater treatment capacity is available.

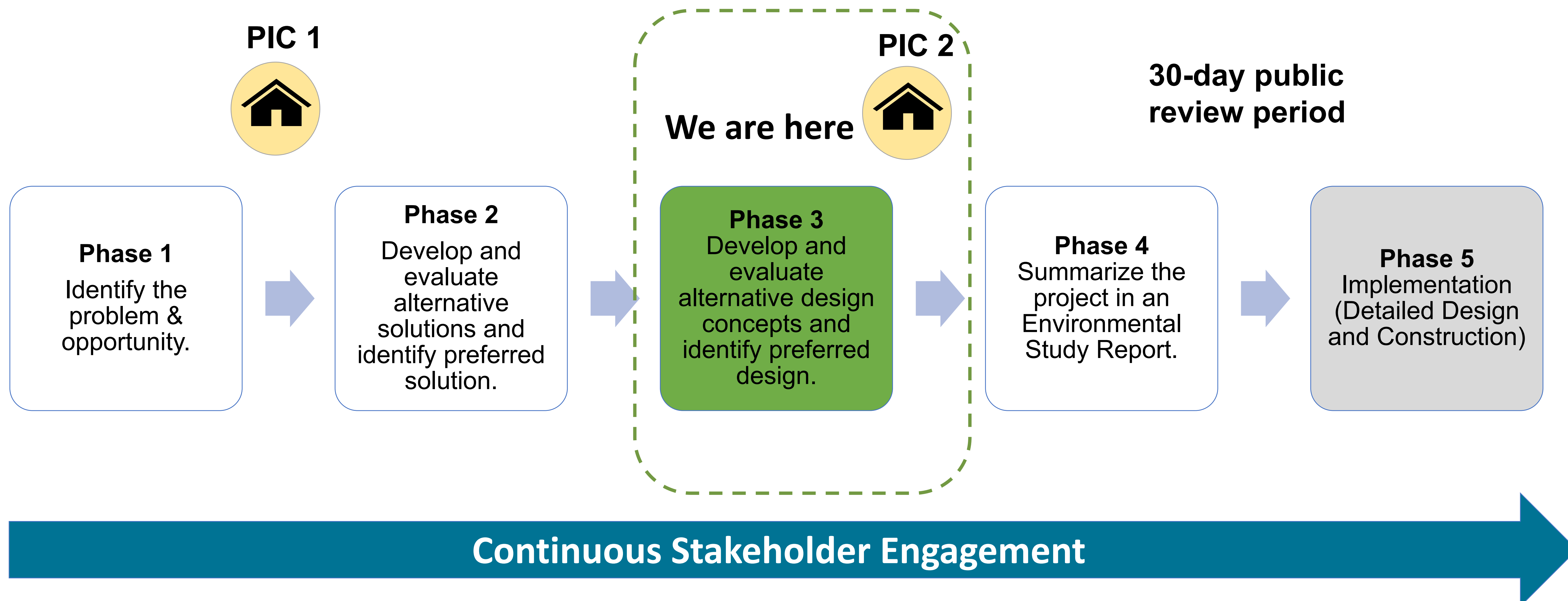
What does the Study Area include?

- The study area includes the existing WWTP on Ideal Drive and adjacent property, as shown on the map.



