MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

LOW LIFT PUMPING STATION IMPROVEMENTS

INFORMATION DISPLAY BOARDS

BACKGROUND

Drinking water is sourced from the English River through an intake pipeline that terminates in the existing low lift pumping station (LLPS) situated near the shoreline. During seasonal periods of low water, the LLPS loses prime, causing difficulties with pump operation and the supply of raw water to the Water Treatment Plant. To identify the preferred alternative to address this issue, the Township of Ear Falls initiated the Municipal Class Environmental Assessment (MCEA) process.

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

1. The MCEA is a process to ensure certain municipal infrastructure projects are planned in accordance with the Environmental Assessment (EA) Act.

2. The MCEA process ensures the intent of the EA Act is met by providing for:

    - The identification of problems or opportunities;
    - The identification, evaluation and selection of a preferred means of addressing the problems or opportunities;
    - Giving due regard to the need to protect the environment and minimize environmental effects; and,
    - Involving affected stakeholders in the decision-making.

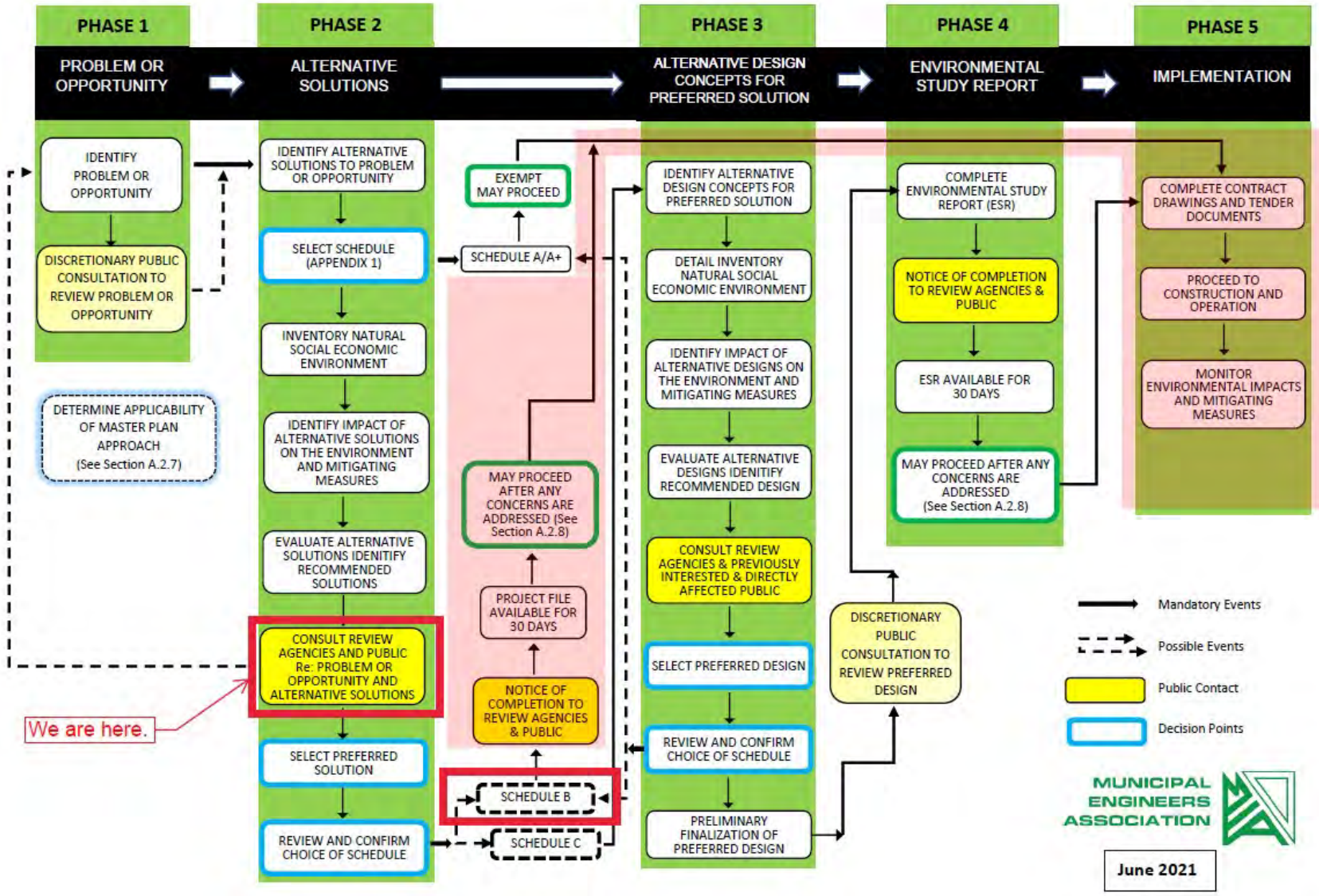
3. This study is being undertaken as a Schedule B project in accordance with requirements of the MCEA.

