

Memorandum

To: Brigitte Jetté
Township of Ear Falls, Manager of Water and Wastewater Operations

From: Ryan Wilson, P. Eng.

Date: October 15, 2025

KEC Ref: 2276.02

**Re: Ear Falls Low Lift Pumping Station Improvements
Municipal Class Environmental Assessment – Phase 1 & 2 Summary**

As a component of the ICIP funded Low Lift Pumping Station Improvements undertaking, the Township of Ear Falls (Township) has identified pump priming difficulties at the low lift pumping station (LLPS) and is assessing alternative approaches to address these concerns. 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 (WTP). To support the development of alternative approaches, underwater inspections and a geotechnical investigation were completed.

Prior to replacing the water intake pipe for a surface water source, the requirements of a Schedule B Municipal Class Environmental Assessment (MCEA) must be satisfied. The purpose of this Memorandum is to address Phase 1 and 2 (identification of problem/opportunity and alternative solutions as well as evaluation of those solutions) of the MCEA.

1.0 MCEA Phase 1 - Develop Definition of Problem/Opportunity

1.1 System Overview

The Township is supplied potable drinking water from a WTP that sources raw water from the English River via a 350mm diameter ductile iron (DI) intake pipe that terminates at a screened intake crib roughly 58m from shore. The intake structure was constructed in 1968 and is comprised of 200mm x 200mm timbers, a stainless-steel screen shaped in a manner concave to the structure and a hinged HDPE top cover affixed to the structure using lag bolts.

Raw water is pumped from the intake pipe by a system of three (3) low lift pumps, situated within the LLPS. Just outside the east wall of the LLPS, the intake pipe reduces in diameter to 250mm and then connects to an intake header before entering the LLPS building. The LLPS does not include a raw water pumping well and pumps draw directly from the intake pipe. Pump intakes were originally fitted with vacuum assist to aid in keeping the low lift pumps primed.

General Description of Project Rationale

The centreline of the low lift pump intake is at an elevation of roughly 355.59m which is above the typical English River low water elevation of roughly 354.80m since the year 2000 (and as low as 354.50m in 2007). In addition to the required vertical lift, at times it is also necessary to purge air along a varying horizontal length of the intake pipe, as depicted in available drawings. Considering this, and in order to provide for proper pump functionality, the LLPS was originally equipped with a vacuum priming system which is currently not functional. Comparing available as-constructed drawings, it is evident that critical priming system components are currently missing (e.g. priming valve, strainer, water level switch, etc.).

During seasonal periods of low water, the LLPS loses prime causing difficulty with pump operation and the supply of raw water to the WTP. When the low lift pumps lose prime, operator intervention is required to restore proper pump functionality and ensure uninterrupted supply of potable water to the Township. A standard operating procedure has been developed that, depending on the scenario, may require that a portable trash pump be used to pump raw water from the river into the low lift intake header.

Problem or Opportunity Statement

The Problem/Opportunity Statement for the Low Lift Pumping Station Improvements 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.”

1.2 Intake System Inspections

An exterior inspection of the intake structure and interior inspection of the intake pipe were conducted in November 2022 and July 2023, respectively, in order to support the development of optional approaches to address the LLPS priming issue. Inspections were completed using a diving crew and remote operated vehicles.

The exterior inspection of the intake structure revealed no obvious failures of the upper and lower 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.

As a result of the intake pipe being buried along its full length, an interior inspection of the pipe was carried out to assess its condition. In addition to the presence of sediment, marine growth was also observed along the length of the intake pipe with no obvious signs of pipe failure observed during the initial inspection. The intake pipe was then flushed in an attempt to remove material from the pipe wall. As with the initial inspection, no obvious indications of pipe failure were observed during the post-flushing inspection. The pipe wall appeared to be in good condition where visible. What appeared to be dislodged rust particles were observed along the pipe as were pockets of air at various locations at the pipe obvert.

Though difficult to view over its entire length due to turbid conditions inside the intake pipe, it appeared that the intake pipe was in good condition with no obvious indications of pipe wall failure or offset joints. There being no indication of pipe failure considering long term raw water turbidity monitoring supports this conclusion.

Following both inspections, it was concluded that neither the intake pipe nor intake structure currently require remedial work.

1.3 Geotechnical Investigation

A field geotechnical investigation was performed in October 2024 in the vicinity of the LLPS in order to characterize the subsurface soil and groundwater conditions to support the development of optional approaches to address the LLPS priming issue.

Two (2) boreholes (BH24-03N and BH24-03S) were drilled to the south of the existing low lift pumping station, near the proposed new wet well location. The augered/cored/DCPT boreholes were advanced to depths of 4.3m (BH24-03N) and 17.1m (BH24-03S) prior to auger refusal from existing ground surface at each borehole location. Sand fill soils were encountered to depths of 1.5m followed by a 0.1m thick layer of silty clay to a depth of 1.6m then silt and/or clayey silt soils below the upper sand soils (interlayered within the sand soils) to a depth of 6.1m; and sand soils to auger refusal in BH24-03S at 17.1m including a pocket/layer of silt and/or clayey silt was encountered within the sand soils at a depth range between 3.1m and 6.1m below the existing ground surface.

It is stated in the geotechnical report that depth to the water table may fluctuate seasonally, or after periods of extended precipitation or drought, and may differ at other times. It is anticipated that the groundwater will be hydraulically connected to the adjacent English River water level fluctuation, which is understood to be dam controlled and may fluctuate by about 5m in elevation difference between a geodetic elevation of 352.0m at low level and 357.0m at high level.

1.4 Notice of Commencement

In June 2025, a Notice of Commencement of the MCEA process was posted on Ear Falls's municipal website as well as circulated to Government agencies and Indigenous communities that may be directly affected by the proposed undertaking.

2.0 Phase Two – Develop and Evaluate Alternative Solutions to the Identified Problem/Opportunity

2.1 Identify and Evaluate Alternative Solutions

The first task in Phase Two of the MCEA process is the identification of reasonable alternatives to the stated problem or opportunity. In consultation with Municipal staff and the MCEA guideline documents, the following alternatives were developed.

2.1.1 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 to measure other alternatives. In an MCEA, the Do Nothing alternative may be the preferred solution when the costs/impacts of all other alternatives significantly outweigh their benefits.

2.1.2 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. Vacuum systems have evolved from the original system at the LLPS to improve their functionality and reliability.

The original vacuum system has been out of service for a period of time longer than any of the current operators are aware of and no information is available to confirm how effective the system was. Anecdotal information suggests these systems can be maintenance intensive.

2.1.3 Alternative 3: Modify Existing Pumping System

Alternative 3 involves modifying the existing pumping system as follows:

1. Install a check valve on the pump inlet header to maintain a flooded conditions;
2. Replace packing glands with mechanical seals to eliminate the potential for air to enter pumps; and,
3. Installing air relief valves on each pump.