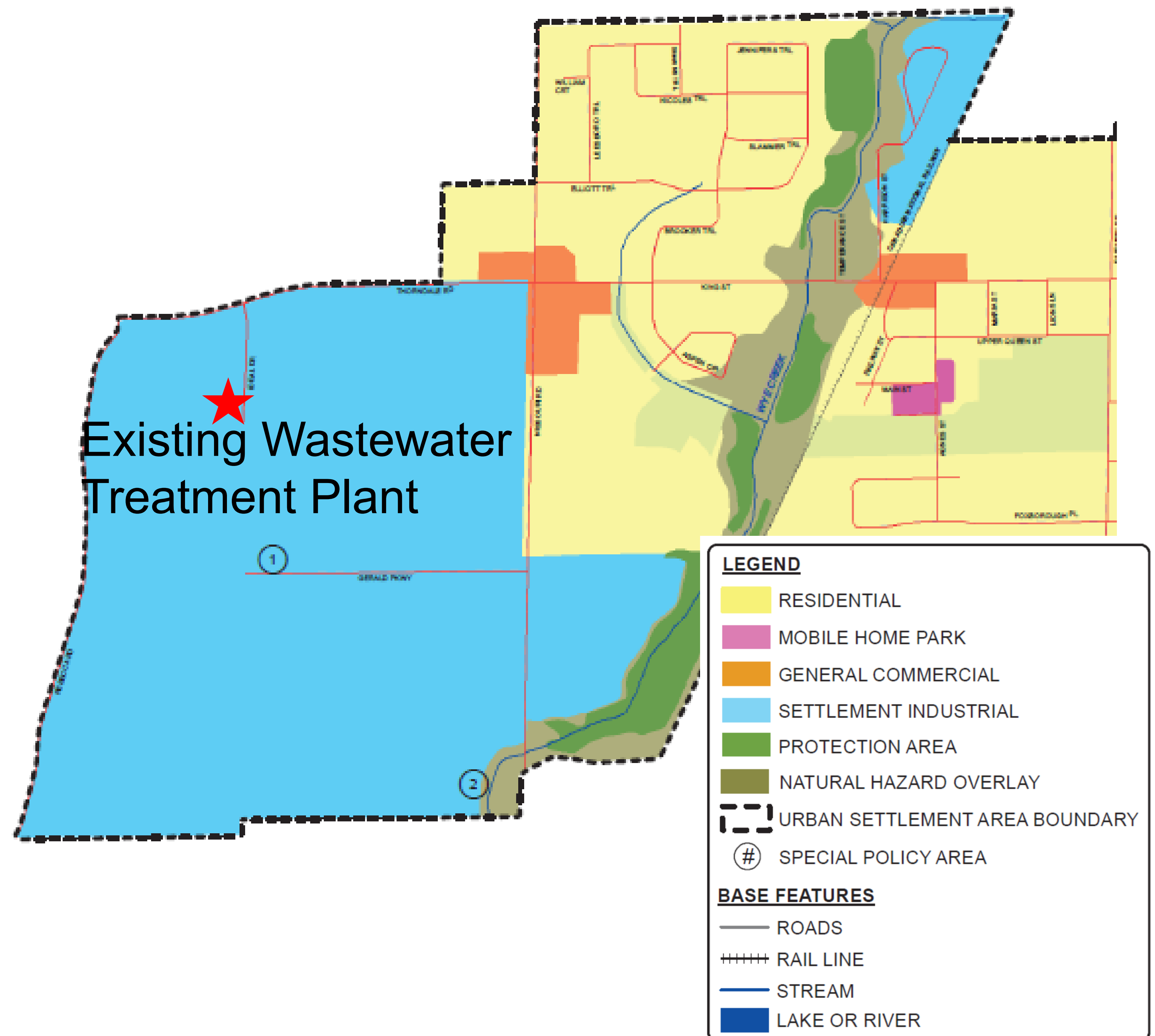
Municipal Class Environmental Assessment Process

- This study is following the requirements of a Schedule C Municipal Class Environment Assessment (EA), including the completion of Phases 1 - 4 of the process summarized below.
- The study includes opportunities for public input including two Public Information Centres (PICs) and a 30-day review of the Environmental Study Report at the end of the project.



Existing Conditions - Land Use Context

- The *Municipality of Thames Centre Official Plan* (2004, consolidated 2022) designates the WWTP property as “Settlement Industrial”.
- The *Middlesex County Official Plan* (2023) designates Thorndale as a “Community Area”. Community Areas must have potential to accommodate future growth, serve a community function, and provide a level of service necessary to support future growth.
- The County Official Plan encourages the development and improvement of sanitary services in the County.
- The *Provincial Policy Statement* (PPS, 2020) requires that municipal wastewater supply systems consider factors such as:
 - Forecasted growth
 - Health & safety
 - Natural environment
- Growth is directed to Settlement Areas and must make efficient use of land and natural resources.



Municipality of Thames Centre Official Plan - Thorndale Land Use

Existing Conditions - WWTP Infrastructure

- The Thorndale WWTP has a design capacity of 674 m³/day.
- The site services approximately 1,500 Thorndale residents.
- The WWTP has shown good operational performance and good effluent quality, based on historical data (2018-September 2023).



Existing Thorndale WWTP (Google Streetview, 2023)

The existing WWTP has the following key process features:

- Wastewater arrives using a low-lift pumping station;
- Mechanical screening and grit channels before entering a pre-react zone;
- Treatment using Sequencing Batch Reactors (SBRs), with alum used for phosphorus removal;
- Decanted effluent from the SBR is directed to the ultraviolet (UV) disinfection system; and
- Treated effluent moves to the effluent chamber prior to discharge of treated water to the Thames River.