NOTICE OF COMMENCEMENT

On June 4, 2025, a Notice of Commencement was circulated to Government agencies and Indigenous Communities that may be directly affected by the proposed undertaking.

MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



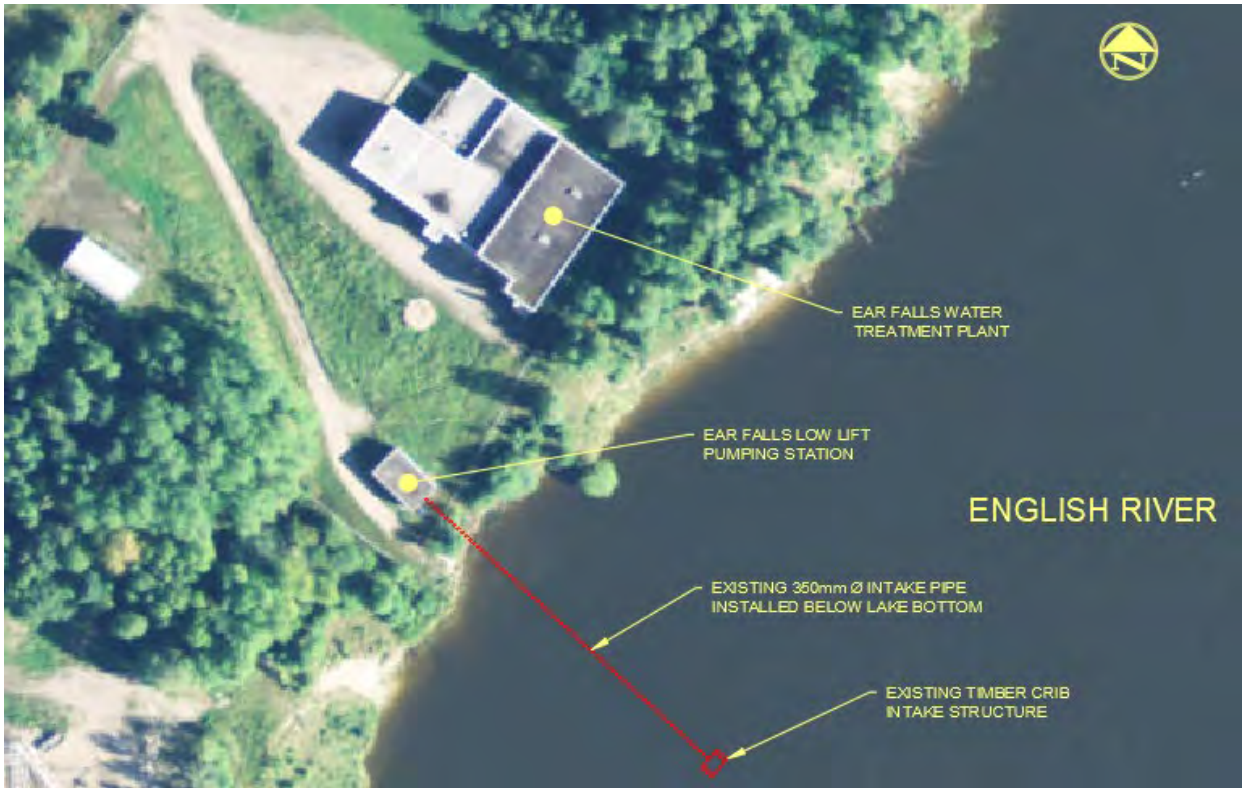
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT – PHASE 1