Although these modifications may help maintain a flooded pump inlet and limit the potential for air intrusion, addition of a check valve(s) on the pump inlet introduces additional head loss that will impact (reduce) pump capacity. It was also reported that at least one of the existing pumps requires maintenance due to a bearing issue and it is anticipated that the existing pumps may also have varying degrees of impeller/casing wear thereby impacting their ability to effectively prime themselves should air enter the pump.

2.1.4 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. On start-up, these pumps recirculate water into the casing to draw-in and vent air until the pump is adequately flooded to allow normal pumping to occur. Casings are fitted with an inlet check valve to help keep the suction and discharge lines filled with water between pump shut-downs and start-ups. The pump seals are typically double face mechanical seals to prevent air intrusion during the priming cycle and replaceable wear plates are also provided.

Implementation of this alternative would require re-alignment of the existing inlet and discharge pipes and the existing concrete pump bases. Replacing the existing electric motors will also be required.

2.1.5 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. Similar to Alternative 2, these pumps utilize vacuum to help draw (or lift) water into the pump to flood the inlet. Though effective, vacuum assisted pumps incorporate additional components (ex. compressor) that require maintenance and introduce potential failure points to the system.

Implementation of this alternative would require re-alignment of inlet and discharge pipes as well as concrete pump bases. Replacing the existing electric motors will also be required.

2.1.6 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. In this case, either submersible or vertical turbine low lift pumps can be used. Implementation of this alternative would involve the construction of a concrete wet well to a depth of roughly 10m below ground surface at a location adjacent to the existing LLPS. During construction, the existing LLPS would remain operational so as to not interrupt the supply of raw water to the WTP, requiring that appropriate protections be put in-place. Once new pumping systems are brought online, the existing pumps and appurtenances would be decommissioned and removed.

2.2 Inventory of Environmental Conditions

The second task in Phase 2 of the MCEA is the inventory of the natural, social and economic environments in the Study Area. The Study Area has been defined as the area immediately adjacent to the LLPS including the limits of the raw water intake facilities in the English River. The area of influence considered for the socio-economic environment has been defined as the built-up area of the Township of Ear Falls.

2.2.1 Natural Environment

The access road to the Ear Falls WTP and LLPS is located approximately 0.84km northeast of the Highway 105 and Highway 657 intersection. The LLPS is located approximately 275m southeast of Highway 657 and situated near the shoreline of the English River. Industrial businesses are located along Bannatyne Avenue and Roy Street to the west of Highway 657 between John Street and the WTP/LLPS access road.

Topography

Local topography has moderate to low local relief and a range in variety of plain, undulating to rolling, washed or reworked, and sloping with mixed wet and dry surface conditions. The WTP site is relatively flat throughout its northern portion with the remainder of the property sloping down towards the LLPS and English River to the southeast. The LLPS is approximately 8m below the elevation of the WTP with the elevation of the English River an additional 3.6m below that. The embankment along the shoreline at the LLPS slopes toward the English River.

Geology

According to available geological mapping (Ministry of Natural Resources – Map 5107), the underlying native soil at the Study Area consists of sand and gravel glaciofluvial outwash plain while close to the English River it consists of a sand and clay glaciolacustrine plain or drift veneer overlying bedrock at an unknown depth.

English River

The Township of Ear Falls is located on the west shore of Lac Seul with Highway 105 separating it and the English River at the Ear Falls Generating Station, hydro dam and Lac Seul Generating Station. The Ear Falls and Lac Seul Generating Stations are located adjacent to one another approximately 1.2km south-easterly of the LLPS. The Lac Seul dam regulates the English River water level elevations as well as acting as a head pond for the Ear Falls Generating Station.

Lac Seul is a crescent shaped reservoir in the Kenora District and is approximately 241km long. The reservoir's westerly point is located at Ear Falls and the easterly point is located approximately 70km north of Sioux Lookout with its apex located at Hudson (community in the municipality of Sioux Lookout).

The English River has a total length of 615km with a drainage basin of 52,300 km² and a maximum depth at the Study Area of 12.2m. The river forms just east of the English River settlement in the Thunder Bay District, flows north along the Kenora District boundary to Mattawa Lake followed by Minnitaki Lake to the northwest then passing by Sioux Lookout. The English River continues to flow to the northwest through Lac Seul and the Study Area to its mouth located at Tetu Lake located on the Winnipeg River ultimately draining to Hudson Bay via Nelson River.

Vegetation and Terrestrial Environment

Ear Falls is located in the Eastern Boreal Forest Vegetation Zone within the Lake Wabigoon Ecoregion and more specifically, the Lac Seul Ecodistrict (4S-2). The dominant land cover in the area is mixed forests with a variety of tree species that may include black spruce, jack pine, paper birch, white spruce, balsam fir, trembling aspen, and on fresh to moist, nutrient rich sites balsam poplar, American elm, and black ash. The LLPS is located within a rural environment to the northeast of the built-up community of Ear Falls with an abundance of deciduous and coniferous trees to the north, west and south.

Characteristic mammal and bird species include moose, northern gray wolf, snowshoe hare, bald eagle, hermit thrush, and yellow-rumped warbler. Amphibians and reptiles include blue spotted salamander, green frog, western painted turtle, and red-sided garter snake.

Species at Risk

The Canada Warbler breeds in a range of deciduous and coniferous, usually wet forest types with a well-developed dense shrub layer. According to the Ontario's Species at Risk website, the Canada Warbler is a species of special concern and its primary breeding range is in the Boreal Shield, extending north into the Hudson Plains and south into the Mixedwood Plains.

The Olive-sided Flycatcher is most often found along natural forest edges and openings with its breeding habitat usually consisting of coniferous or mixed forest adjacent to rivers and wetlands. In Ontario,

Olive-sided flycatchers commonly nest in conifers such as White and Black Spruce, Jack Pine and Balsam Fir. According to the Ontario's Species at Risk website, the Olive-sided Flycatcher is a species of special concern that is widely distributed throughout the central and northern areas of Ontario.

The Barn Swallow often build their cup-shaped mud nests almost exclusively on structures such as open barns, under bridges and in culverts. According to the Ontario's Species at Risk website, the Barn Swallow is a species of special concern and is found throughout southern Ontario but can range as far north as Hudson Bay, wherever suitable nest locations exist.

The Common Nighthawk's traditional habitat tends to consist of open areas with minimal ground vegetation (ex. logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores and mine tailings). According to the Ontario's Species at Risk website, the Common Nighthawk is a species of special concern and is found throughout Ontario except for the coastal regions of James Bay and Hudson Bay.

According to the Breeding Bird Atlas, other bird species of special concern reported (5% or less of squares) in the Kenora Region include: Eastern Wood-Pewee, Evening Grosbeak, Bobolink, Rusty Blackbird, Eastern Whip-poor-will, American White Pelican, Black Tern and Bank Swallow.

Areas of Natural and Scientific Interest

The MNR identifies areas of natural and scientific interest (ANSI) that are provincially significant by surveying regions and evaluating sites to decide which have the highest value for conservation, scientific study and education.

There are no designated ANSIs located within the boundaries of the Study Area.