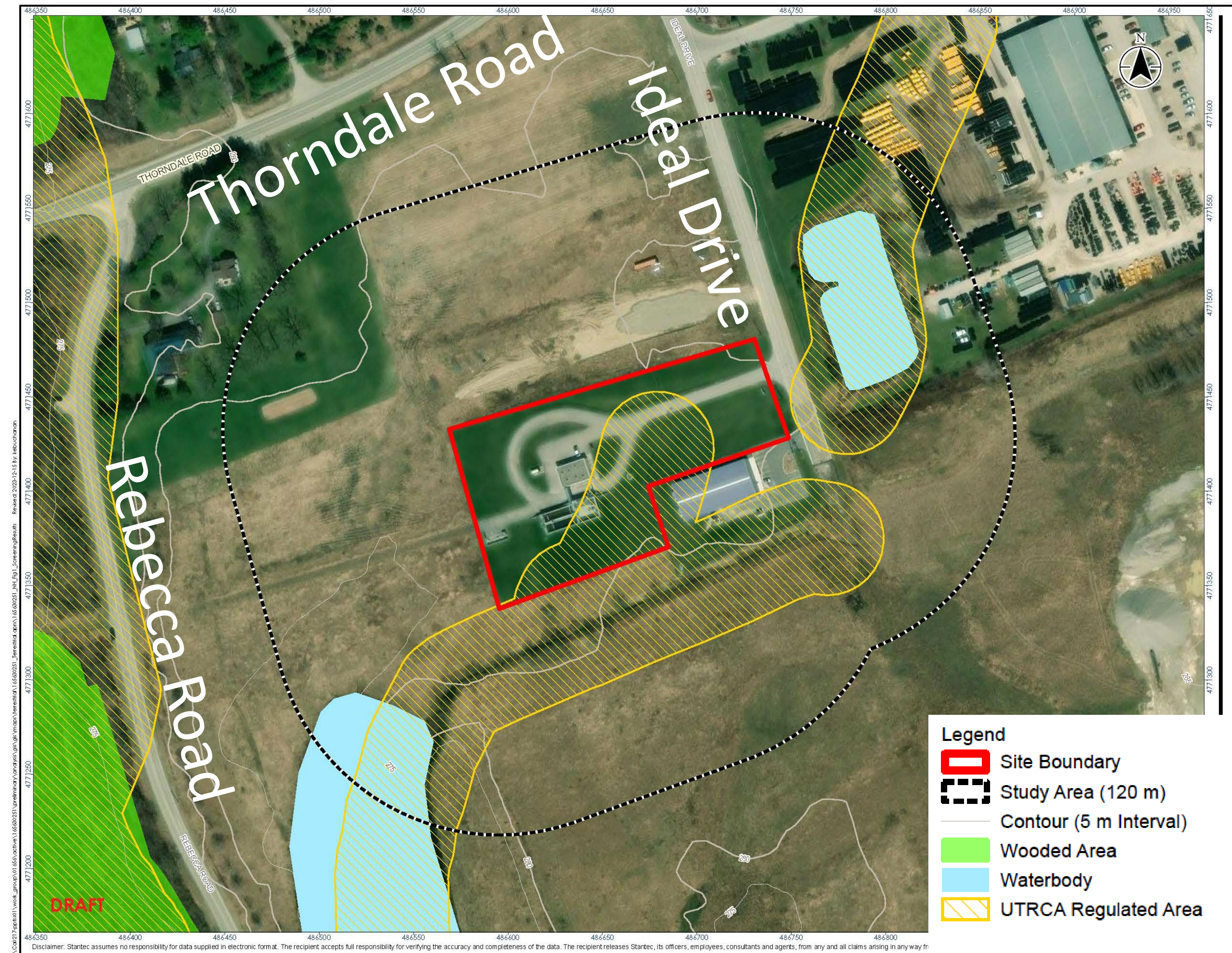
Existing Conditions - Investigations

Terrestrial and Aquatic Environment

- No Areas of Natural and Scientific Interest (ANSIs), or Provincially Significant Wetlands (PSWs).
- Waterbodies are present in the study area. Thames River is the effluent receiver.
- The study area is partially located within an Upper Thames River Conservation Authority (UTRCA) Regulated Area.
- There is potential for Species at Risk (SAR) and Species of Conservation Concern (SOCC) habitat based on the records review, although none within the fenced area.
- A future field study is recommended prior to construction in work areas to search for migratory birds or SAR/SOCC species.

Archaeology and Built Heritage

- No Built heritage resources within 50 m of the site.
- Previous Stage 1 archaeological assessment did not identify archaeological potential due to previous disturbance (former gravel pit).



Natural Environment Existing Conditions

Problem and Opportunity Statement

Based on the existing and future conditions related to the community of Thorndale, the following problems and opportunities were identified:

- The WWTP is operating at an average daily raw flow of 300 m³/d, representing approximately 45% of the annual average rated plant capacity. The plant was expected to reach 50% at the end of 2023 based on available data.
- Current average day flow is below plant capacity; however, the Municipality continues to experience growth from new residential, commercial and industrial development which will exceed the WWTP capacity in future years.
- Portions of the community of Thorndale are not currently connected to the WWTP and are expected to be connected in the future which will use up available capacity.