PROBLEM OR OPPORTUNITY

The Problem/Opportunity Statement for the Drinking Water System Rehabilitation MCEA is defined as follows:

"*The Township of Ear Falls experiences pump priming difficulties during seasonal periods of low water at its low lift pumping station and requires the raw water pumping system to be rehabilitated.*"

RAW WATER INTAKE FACILITIES



INTAKE INSPECTIONS

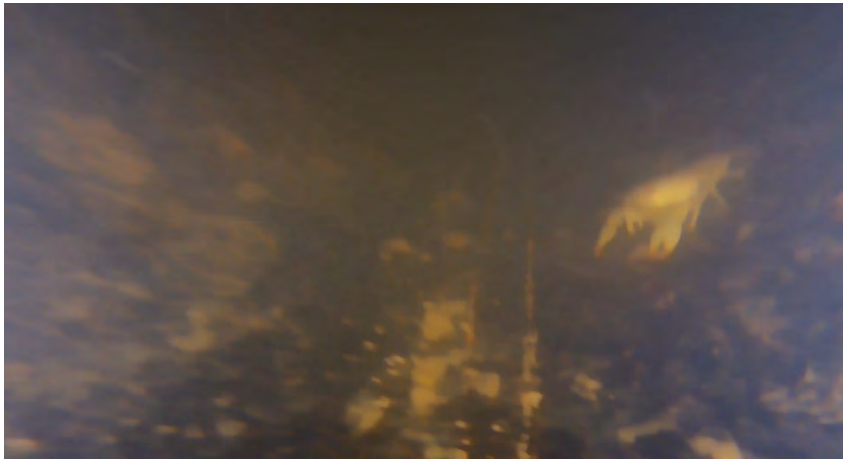
An exterior inspection of the intake structure and interior inspection of the intake pipe were conducted in November 2022 and July 2023, respectively.

- The exterior inspection of the intake structure revealed no obvious failures of the upper and lower timber crib sections and the hatch covers were secure with no visible damage. The intake screen was clean and free from obstructions. Following its inspection, it was determined that the intake structure was in good condition.

- During the initial interior inspection of the intake pipe, the presence of sediment and marine growth was observed along the length of the intake pipe with no obvious signs of pipe failure.

- The intake pipe was then flushed in an attempt to remove material from the pipe wall. The pipe wall appeared to be in good condition where visible with no offset joints post-flushing. What appeared to be dislodged rust particles were observed along the pipe as were pockets of air at various locations at the pipe obvert.

- Due to the age of the existing intake facilities (1968), it is recommended that a new intake pipe and intake structure are constructed. The existing intake pipe and intake structure will be decommissioned.



Photograph 1: Pipe Invert in Good Condition

Photograph 2: Marine Growth Observed at the Obvert (top) of the Intake Pipe

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT – PHASE 2

ALTERNATIVE SOLUTIONS

The first task in Phase 2 of the MCEA process is the identification of reasonable alternatives to the stated problem or opportunity.

Alternative 1: Maintain Existing Conditions ("Do Nothing")

The "Do Nothing" alternative includes making no improvements or changes to address the identified problem/opportunity and it provides a benchmark against which other alternatives are measured or compared. In an MCEA, the Do Nothing alternative may be the preferred solution when the costs/impacts of all other alternatives significantly outweigh their benefits.

Alternative 2: Replace Vacuum System

Alternative 2 involves replacing the original vacuum system with a new vacuum system to help ensure that pump inlets remain flooded during periods of time when the water level in the English River is low, typically in the past during winter months.

Alternative 3: Modify Existing Pumping System

Alternative 3 involves modifying the existing pumping system by installing a check valve on the pump inlet header to maintain flooded conditions, replace packing glands with mechanical seals to eliminate the potential for air to enter pumps and install air relief valves on pumps.

Alternative 4: Install Self-Priming Pumps

Alternative 4 involves replacing the existing with self-priming centrifugal pumps, which are designed for automatic starting with suction lifts of up to 7.6m and do not require separate priming systems.

Alternative 5: Install Vacuum-Assisted Priming Pumps

Alternative 5 involves replacing the existing pumps with centrifugal pumps fitted with a vacuum pump or compressor and related equipment rather than relying on a common vacuum system.