2.2.2 Social Environment

Land Use

The LLPS is located within an Industrial Zone (M1) as per the Township's Restricted Area (Zoning) By-law No. 1010-02. The areas to the west of the LLPS across Highway 657 are zoned as Industrial Zone (M1) with Rural Zone (RU) and First Density Residential Zone (R1) beyond that as well as Rural Zone (RU) to the north on both sides of Highway 657.

Heritage Resources

To evaluate the possibility of potential archaeological, marine archaeological and built heritage/cultural heritage landscapes within the vicinity of the LLPS as well as raw water intake pipe and intake structure in the English River, the Ministry of Citizenship and Multiculturalism (MCM) "Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes" as well as the "Criteria for Evaluating Archaeological Potential" and "Criteria for Evaluating Marine Archaeological Potential" checklists were completed. Following the completion of the checklists, it appeared that the project would not affect any known or potential built heritage/cultural heritage landscapes. The Study Area was identified as having low archaeological potential.

Indigenous Communities

Wabauskang First Nation is located approximately 30 kilometres south of the Township's core along Highway 105. In addition to Wabauskang First Nation, the Study Area is located within or near the traditional areas of the Lac Seul First Nation and Northwestern Ontario Métis Community, who have been consulted throughout the project.

Utilities

Properties within the built-up portion of the community of Ear Falls are serviced by communal water and sewage. The following utility authorities have facilities near the Study Area:

1. Hydro One Networks Inc.;
2. Enbridge;
3. Rogers;
4. Bell Canada; and,
5. Telus.

There is a utility corridor located 95m to the west of the LLPS with underground power fed to the building from the WTP. A gas main is installed between the WTP and LLPS as well.

Recreation

Recreational activities available within the Study Area include activities on the English River such as: boating, swimming, canoeing and fishing in summer months and ice fishing and snowmobiling during the winter months.

2.2.3 Economic Environment

The Study Area is located to the northeast of the built-up community of Ear Falls and to the east of Highway 657. Industrial properties are located along Bannatyne Avenue and Roy Street located to the west of Highway 657 and ranging from approximately 350-500m west of the Study Area. The majority of commercial properties are located along Highway 105 as well as the intersection of Spruce Street and Balsam Avenue, approximately 0.85km and 1.05km southwest of the Study Area, respectively. The Ear Falls municipal landfill is located approximately 6.5km to the northwest of the Study Area.

Capital costs for Low Lift Pumping Station Improvements undertaking will be supplemented by contributions through the *Investing in Canada Infrastructure Program – Green Funding Stream*. Supplementary funding of 33.33% of the eligible costs will come from Ontario's maximum contribution of \$814,252.97 while 40% of the eligible costs will come from Canada's maximum contribution of \$977,201.28. The balance of the capital costs will be payable by the Township of Ear Falls.

2.3 Initial Screening of Alternative Solutions

A list of reasonable alternatives to the stated problem or opportunity was initially developed following consultation with Township staff and the MCEA guideline documents, including the “Do Nothing” alternative. Each alternative solution was assessed against a set of initial screening criteria established to consider key project objectives for the purpose of identifying “viable” solutions. The criteria were evaluated in a “Yes/No” basis and an alternative solution must pass all criteria to be carried forward through the next step in the MCEA process. The initial screening criteria are listed below.

Compliance

1. *Does the alternative solution help to improve the useful life of the raw water pumping system and improve long-term system reliability?*

Technical Feasibility

1. *Does the alternative solution address the stated problem safely and efficiently?*
2. *Is the solution compatible with existing operational practices?*
3. *What is the ease of maintenance (e.g. required maintenance tasks, pump tear down and repair/replacement) compared to other alternative solutions?*
4. *Are replacement parts readily available and the cost feasible?*

A summary of the initial screening of alternative solutions is provided in Table 1.

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.	
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	1. Alternative solution does not address the stated problem as	

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

2.3.1 Initial Screening Summary

As shown in Table 1, only Alternative 6 “Construct New Wet Well” satisfies all of the initial screening criteria and, as a result, this alternative will be carried forward through the next steps in the MCEA process. Alternative 6 includes the construction of a new wet well and raw water pumping system at the Ear Falls LLPS. Alternative 6 improves the useful life and long-term reliability of the raw water pumping system with improved changes to operational practices.

2.4 Description of Preliminary Preferred Alternative Solution

Alternative 6 will involve the construction of a 3.0m diameter, approximately 9.4m deep pre-cast concrete wet well, raw water pumping system and new intake facilities at the LLPS. Due to the shoring/bracing/dewatering required with connecting to the existing 350mm diameter ductile iron pipe, a new 72m long section of 350mm diameter intake pipe will be installed via directional drilling. At this stage, high-density polyethylene (HDPE) solid wall pipe is the pipe material expected to be used for the raw water intake, but the pipe material will be confirmed during the detailed design stage. A new intake structure will also be installed adjacent to the existing intake facilities in the English River and will be fitted with coarse intake screens and situated within a bolted steel frame. The pipe will be constructed below the river bottom for the majority of the proposed length with only a short section laid along the bottom of the English River in order to connect to the new intake structure. An isolation sluice gate valve will be installed at the inlet to the wet well 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). A multi-stage pump is required due to English River water levels being dam controlled and fluctuating between 352.0m (low level) and 357.0m (high level) in recent years. Each 150mm diameter pump discharge pipe will be installed inside of a 300mm diameter drop pipe to simulate a well-type environment. Pitless adapters will be installed at the discharge elevations as well as a pull pipe terminating inside of a pitless unit installed on top of the wet well cover. Additionally, 150mm diameter gate valves will be installed on each discharge header prior to the common header tee connection to allow for servicing in the event of a pump failure. The 150mm diameter discharge pipes will tee into a common header and expand to 200mm diameter prior to exiting the wet well. A 13m long 200mm diameter common header will convey raw water through the south wall of the LLPS and connect to the existing 200mm diameter discharge header.

A new pump control panel will be installed inside the LLPS with the pumps being controlled by variable frequency drives complete with line chokes. With neither of the proposed low lift pumps in operation, the static water level in the wet well will be approximately equal to the water level in the English River. Water levels in the wet well will be monitored by a level transmitter as well as a low-level switch that monitors the low water level in case of transmitter failure.

Decommissioning and removals adjacent to and from the LLPS will include: existing intake structure, 350mm diameter ductile iron intake pipe, 250mm diameter intake header, three (3) existing low lift pumps, suction/discharge piping and appurtenances, 250mm diameter discharge header (up to 250mm diameter transmission main connection), 200mm diameter blow-off, all electrical and control as well as original vacuum system and related components.

To accommodate continued operation of the LLPS, the construction will be staged so all equipment/system downtimes are kept to a minimum and coordinated with the WTP operator.

2.5 Preliminary Capital Costs

An estimate of preliminary capital costs for the project was developed referencing similar wet well and raw water intake construction projects completed in Ontario.