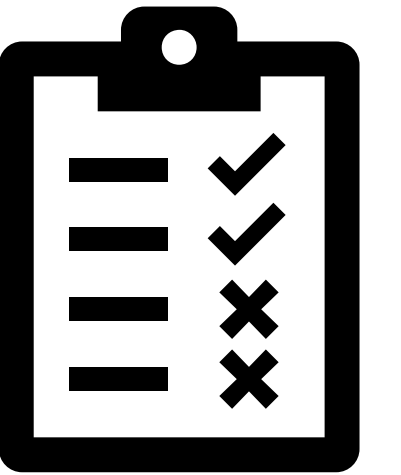
Problem and Opportunity Statement

The Municipality of Thames Centre is anticipating population and commercial/industrial growth and must ensure that wastewater treatment facilities are available to accommodate the desired growth. As a result, the Municipality is undertaking this Municipal Class EA to consider opportunities to expand wastewater capacity for the community that will meet long-term treatment capacity demands consistent with development projections.

Identification of Alternative Solutions

Evaluation of Alternative Solutions is part of Phase 2 of the Municipal Class EA.

A preliminary screening was conducted to determine whether the alternatives had the potential to align with the problem opportunity statement and the Master Plan Update (2019).



Description

- **Do Nothing** – No upgrades to the existing site. The site would continue to use the same capacity.
- **Limit Future Growth** – Consider municipal policy changes to manage or slow future growth.
- **Upgrades at the Existing Site** – Consider possible site infrastructure upgrades to expand treatment capacity at the existing site.
- **Upgrades Requiring Site Expansion** – Potential for upgrades requiring a WWTP property expansion if additional infrastructure is necessary to address future growth that cannot be fully accommodated on the existing site.

Preliminary Screening

ALTERNATIVE	DISCUSSION	RESULT
Do Nothing	<ul style="list-style-type: none"> • No upgrades to the existing facility, but also no increases in capacity in Thorndale • This alternative cannot address the Problem and Opportunity Statement since there are no capacity increases to meet demand growth to 2046 	Not carried forward
Limit Future Growth	<ul style="list-style-type: none"> • Thorndale is a Growth area within the Municipality of Thames Centre Official Plan • Limiting growth would not align with the Official Plan • Cannot avoid future expansion needs when rated capacity is reached 	Not carried forward
Upgrades at the Existing Site	<ul style="list-style-type: none"> • Potential to address the Problem Opportunity Statement to address capacity requirements • Aligns with the <i>Master Plan Update</i> (2019) to address capacity increase needs • Available land on site. Requirements for site size would be confirmed in the Alternative Designs phase 	Carried forward
Upgrades Requiring Site Expansion	<ul style="list-style-type: none"> • Potential to address the Problem and Opportunity Statement to address capacity requirements should additional land be available • The existing WWTP site has enough space for expansion and there is open space available within the site footprint 	Carried forward

Evaluation Criteria

Social Environment



- Minimizes impacts on existing residences, businesses, community features, and other planned land uses
- Aligns with existing and future land use
- Minimizes land requirements
- Protects health and safety

Cultural Environment



- Protects archaeological and cultural heritage resources

Natural Environment



- Protects environmental features, wildlife, and species at risk
- Protects groundwater, streams, and rivers
- Considers climate change impacts

Technical



- Provides reliable service
- Meets municipal and Ministry standards, permits, and approvals
- Meets existing and future infrastructure needs
- Meets performance quality requirements
- Constructability/ System redundancy