Alternative 6: Construct New Wet Well

Alternative 6 involves constructing a wet well to a depth below the low river elevation to allow the installation of pumps with intakes that will remain flooded at all times, eliminating the priming issue.

INITIAL SCREENING OF ALTERNATIVE SOLUTIONS

An initial screening of the Alternative solutions was completed with only Alternative 6: Construct New Wet Well being carried forward through next steps of MCEA process.

Table 1: Initial Screening Summary

Alternative Solution	Criteria	Description	Short-listed (Yes/No)
Do Nothing	Compliance	1. Alternative solution does not improve the useful life or long-term system reliability of the raw water pumping system.	**No**
	Technical Feasibility	1. Alternative solution does not address the stated problem as the current pump priming issuing at the LLPS will remain. 2. Standard operating procedure developed for operator intervention when low lift pumps lose prime will remain. 3. Tear down of existing low lift pumps is relatively straightforward but maintenance tasks with existing system are extensive. 4. Replacement parts (e.g. pump motors) for existing system have limited accessibility and thus elevated costs.	
Replace Vacuum System	Compliance	1. Replacing the vacuum system may improve the useful life and long-term system reliability of the raw water pumping system.	**No**
	Technical Feasibility	1. Alternative solution does address the stated problem but will rely on one (1) central vacuum system with no redundancy in place. 2. Standard operating procedure for operator intervention when low lift pumps lose prime will no longer be required. 3. Alternative solution introduces additional electrical and/or mechanical equipment thus increasing maintenance requirements and costs as well as risk of system failure. 4. Replacement parts are readily available for new vacuum system and costs are feasible.	
Modify Existing Pumping System	Compliance	1. Modifying the existing pumping system will not improve the useful life and long-term system reliability due to clearances between impellers and volute cases increasing over time, due to wear and tear, causing longer pump run times to prime, further decreasing pump life.	**No**
	Technical Feasibility	1. Alternative solution does not address the stated problem as pump life will decrease. 2. Standard operating procedure for operator intervention when low lift pumps lose prime will no longer be required for the time being. 3. Current extensive maintenance tasks will remain including on an existing low lift pump due to a bearing issue. 4. Replacement parts (e.g. pump motors) for existing system have limited accessibility and thus elevated costs.	

Table 1: Initial Screening Summary

Install Self-Priming Pumps	Compliance	1. Installing self-priming pumps will not improve the useful life and long-term system reliability due to purging the volume of air along large diameter and long horizontal portion of pipe remaining problematic.	**No**
	Technical Feasibility	1. Alternative solution does not address the stated problem as reliable performance of self-priming pumps will be compromised. 2. Standard operating procedure developed for operator intervention when low lift pumps lose prime will remain. 3. Alternative solution introduces additional electrical thus increasing maintenance requirements and costs as well as risk of system failure. 4. Replacement parts are readily available for new self-priming pumps and costs are feasible.	
Install Vacuum-Assisted Priming Pumps	Compliance	1. Installing vacuum assisted priming pumps may improve the useful life and long-term system reliability.	**No**
	Technical Feasibility	1. Alternative solution does address the stated problem safely but may not be the most efficient. 2. Standard operating procedure for operator intervention when low lift pumps lose prime will no longer be required. 3. Alternative solution introduces additional electrical and/or mechanical equipment thus increasing maintenance requirements and costs as well as risk of system failure. 4. Replacement parts are readily available for new vacuum assisted priming pumps and costs are feasible.	
Construct New Wet Well	Compliance	1. A new wet well and raw water pumping system will improve the useful life and long-term system reliability as pump intakes will remain flooded at all times.	**Yes**
	Technical Feasibility	1. The alternative solution addresses the stated problem by replacing the entire raw water pumping system. 2. Standard operating procedure for operator intervention when low lift pumps lose prime will no longer be required. 3. Alternative solution has the least amount of maintenance tasks required and pump repair/replacement is relatively straightforward. 4. Replacement parts are readily available for new raw water pumping system and costs are feasible.	