The scope of work includes the construction of a 3.0m diameter, approximately 9.4m deep concrete wet well, raw water pumping system and new intake facilities at the LLPS. A new 72m section of 350mm diameter HDPE intake pipe will be installed via directional drilling and connect to a new intake structure in the English River, which will convey raw water to the new wet well. The new wet well will be comprised of: 350mm diameter sluice gate valve, 2 submersible pumps, 150mm diameter discharge piping, pitless adapter assembly, 2 x 150mm diameter gate valves, 200mm diameter common header, level transmitter, low-level switch, access hatches, ladder and platform. A 13m long, 200mm diameter common header will be installed through the south wall of the LLPS and connect to the existing 200mm diameter raw water main to the WTP. A new pump control panel will be installed inside the LLPS. The existing raw water pumping system will be decommissioned and removed from the LLPS. The Lake of the Woods Control Board (LWCB) will be consulted with prior to the start of construction to ensure that water levels in the English River are at their lowest to ease constructability concerns.

Table 2 provides the pre-design cost estimate for the proposed concrete wet well, raw water pumping system and new intake facilities.

Table 2: Pre-Construction Cost Estimate					
Item	Description	Units	Quantity	Unit Price	Cost (HST Extra)
1	General Requirements				
	Mobilization/Demobilization, bonding, other reqmts	L.S.	1	\$275,000	\$275,000
2	Site Work				
	Excavating, trenching, backfilling	L.S.	1	\$1,250,000	\$1,250,000
3	Concrete				
	Precast concrete	L.S.	1	\$393,900	\$393,900
4	Miscellaneous Metal				
	Misc. metal fabrications	L.S.	1	\$25,000	\$25,000
5	Process Equipment				
	Equipment general provisions	L.S.	1	\$20,000	\$20,000
	Submersible pumps	L.S.	1	\$175,000	\$175,000
6	Mechanical				
	Mechanical general provisions	L.S.	1	\$4,500	\$4,500
	Process piping systems	L.S.	1	\$38,000	\$38,000
	Process valves	L.S.	1	\$10,000	\$10,000
7	Electrical				
	Basic electrical requirements	L.S.	1	\$4,000	\$4,000
	Below grade duct banks and manholes	L.S.	1	\$50,000	\$50,000
	Conduits, conduit fastenings and conduit fittings	L.S.	1	\$3,500	\$3,500
	0-1000 V wires and cables	L.S.	1	\$5,000	\$5,000
	Electrical Boxes and fittings	L.S.	1	\$12,000	\$12,000
	Wiring devices	L.S.	1	\$5,000	\$5,000
	Disconnect switches and manual starters	L.S.	1	\$7,500	\$7,500
	Dry type lighting transformers	L.S.	1	\$7,500	\$7,500
	Lighting panel boards	L.S.	1	\$2,500	\$2,500
	Instrumentation and Control	L.S.	1	\$5,000	\$5,000
8	Restoration	L.S.	1	\$60,000	\$60,000
9	Intake Pipe				
	350mm diameter intake pipe	L.S.	1	\$300,000	\$300,000
	Connect to new wet well and LLPS gate valve	L.S.	1	\$10,000	\$10,000
10	Intake Structure				
	New intake structure	L.S.	1	\$175,000	\$175,000
	Connect to new intake pipe	L.S.	1	\$10,000	\$10,000
11	Decommissioning				
	Decommission ex. intake pipe	L.S.	1	\$50,000	\$50,000
	Decommission ex. intake structure	L.S.	1	\$100,000	\$100,000
	Decommission equipment in existing LLPS	L.S.	1	\$100,000	\$100,000
12	New electrical and controls	L.S.	1	\$200,000	\$200,000
13	Fencing and access drive	L.S.	1	\$50,000	\$50,000
				Sub-Total	\$3,348,400
	Contingency			10%	\$334,840
	Total Estimated Cost (HST Extra)			Total	\$3,683,240

2.6 Potential Environmental Impacts

Potential environmental impacts on the Study Area natural, social and economic environments resulting from implementation of Alternative 6 are described in the following subsections. The Study Area has been defined as the LLPS located south of the Ear Falls WTP including the limits of the raw water intake facilities in the English River. The area of influence considered for the socio-economic environment has been defined as the built-up area of the Township of Ear Falls.

A summary of the potential environmental impacts and corresponding mitigating measures is presented in Table A.

2.6.1 Natural Environment

English River

Improvements at the Ear Falls LLPS is not expected to impact aquatic habitat and species during implementation.

Vegetation

Improvements at the Ear Falls LLPS may require the removal of a small quantity of trees to the southwest of the LLPS during the construction of the new wet well.

Species at Risk

Improvements at the Ear Falls LLPS may potentially impact reported bird species if located near the new wet well location.

2.6.2 Social Environment

Land Use

The LLPS is located in a rural environment and therefore impacts to residents due to noise, dust, mud and increased traffic as well as visual impacts associated with construction activities are not expected.

Sources of noise during the Ear Falls LLPS improvements project will be dominated by the use of heavy-duty equipment along the LLPS shoreline.

The LLPS is located at the bottom of a sloped unpaved access road off of the Ear Falls WTP parking lot. The unpaved parking lot and sloped access road to the LLPS generally hard-packed surface which will help to minimize dust generation.

Higher traffic volumes and additional parked vehicles are expected due to construction vehicles and equipment but will not impact Highway 657 as there is ample parking space on the WTP/LLPS property.

Heritage Resources

The potential for the improvements at the Ear Falls LLLPS impacting archaeological resources is considered low while no heritage/cultural heritage landscapes are expected to be impacted.

Indigenous Communities

The following three (3) Indigenous Communities were identified as potentially being directly affected by the proposed undertaking:

- Wabauskang First Nation
- Lac Seul First Nation
- Northwestern Ontario Métis Community

Improvements at the Ear Falls LLPS is not anticipated to impact the Indigenous Communities noted above but Consultation throughout the MCEA process is ongoing.

Recreation

Recreational activities on the English River may be impacted during the installation of the new raw water intake pipe and intake structure.

2.6.3 Economic Environment

The Low Lift Pumping Station Improvements capital costs are estimated to be feasible based on the total eligible expenditures, which will be supplemented by contributions through the *Investing in Canada Infrastructure Program – Green Funding Stream* in addition to available funds from the Township of Ear Falls.

2.7 Mitigating Measures for Potential Adverse Environmental Impacts

Mitigating measures for the identified potential impacts on the natural, social and economic environments are described below.

A summary of the potential environmental impacts and corresponding mitigating measures is presented in Table A.

2.7.1 Natural Environment

English River

The MNR provides Restricted Activity timing windows for the protection of spawning fish and developing eggs and fry. Even though the Study Area is not located within any designated fish spawning areas, MNR will be consulted to confirm the applicable timing windows as well as any permit and/or approval requirements. Construction of the intake pipe will take place via directional drilling so as to minimize the impact to fish habitat. The proposed intake screen will be designed in accordance with the Department of Fisheries and Oceans (DFO) guidelines to prevent losses of fish due to entrainment or impingement. Additionally, an erosion and sediment control plan will be implemented prior to the start of construction to mitigate the potential for silt and sediment to enter and/or dispersing in the English River.