Financial



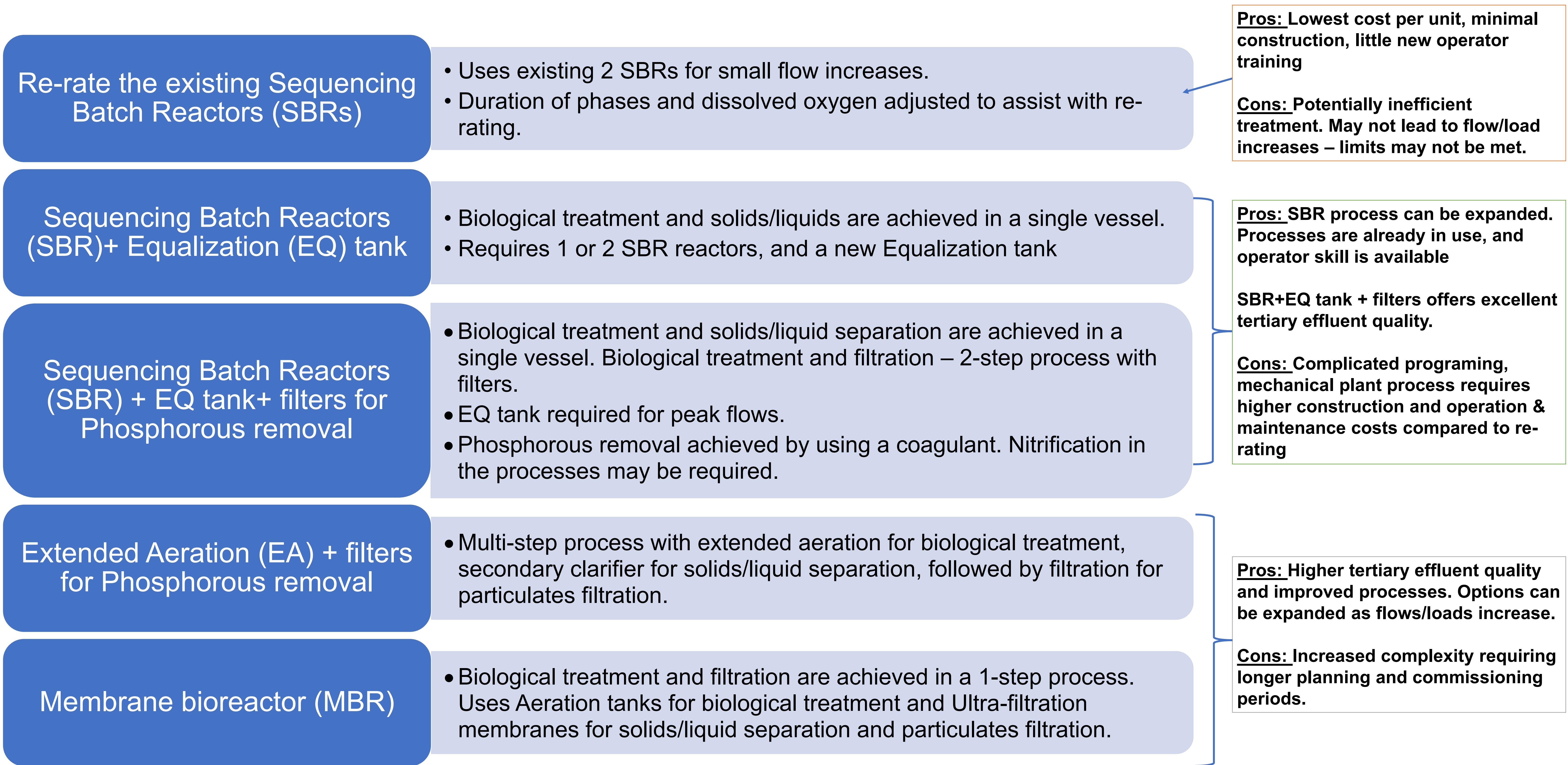
- Provides low lifecycle costs
- Estimated capital cost
- Property acquisition cost
- Operation and maintenance costs

Evaluation of Alternative Solutions

CATEGORY	UPGRADES AT THE EXISTING SITE	UPGRADES REQUIRING SITE EXPANSION	DISCUSSION
Socio-Economic Environment	Preferred	Not Preferred	<ul style="list-style-type: none"> Similar level of impact (construction-related), minor removal of nearby land for the industrial park may limit future development potential of the lands.
Cultural Environment	Preferred	Not Preferred	<ul style="list-style-type: none"> No archaeological potential on the existing site. No cultural heritage resources are within 50 m of the existing site, but expansion footprint may be larger.
Natural Environment	Preferred	Not Preferred	<ul style="list-style-type: none"> Work within the existing limits minimizes the potential to impact natural environment. Confirmed no additional property is necessary to construct upgrades.
Technical	Preferred	Preferred	<ul style="list-style-type: none"> Similar technical complexity and constructability.
Financial	Preferred	Not Preferred	<ul style="list-style-type: none"> Least cost as property is available on site. Reduced distances to convey flow by keeping it close to existing processes.
Overall	Preferred Construction on site minimizes the potential for off-site impacts, and available land is present to address process upgrade requirements.	Not Preferred	<p>“Upgrades at the Existing Site” was identified as the preliminary preferred Alternative Solution.</p> <p>Alternative Design concepts are developed in Phase 3 to implement the preferred solution.</p>

Identification of Alternative Designs Long-List

- Phase 3 of the Municipal Class EA includes identifying and evaluating Alternative Designs to address the preferred Alternative Solution: Upgrades on the Existing Site.
- A long list of wastewater treatment options was considered to identify potential treatment process options:



Alternative Designs Long-List Screening

A series of “YES/NO” questions was used to assess factors contributing to effective treatment of effluent. This screening process led to the selection of two preferred designs for further evaluation.