DESCRIPTION OF VIABLE ALTERNATIVE

Intake Facilities

- Alternative 6 will involve construction of a 3.0m (10 feet) diameter, approximately 9.4m (31 feet) deep pe-cast concrete wet well, raw water pumping system and new intake facilities.
- A new 72m (236 feet) long section of 350mm (14 inch) diameter intake pipe will be installed via directional drilling to limit disturbance.
- High-density polyethylene (HDPE) solid wall pipe may be used for the raw water intake; the pipe material will be confirmed during the detailed design stage.
- A new intake structure installed adjacent to the existing intake facilities will be fitted with coarse intake screens and situated within a bolted steel frame.
- An isolation sluice gate valve will be installed at the wet well inlet to facilitate isolation of the well for maintenance purposes.
- The proposed raw water pumping system housed within the concrete wet well comprises two (2) multi-stage submersible pumps (duty and standby) due to English River water levels being dam controlled and fluctuating at times.
- Each 150mm (6 inch) diameter pump discharge pipe will be equipped with a 150mm (6 inch) diameter gate valve to allow for servicing in the event of pump failure prior to connecting to a common tee header and expanding to 200mm (8 inch) diameter inside of the wet well.
- A 13m (43 feet) long, 200mm (8 inch) diameter common header will convey raw water to the LLPS and connect to the existing 200mm diameter discharge header, which supplies raw water to the Water Treatment Plant.
- Decommissioning and removals adjacent to and from the LLPS will include: existing raw water pumping system, intake facilities, all electrical and control as well as the original vacuum system and related components in the LLPS.

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT – PHASE 2

Potential environmental impacts on the natural, social and economic environments resulting from implementation of Alternative 6 were identified along with corresponding mitigation measures, as summarized in Table 2.

Table 2: Summary of Potential Environmental Impacts and Mitigation Measures

Evaluation Criteria		Potential Environmental Impacts	Mitigation Measures
Natural Environment	English River	• Project not expected to impact aquatic habitat and species during implementation	• Proposed intake pipe installed via directional drilling • Consultation with MNR regarding timing windows and permit/approval requirements. • Implementation of erosion and sediment control plan.
	Vegetation	• Minimum number of trees removed for proposed wet well	• Consultation with MNR regarding timing windows and permit/approval requirements.
	Species at Risk	• 6 SAR identified in or near Study Area: - Canadian Warbler - Olive-sided Flycatcher - Barn Swallow - Common Nighthawk - Evening Grosbeak - Rusty Blackbird	• Consultation with MNRF and MECP regarding timing windows and proper setbacks. • Implementation of erosion and sediment control plan.
Social Environment	Land Use	• Sources of noise dominated by use of heavy-duty equipment along the LLPS shoreline	• Installation of temporary fencing to minimize noise, dust and visual impacts. • Provide advance notice of construction to adjacent property owners.
	Heritage Resources	• Low potential for impacts on archaeological resources and heritage/cultural heritage landscapes	• If archaeological resources are discovered, construction will be halted immediately and MHSTCI notified.
	Indigenous Communities	• 3 Indigenous Communities identified as potentially being directly affected: - Wabauskang First Nation - Lac Seul First Nation - Northwestern Ontario Métis Community	• Indigenous Communities consulted throughout the MCEA process
	Recreation	• Restricted recreational activities such as boating, swimming, canoeing and fishing in area of intake facilities	• Restricted access within/near the work areas will be limited as reasonable as possible while maintaining a safe work area
Economic Environment		• Majority of commercial properties located approximately 0.85-1.05km southwest of the Study Area • Capital costs estimated to be feasible based on funding stream in addition to available Township funds	• Alternative design concepts will be explored during detailed design to confirm most technically and economically feasible solution

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT – PHASE 2

PREFERRED "ALTERNATIVE TO" THE UNDERTAKING

Based on the results of the MCEA Phase 2 evaluation process, the preferred "alternative to" the undertaking is the construction of a new wet well, raw water pumping system and intake facilities.

NEXT STEPS IN THE PROCESS

1. The purpose of this Open House is to present a summary of the MCEA work carried out to date and to provide an opportunity for input to the public.

2. Following receipt of all consultation comments, the preferred solution will be confirmed and a Notice of Completion will be circulated to Government agencies, Indigenous Communities and the public for a 30-day review period.

3. Once any concerns are considered, the project will proceed to the implementation stage (Phase 5) of the MCEA, including the completion of contract drawings and Tender documents and construction.

Please contact one of the following project team members if you have any questions or wish to obtain more information on the project:

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