Vegetation

The removal of vegetation (including brush and small trees) is expected to be minimal to the southwest of the LLPS during the installation of the new concrete wet well.

Species at Risk

The “*Client’s Guide to Preliminary Screening for Species at Risk*” document has been completed and submitted to the MECP SAR branch for review and comment. Both MECP and MNR will be consulted regarding potentially impacted SAR in order to ensure compliance with the Endangered Species Act (ESA). Timing windows, proper setbacks and an erosion and sediment control plan will be implemented as required.

2.7.2 Social Environment

Land Use

Temporary fencing will be installed around the site in order to minimize noise, dust and visual impacts for the duration of the project.

Proper construction signage will be installed along Highway 657 near the site access road to ensure the public is aware of the construction activities occurring in the area.

All construction equipment and vehicles will be equipped with proper and effective muffling devices and will only be operated within the hours allowed under the Township noise by-law. Construction equipment will be appropriately maintained to ensure that any exhaust emissions meet industry standards.

Dust suppression activities such as applying water may be utilized during dry periods where elevated dust generation is probable. Chemical additives such as calcium chloride may be mixed with water if site conditions deem it necessary during construction.

All efforts will be made to minimize mud and dust track-out to Highway 657 including cleaning of wheels prior to exiting the site.

Adjacent property owners will be notified in advance of construction activities and provided with the appropriate contact information in case any problems are encountered.

Heritage Resources

If any archaeological resources are discovered during construction, the work will be halted and MCM notified immediately.

Indigenous Communities

The 3 Indigenous Communities identified as potentially being directly affected by the proposed undertaking will be consulted throughout the MCEA process to ensure any potential concerns and/or impacts are identified and mitigation measures developed and implemented.

Recreation

The degree to which access by boaters, swimmers, canoers and anglers is restricted within/near the work areas near the intake facilities will be limited as reasonable as possible while maintaining a safe work area.

2.7.3 Economic Environment

Alternative design concepts for the construction of a new wet well, raw water pumping system and intake facilities will be explored during detailed design in order to confirm the most technically and economically feasible solution for the project.

2.8 Recommended “Alternative to” the Undertaking

Based on the results from the MECA Phase 2 evaluation process, the recommended “alternative to” the undertaking is the construction of a new wet well, raw water pumping system and intake facilities.

A new 72m section of 350mm diameter HDPE intake pipe will be installed via directional drilling and connect to a new intake structure in the English River, which will convey raw water to the proposed 3.0m diameter, approximately 9.4m deep concrete wet well. The new wet well will include: a 350mm diameter sluice gate valve, 2 submersible pumps, 150mm diameter discharge piping, pitless adapter assembly, 2 x 150mm diameter gate valves, 200mm diameter common header, level transmitter, low-level switch, access hatches, ladder and platform. A 13m long, 200mm diameter common header will be installed through the south wall of the LLPS and connect to the existing 200mm diameter discharger header. A new pump control panel will be installed inside the LLPS. The existing raw water pumping system will be decommissioned and removed from the LLPS. The Lake of the Woods Control Board (LWCB) will be consulted with prior to the start of construction to ensure that water levels in the English River are at their lowest to ease constructability concerns.

Potential impacts to aquatic and bird species, will be mitigated by the construction of the new intake pipe via directional drilling, implementation of an erosion and sediment control plan as well as consultation with MNR and MECP regarding timing windows and proper setbacks. The potential impact on the English River will be mitigated using turbidity curtains and implementing construction techniques that reduce the degree to which sediments are disturbed. Temporary fencing will be installed around the site to minimize noise, dust and visual impacts to adjacent property owners along with proper construction signage posted along Highway 657. The potential to impact archaeological resources is considered low while no heritage/cultural heritage landscapes were identified. The Indigenous Communities identified as being potentially directly affected by the proposed undertaking will continue to be consulted throughout the MCEA process. Recreational activities on the English River will be restricted within the construction zone.

Estimated capital costs are feasible considering the project’s total eligible expenditures established in the funding agreement for the *Investing in Canada Infrastructure Program – Green Funding Stream* in addition to available funds from the Township of Ear Falls.

4.0 Next Steps

Following the Township’s review of this Memorandum, a copy will be circulated to Government agencies and the identified Indigenous Communities. A public information session will be scheduled in order to provide residents with project information including presenting the recommended “alternative to” the undertaking.

Once all consultation comments are received, a preferred solution will be selected along with confirming that the project is a Schedule B undertaking under the MCEA. KEC will then issue a Notice of Completion and make the project file available for 30 days to Government agencies, Indigenous Communities and the public. After all concerns have been addressed, the Township can proceed with implementing the proposed undertaking.

5.0 Closure

Please contact the undersigned with any questions and/or to discuss this memorandum.

Thank you.

This memorandum respectfully submitted by:
Kresin Engineering Corporation

A handwritten signature in blue ink, appearing to read 'Ryan Wilson', is positioned above the printed name.

Ryan Wilson, P.Eng.
Project Engineer

2276 LLPS improvements phase 1 & 2 summary memo.doc

The **purpose of the checklist** is to determine:

- if a property(ies) or project area may contain archaeological resources i.e., have archaeological potential
- it includes all areas that may be impacted by project activities, including – but not limited to:
 - the main project area
 - temporary storage
 - staging and working areas
 - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Archaeological assessment

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed consultant archaeologist (see page 4 for definitions) to undertake an archaeological assessment.

The assessment will help you:

- identify, evaluate and protect archaeological resources on your property or project area
- reduce potential delays and risks to your project

Note: By law, archaeological assessments **must** be done by a licensed consultant archaeologist. Only a licensed archaeologist can assess – or alter – an archaeological site.

What to do if you:

- **find an archaeological resource**

If you find something you think may be of archaeological value during project work, you must – by law – stop all activities immediately and contact a licensed consultant archaeologist

The archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act* [s.48(1)].

- **unearth a burial site**

If you find a burial site containing human remains, you must immediately notify the appropriate authorities (i.e., police, coroner's office, and/or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages when completing this form.

Project or Property Name
Ear Falls Low Lift Pumping Station Improvements

Project or Property Location (upper and lower or single tier municipality)
Ear Falls Water Treatment Plant, Low Lift Pumping Station and raw water intake facilities in the English River

Proponent Name
Corporation of the Township of Ear Falls

Proponent Contact Information
Brigitte Jette, Manager of Water and Wastewater Operations, 807-728-3214

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☒

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

	Yes	No
2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?	☐	☒

If Yes, do not complete the rest of the checklist. You are expected to follow the recommendations in the archaeological assessment report(s).