Questions

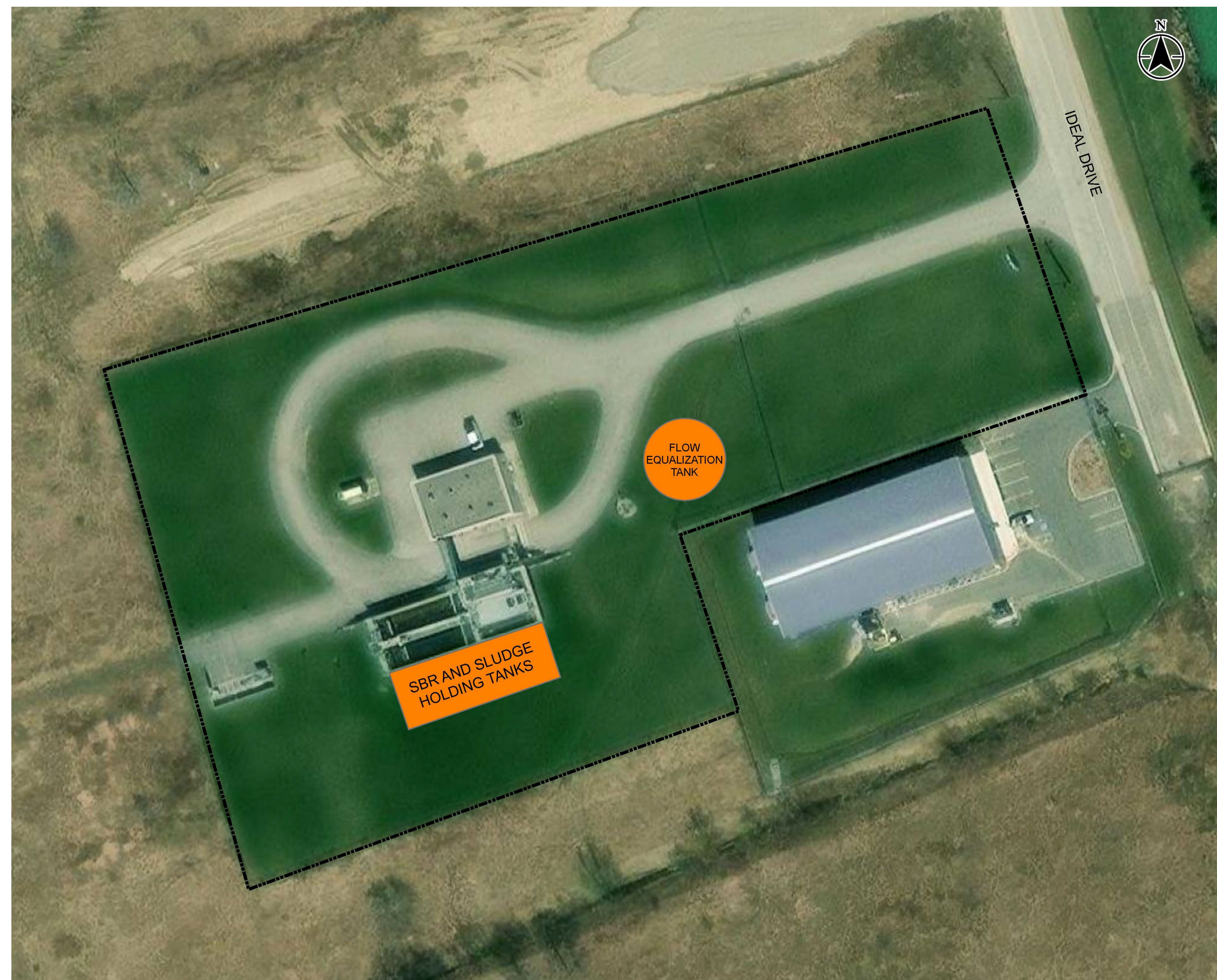
1. Is there sufficient space for a new process?
2. Potential for MECP to approve the new process and issue a letter of conformance?
3. Are there other proven installations in Ontario?
4. Are there suitable sludge management options available?
5. Does the process maximize and optimize the use of existing infrastructure?
6. Will the process provide capacity to service growth and allow for expansion beyond the 20-year planning horizon?
7. Does the solution support the Strategic Needs and Official Plan direction of the Municipality?

Table Depicting Pass/Fail

Process	PASS / FAIL - Comments
Re-rating	FAIL – insufficient flow/load for future expansions.
SBR	PASS – carried forward for further evaluation.
SBR + filters	PASS – carried forward for further evaluation.
EA + filters	FAIL – Can have high construction cost, poor use of existing mechanical treatment plant infrastructure.
MBR	FAIL – Can have high construction cost, poor use of existing mechanical treatment plant infrastructure.

Alternative Design Concept 1

- New Sequencing Batch Reactor system (SBR) and an equalization tank to boost secondary treatment capacity.
- **Key Points:** Maintains existing processes where feasible, adds new infrastructure as needed, and preserves the current layout of the sanitary collection system.



Alternative 1: Sequencing Batch Reactor with Equalizer Tank Expansion

Alternative Design Concept 2

- New Sequencing Batch Reactor (SBR) system and a filtration system to handle higher influent concentrations and meet future effluent standards.
- **Key Points:** Enhances existing secondary treatment with additional filtration for tertiary treatment, reuses current infrastructure, and maintains the existing sanitary collection system layout.



Alternative 2: Sequencing Batch Reactor with EQ Tank and Filtration Expansion

Preferred Treatment Option

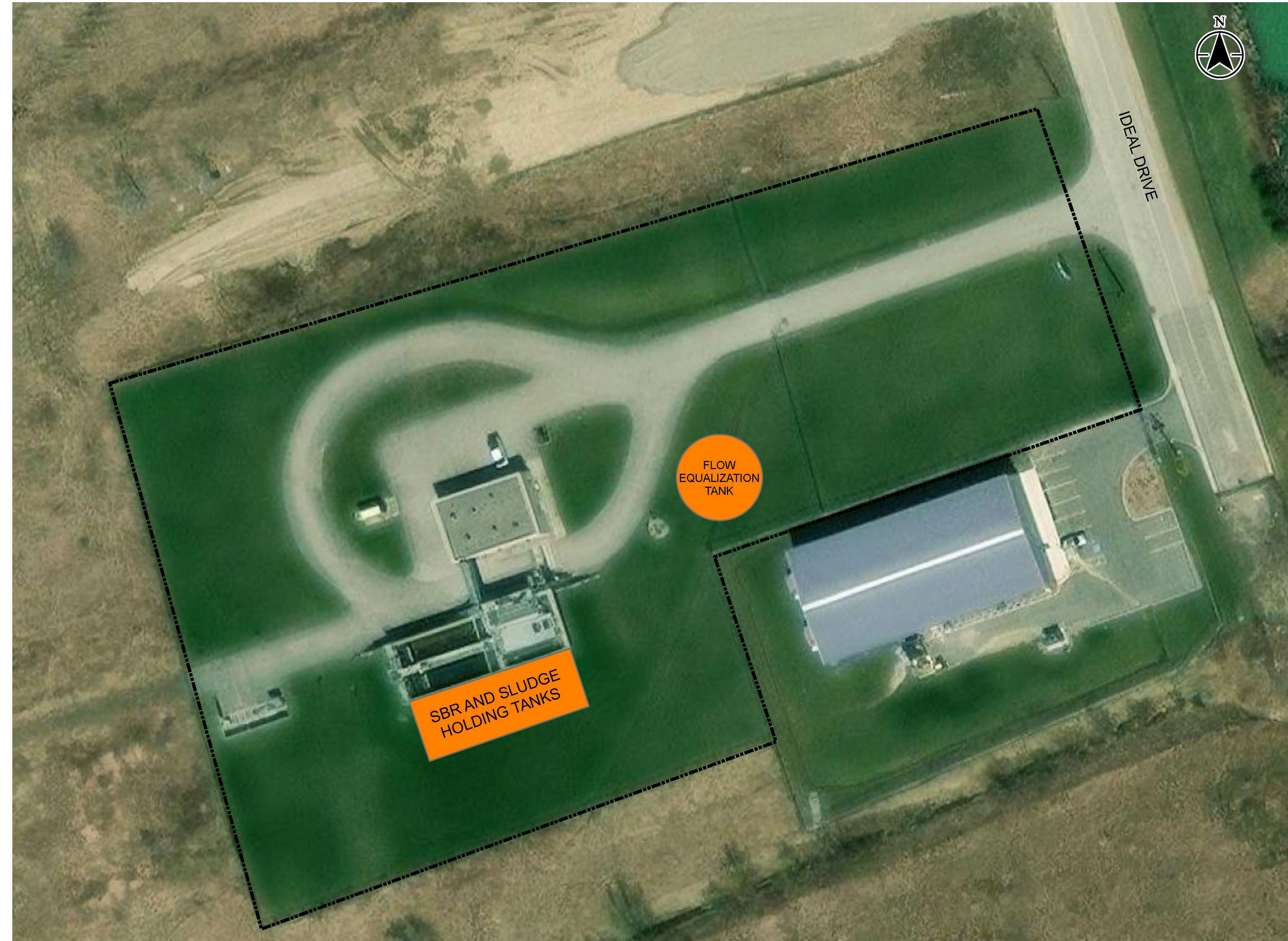
Alternative Design Alternatives 1 & 2 were assessed against the evaluation criteria to determine the preferred treatment option.