The proponent, property owner and/or approval authority will:

- summarize the previous assessment
- add this checklist to the project file, with the appropriate documents that demonstrate an archaeological assessment was undertaken e.g., MTCS letter stating acceptance of archaeological assessment report

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., environmental assessment document
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Are there known archaeological sites on or within 300 metres of the property (or the project area)?	☐	☒

	Yes	No
4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property (or project area)?	☐	☒

	Yes	No
5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or project area)?	☐	☒

	Yes	No
6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?	☐	☒

	Yes	No
7. Has the property (or project area) been recognized for its cultural heritage value?	☐	☒

If Yes to any of the above questions (3 to 7), do not complete the checklist. Instead, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment of your property or project area.

If No, continue to question 8.

	Yes	No
8. Has the entire property (or project area) been subjected to recent, extensive and intensive disturbance?	☒	☐

If Yes to the preceding question, do not complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance.

An archaeological assessment is not required.

If No, continue to question 9.

	Yes	No
9. Are there present or past water sources within 300 metres of the property (or project area)?	☐	☐

If Yes, an archaeological assessment is required.

If No, continue to question 10.

	Yes	No
10. Is there evidence of two or more of the following on the property (or project area)?	☐	☐

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

If Yes, an archaeological assessment is required.

If No, there is low potential for archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
 - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

In this context, the following definitions apply:

- **consultant archaeologist** means, as defined in Ontario regulation as an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. In Ontario, these people also are required to hold a valid professional archaeological licence issued by the Ministry of Tourism, Culture and Sport.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place for identifying archaeological potential, including:

- one prepared and adopted by the municipality e.g., archaeological management plan
- an environmental assessment process e.g., screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s. B.2.]

2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?

Respond 'yes' to this question, if all of the following are true:

- an archaeological assessment report has been prepared and is in compliance with MTCS requirements
 - a letter has been sent by MTCS to the licensed archaeologist confirming that MTCS has added the report to the Ontario Public Register of Archaeological Reports (Register)
- the report states that there are no concerns regarding impacts to archaeological sites

Otherwise, if an assessment has been completed and deemed compliant by the MTCS, and the ministry recommends further archaeological assessment work, this work will need to be completed.

For more information about archaeological assessments, contact:

- approval authority
- proponent
- consultant archaeologist
- Ministry of Tourism, Culture and Sport at archaeology@ontario.ca

3. Are there known archaeological sites on or within 300 metres of the property (or project area)?

MTCS maintains a database of archaeological sites reported to the ministry.

For more information, contact MTCS Archaeological Data Coordinator at archaeology@ontario.ca.

4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property?

Check with:

- Aboriginal communities in your area
- local municipal staff

They may have information about archaeological sites that are not included in MTCS' database.

Other sources of local knowledge may include:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committee](#)
- published local histories

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or property area)?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge may include:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committee](#)
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, 'adjacent' means 'contiguous', or as otherwise defined in a municipal official plan.

7. Has the property (or project area) been recognized for its cultural heritage value?

There is a strong chance there may be archaeological resources on your property (or immediate area) if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- your municipality
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA), including:
 - individual designation (Part IV)
 - part of a heritage conservation district (Part V)
 - an archaeological site (Part VI)
- subject to:
 - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
 - a notice of intention to designate (Part IV)
 - a heritage conservation district study area by-law (Part V) of the OHA
- listed on:
 - a municipal register or inventory of heritage properties
 - Ontario government's list of provincial heritage properties
 - Federal government's list of federal heritage buildings
- part of a:
 - National Historic Site
 - UNESCO World Heritage Site
- designated under:
 - *Heritage Railway Station Protection Act*
 - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes

Part VI – Archaeological Sites

Includes five sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990 (Archaeological Sites) and 3 marine archaeological sites prescribed under Ontario Regulation 11/06.

For more information, check [Regulation 875](#) and [Ontario Regulation 11/06](#).

8. Has the entire property (or project area) been subjected to recent extensive and intensive ground disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- major landscaping – involving grading below topsoil
- building footprints and associated construction area
 - where the building has deep foundations or a basement
- infrastructure development such as:
 - sewer lines
 - gas lines
 - underground hydro lines
 - roads
 - any associated trenches, ditches, interchanges. **Note:** this applies only to the excavated part of the right-of-way; the remainder of the right-of-way or corridor may not have been impacted.

A ground disturbance does **not** include:

- agricultural cultivation
- gardening
- landscaping

Site visits

You can typically get this information from a site visit. In that case, please document your visit in the process (e.g., report) with:

- photographs
- maps
- detailed descriptions

If a disturbance isn't clear from a site visit or other research, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment.

9. Are there present or past water bodies within 300 metres of the property (or project area)?

Water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

Present

- Water bodies:
 - primary - lakes, rivers, streams, creeks
 - secondary - springs, marshes, swamps and intermittent streams and creeks
- accessible or inaccessible shoreline, for example:
 - high bluffs
 - swamps
 - marsh fields by the edge of a lake
 - sandbars stretching into marsh

Water bodies not included:

- man-made water bodies, for example:
 - temporary channels for surface drainage
 - rock chutes and spillways
 - temporarily ponded areas that are normally farmed
 - dugout ponds
- artificial bodies of water intended for storage, treatment or recirculation of:
 - runoff from farm animal yards
 - manure storage facilities
 - sites and outdoor confinement areas

Past

Features indicating past water bodies:

- raised sand or gravel beach ridges – can indicate glacial lake shorelines
- clear dip in the land – can indicate an old river or stream
- shorelines of drained lakes or marshes
- cobble beaches

You can get information about water bodies through:

- a site visit
- aerial photographs
- 1:10,000 scale [Ontario Base Maps](#) - or [equally detailed and scaled maps](#).

10. Is there evidence of two or more of the following on the property (or project area)?

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

• **Elevated topography**

Higher ground and elevated positions - surrounded by low or level topography - often indicate past settlement and land use.

Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands, or other such features are a strong indication of archaeological potential.

Find out if your property or project area has elevated topography, through:

- site inspection
- aerial photographs
- [topographical maps](#)

• **Pockets of well-drained sandy soil, especially within areas of heavy soil or rocky ground**

Sandy, well-drained soil - in areas characterized by heavy soil or rocky ground - may indicate archaeological potential

Find out if your property or project area has sandy soil through:

- site inspection
- [soil survey reports](#)

- **Distinctive land formations**

Distinctive land formations include – but are not limited to:

- waterfalls
- rock outcrops
- rock faces
- caverns
- mounds, etc.

They were often important to past inhabitants as special or sacred places. The following sites may be present – or close to – these formations:

- burials
- structures
- offerings
- rock paintings or carvings

Find out if your property or project areas has a distinctive land formation through:

- a site visit
- aerial photographs
- 1:10,000 scale Ontario Base Maps - or equally detailed and scaled maps.

- **Resource extraction areas**

The following resources were collected in these extraction areas:

- food or medicinal plants e.g., migratory routes, spawning areas, prairie
- scarce raw materials e.g., quartz, copper, ochre or outcrops of chert
- resources associated with early historic industry e.g., fur trade, logging, prospecting, mining

Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Early historic settlement**

Early Euro-Canadian settlement include – but are not limited to:

- early military or pioneer settlement e.g., pioneer homesteads, isolated cabins, farmstead complexes
- early wharf or dock complexes
- pioneers churches and early cemeteries

For more information, see below – under the early historic transportation routes.

- **Early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

For more information, see:

- historical maps and/or historical atlases
 - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
 - Archives of Ontario holds a large collection of historical maps and historical atlases
 - digital versions of historic atlases are available on the Canadian County Atlas Digital Project
- commemorative markers or plaques such as local, provincial or federal agencies
- municipal heritage committee or other local heritage organizations
 - for information on early historic settlements or landscape features (e.g., fences, mill races, etc.)
 - for information on commemorative markers or plaques

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
 - is a recognized heritage property
 - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
 - the main project area
 - temporary storage
 - staging and working areas
 - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

Project or Property Name
Ear Falls Low Lift Pumping Station Improvements

Project or Property Location (upper and lower or single tier municipality)
Ear Falls Water Treatment Plant, Low Lift Pumping Station and raw water intake facilities in the English River

Proponent Name
Corporation of the Township of Ear Falls

Proponent Contact Information
Brigitte Jette, Manager of Water and Wastewater Operations, 807-728-3214

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☒

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?	☐	☒

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value?	☐	☒
b. a National Historic Site (or part of)?	☐	☒
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	☐	☒
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	☐	☒
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☒
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☒

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☒
b. has or is adjacent to a known burial site and/or cemetery?	☐	☒
c. is in a Canadian Heritage River watershed?	☐	☒
d. contains buildings or structures that are 40 or more years old?	☐	☒

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☒
b. has a special association with a community, person or historical event?	☐	☒
c. contains or is part of a cultural heritage landscape?	☐	☒

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
 - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's [Ontario Heritage Toolkit](#) or [Standards and Guidelines for Conservation of Provincial Heritage Properties](#).

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

- i. designated under the *Ontario Heritage Act*
 - individual designation (Part IV)
 - part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note:** To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- [Ontario Heritage Trust](#)
- local land registry office (for a title search)

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- [Ontario Heritage Trust](#) - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act*. **Note:** To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- [Ontario Heritage Trust](#)

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the [National Historic Sites website](#).

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the [Directory of Designated Heritage Railway Stations](#).

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the [Heritage Lighthouses of Canada website](#).

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the [Federal Heritage Buildings Review Office](#).

See a [directory of all federal heritage designations](#).

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – [World Heritage Site website](#).

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- [municipal heritage committees](#) or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's [Heritage directory](#) – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a [list of plaques](#) commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a [list of plaques](#) commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the [Canadian Heritage River System](#).

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide [Heritage Property Evaluation](#).

Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- [municipal heritage committees](#) or local heritage organizations
- Ontario Historical Society's "[Heritage Directory](#)" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through [Ontario Trails](#).

Purpose

The **purpose of this checklist** is to help proponents determine:

- if a property or project area may contain marine archaeological resources or have marine archaeological potential

A marine archaeological site is fully or partially submerged, or lies below or partially below the high-water mark of any body of water.

The property or project area includes all submerged areas that may be impacted by project activities, including, but not limited to:

- the main project area
- temporary storage and stockpiling locations
- staging and work areas, such as docking platforms and dredging locations
- temporary features such as access routes, anchors, moorings and cofferdams.

Please refer to the **instructions** on pages 4 through 9 when completing this checklist

Processes covered

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregate Resources Act*
- *Ontario Heritage Act*
 - Standards & Guidelines for Conservation of Provincial Heritage Properties
- *Canadian Environmental Assessment Act*
- *Canada Shipping Act*

Marine archaeological assessment

The assessment will help you:

- identify, evaluate and protect marine archaeological resources on your property or project area
- reduce potential delays and risks to your project

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed marine archaeologist (defined on page 5) to undertake a marine archaeological assessment.

Note: Under Part VI of the *Ontario Heritage Act*, all marine archaeological assessments **must** be done by a licensed marine archaeologist. Only a licensed marine archaeologist can assess – or alter – a marine archaeological site.

Have you found a site?

If you find something you think may be of marine archaeological value during project work, you **must** – by law – stop all activities immediately and contact a licensed marine archaeologist. The marine archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act*.

Have you found human remains?

If you find remains (e.g., bones) that could be of human origin, you **must** – by law - immediately notify the appropriate authorities (police, coroner's office, or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

Other Checklists

Please use a separate checklist for your project if:

- your Parent Class EA document has approved screening criteria
- your ministry's or prescribed public body's approved Identification and Evaluation Process includes approved screening criteria

Project or Property Name
Ear Falls Low Lift Pumping Station Improvements

Project or Property Location (upper and lower or single tier municipality)
Ear Falls Water Treatment Plant, Low Lift Pumping Station and raw water intake facilities in the English River

Proponent Name
Corporation of the Township of Ear Falls

Proponent Contact Information

Telephone Number 807-728-3214	Fax Number	Email Address bjette@ear-falls.com
----------------------------------	------------	---------------------------------------

Screening Questions

1. Is there a government-authorized, pre-approved screening checklist, methodology or process in place?
☐ Yes ☒ No
If **Yes**, please follow the pre-approved screening checklist, methodology or process. Do not complete the rest of this checklist.
If **No**, continue to Question 2.
2. Has a marine archaeological assessment been prepared for the property or project area and been entered by MTCS into the Ontario Public Register of Archaeological Reports?
☐ Yes ☒ No
If **Yes**, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the marine archaeological assessment report(s).
The proponent and/or approval authority will:
 - summarize the previous marine archaeological assessment
 - follow any recommendations for further marine archaeological assessment work, as applicable
 - add this checklist to the project file, with the appropriate documents that demonstrate a marine archaeological assessment was undertaken (e.g. MTCS letter that states that the report has been entered into the Ontario Public Register of Archaeological Reports)The summary and appropriate documentation may be:
 - submitted as part of a report requirement, e.g. environmental assessment document
 - maintained by the proponent or approval authorityIf **No**, continue to Question 3.
3. Are there known marine or land-based archaeological sites on or within 500 metres of the property or project area?
☐ Yes ☒ No
4. Is there Aboriginal or local knowledge of marine or land-based archaeological sites on or within 500 metres of the property or project area?
☐ Yes ☒ No
5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 500 metres of the property or project area?
☐ Yes ☒ No
6. Is there a known burial site or cemetery on the property or adjacent to the property or project area?
☐ Yes ☒ No
7. Has the property or project area been recognized for its cultural heritage value?
☐ Yes ☒ No
If **Yes** to any of questions 3 to 7, do **not** complete the checklist. Your property or project area could contain marine archaeological resources: please hire a licensed marine archaeologist to conduct a marine archaeological assessment.
If **No**, continue to Question 8.
8. Has the entire property or project area been subjected to recent, extensive and intensive disturbance?
☒ Yes ☐ No
If **Yes**, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance. A marine archaeological assessment is not required.
If **No**, continue to Question 9.