CRITERIA	Alternative 1: WWTP Sequencing Batch Reactor with Equalization Tank Upgrade	Alternative 2: WWTP Sequencing Batch Reactor with Equalization Tank and Filtration Upgrade
Socio-Economic Environment	Most Preferred	Most Preferred
Cultural Environment	Most Preferred	Most Preferred
Natural Environment	Least Preferred	Most Preferred
Technical Environment	Most Preferred	Least Preferred
Financial	Least Preferred	Least Preferred
OVERALL	Most Preferred	Least Preferred

Preliminary Preferred Alternative Design

The preliminary preferred alternative for WWTP expansion based on the detailed evaluation is: **Alternative 1 - WWTP SBR** with the following key advantages:

- Optimizes the use of existing infrastructure, including reusing of the existing SBRs
- Adds equalization tanks to buffer peak flows to reach effluent limits
- Ability to accommodate increased influent loadings.
- Ability to reach effluent limits regarding nutrients, organics, and solids
- Although the use of filters (Alternative 2) may provide some improvement to effluent quality, Alternative 1 will still operate within MECP guidelines
- Alternative 1 is less costly and the less complex to operate compared to Alternative 2



Preliminary Preferred Alternative (Alt 1): Sequencing Batch Reactor with Equalizer Tank Expansion

Potential Impacts and Proposed Mitigation Measures

Based on the anticipated impacts, preliminary mitigation measures have been recommended. Mitigation measures will be refined during the future detailed design phase and then implemented during and following construction, with appropriate monitoring programs in place.

Potential Impact	Proposed Mitigation Measures / Commitments to Future Work
Wildlife and Habitat	<ul style="list-style-type: none"> No significant natural habitat features present for Species at Risk within the existing limits. Adhere to timing windows to avoid migratory bird nesting. Conduct a nest search for migratory birds and a search for Species at Risk during the detailed design phase prior to construction and before commencing work.
Aquatic Resources (Thames River)	<ul style="list-style-type: none"> There is no change or modifications to the existing outfall to the Thames River for treated effluent. Continue engagement with MECP regarding Environmental Compliance Approvals (ECA) to meet all established effluent compliance limits and objectives of the facility to avoid impacts to fish and fish habitat.
Upper Thames River Conservation Authority Regulatory Limits	<ul style="list-style-type: none"> Two UTRCA Regulated Areas are present within the study area: 1) drainage ditch on-site, 2) Constructed waterbodies which are beyond the property limits. Any development within these areas are anticipated to require approval from the UTRCA under Ontario Regulation 157/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) under the <i>Conservation Authorities Act</i>. The regulation requires prior permission from UTRCA for any development or alteration within a floodplain, valleyland, wetland, or other hazardous land.
Traffic	<ul style="list-style-type: none"> Construction staging and traffic management will be confirmed during the design phase.
Short-term Construction Impacts	<ul style="list-style-type: none"> Noise, vibration, air (dust), traffic impacts are anticipated but will be temporary in nature and are largely unavoidable. With adequate controls, impacts can be minimized. Mitigation measures are available by designing the building and equipment to minimize sound transmission
Source Water Protection	<ul style="list-style-type: none"> There are no municipal wells in the study area. Significant Groundwater Recharge Areas, Highly Vulnerable Aquifers are present, but are identified as part of the Moderate and Low Threat Policy Area. A Permit to Take Water (PTTW) or Environmental Activity Sector Registry (EASR) may be required during construction, and should be confirmed in detailed design.

Next Steps

- Review and respond to comments received at the PIC to confirm the preferred alternative
- Continue to engage Indigenous communities, the public and agencies.
- Prepare the Environmental Study Report for 30 day public review (Spring 2025)
- Proceed to detailed design and construction when capacity levels are reached

We want to hear from
you!

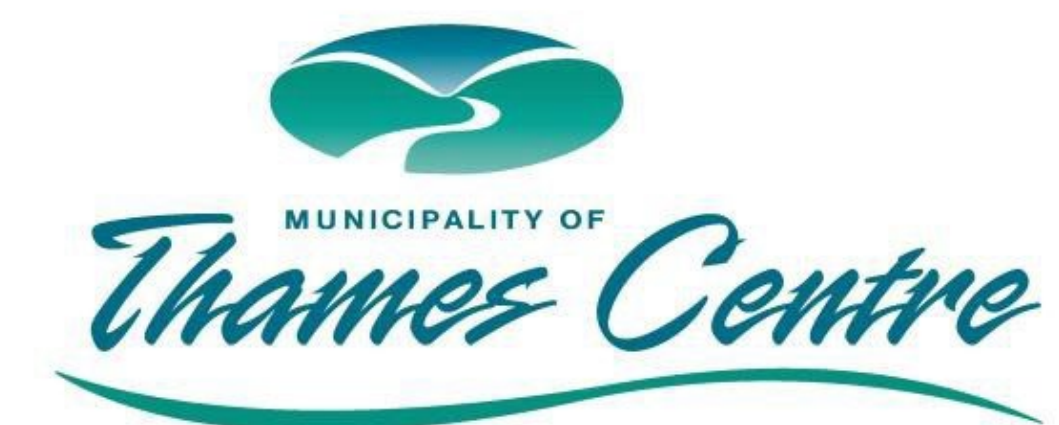


Watch the website for further updates
or ask to join the mailing list!

www.thamescentre.on.ca/ThorndaleWWTPExpansion

Please provide comments by **October 4, 2024**, by submitting a comment form at the PIC or through one of the project team members listed below:

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