9. Are there two or more reported or registered ship wreck sites or reports of lost ships within a five kilometre radius of the property or project area?
☐ Yes ☐ No
If **Yes**, a marine archaeological assessment is required.
If **No**, continue to Question 10.
-
10. Is the property or project area within one kilometre of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road?
☐ Yes ☐ No
If **Yes**, a marine archaeological assessment is required.
If **No**, continue to Question 11.
-
11. Where the project impacts fourth order or higher watercourses, are there existing narrows, rapids, waterfalls or does the watercourse enter or leave a body of water within 300 metres of the property or project area?
☐ Yes ☐ No
If **Yes**, a marine archaeological assessment is required.
If **No**, continue to Question 12.
-
12. Are there potential built heritage or cultural heritage landscape resources that may be of cultural heritage value or interest adjacent to the watercourse or water body?
☐ Yes ☐ No
If **Yes**, a marine archaeological assessment is required.
If **No**, continue to Question 13.
-
13. Are there inundated beaches, bluffs, lakeshores, streams or river banks within 300 metres of the property or project area?
☐ Yes ☐ No
If **Yes**, a marine archaeological assessment is required.
If **No**, continue to Question 14.
-
14. Are there inundated beaches, lakeshores or river/creek banks beyond 300 metres and at greater depth than the project area with evidence of two or more of the following in the project area?
- elevated bathymetric features such as drumlins, eskers, kames, ridges, etc.
 - pockets of sandy lakebed
 - distinctive bathymetric formations such as escarpments, shoals, promontories, reefs, etc.
 - inundated resource extraction areas (quarry, fishery)
 - inundated historical settlement including built heritage resources or cultural heritage landscapes
 - inundated historical transportation routes
- ☐ Yes ☐ No
If **Yes**, a marine archaeological assessment is required.
If **No**, there is low potential for marine archaeological resources at the property (or project area).
The proponent, property owner and/or approval authority will:
- summarize the conclusion
 - add this checklist with the appropriate documentation to the project report or file
- The summary and appropriate documentation may be:
- submitted as part of a report requirement, e.g. under the *Environmental Assessment Act*, *Planning Act* processes
 - maintained and retained by the property owner, proponent or approval authority
-

Instructions

Please have the following available, when requesting information related to the screening questions:

- a clear map or chart showing the location and boundary of the property or project area
 - large scale and small scale maps/charts showing nearby islands or township names for context
- the municipal addresses of all properties or water lots within or adjacent to the project area, if any
- the lot, concession, parcel number or mining claims of any properties within the project area

In this context, the following definitions apply:

- **licensed marine archaeologist** means an archaeologist who has a valid marine archaeology licence issued by the Ministry of Tourism, Culture and Sport to practice in Ontario. As a consultant, a licensed marine archaeologist enters into an agreement with a client to carry out or supervise marine archaeological work on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. **Is there a pre-approved screening checklist, methodology or process in place?**

An existing checklist, methodology or process may be already in place to identify marine archaeological potential, including:

- one prepared and adopted by the municipality, such as an archaeological management plan
- an environmental assessment process, such as a screening checklist for municipal bridges
- projects being reviewed under the Canadian *Environmental Assessment Act*.
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s. B.2.]

2. **Has a marine archaeological assessment been prepared for the property or project area and been entered into the Ontario Public register of Archaeological Reports?**

Respond 'yes' to this question, if all of the following are true:

- a marine archaeological assessment report has been prepared and complies with MTCS requirements
 - a letter has been sent by MTCS to the licensed marine archaeologist confirming that MTCS has entered the report into the Ontario Public Register of Archaeological Reports (Register)
- the report contains a recommendation stating that there are no further concerns regarding impacts to marine archaeological sites

If a marine archaeological assessment report has been completed and deemed compliant by MTCS, and the report contains a recommendation that further marine archaeological assessment work be undertaken, this work will need to be completed.

For more information about previously conducted marine archaeological assessments, contact:

- approval authority (such as a municipality or conservation authority)
- proponent for whom the marine archaeological assessment was carried out
- consultant archaeologist qualified to hold a marine archaeology licence in Ontario
- Ministry of Tourism, Culture and Sport at archaeology@ontario.ca

3. **Are there known marine or land-based archaeological sites on or within 500 metres of the property or project area?**

MTCS maintains a database of marine and land-based archaeological sites reported to the ministry. Land-based archaeological sites may extend into adjacent waterbodies.

For more information, contact MTCS Archaeological Data Coordinator at archaeology@ontario.ca.

4. Is there Aboriginal or local knowledge of marine or land-based archaeological sites on or within 500 metres of the property or project area?

Check with:

- Aboriginal communities in your area
- local municipal staff

Aboriginal communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Aboriginal communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Aboriginal communities and local municipal staff may have information about marine archaeological sites that are not included in the MTCS database or reported to the ministry.

Other sources of local knowledge include the following:

- property owner
- [local heritage organizations and historical societies](#), [Association for Great Lakes Maritime History](#)
- [local and provincial dive organizations \(Save Ontario Shipwrecks, Ontario Underwater Council\),](#) [Preserve Our Wrecks](#), [Ontario Marine Heritage Committee](#)
- local dive shops
- local amateur divers and diving associations
- local museums
- [municipal heritage committees](#)
- published local histories

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 500 metres of the property or project area?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge include the following:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committees](#)
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property or project area?

For more information on known cemeteries or burial sites contact the following:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – [to locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, 'adjacent' means 'contiguous', or as otherwise defined in a municipal official plan.

When wrecks are associated with a loss of life, the area in the vicinity of the wreck may be established as a cemetery.

7. ~~Has the property or project area been recognized for its cultural heritage value?~~

There is a strong chance there may be marine archaeological resources on the property or project area if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- Municipal government
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA), including:
 - individual designation (Part IV)
 - part of a heritage conservation district (Part V)
 - a land or marine archaeological site (Part VI)
- subject to:
 - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
 - a notice of intention to designate (Part IV)
 - a heritage conservation district study area by-law (Part V) of the OHA
- included on:
 - a municipal register or inventory of heritage properties
 - Ontario government's list of provincial heritage properties
 - Federal government's list of federal heritage buildings
- part of a:
 - National Historic Site
 - UNESCO World Heritage Site
- designated under:
 - *Heritage Railway Station Protection Act*
 - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS [Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes](#)

Part VI – Archaeological Sites

Includes three marine archaeological sites prescribed under Ontario Regulation 11/06 and five terrestrial archaeological sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990.

For more information, refer to [Regulation 875](#) and Ontario [Regulation 11/06](#).

8. Has the entire property or project area been subjected to recent, extensive and intensive disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- dredging
- structural footprints and associated construction areas
 - where the structure has deep foundations or footings
- infrastructure development such as:
 - dams
 - pipelines, hydro lines or other utility trenches
 - causeways
 - bridges

Note: this applies only to the excavated part of the right-of-way or corridor as the remainder may not be impacted

A ground disturbance does not include:

- aqua-cultural activities, such as a fish farm
- areas of traditional or commercial harvesting of fish, shellfish or water-based vegetation
- traditional agricultural areas that have been inundated

Property (Project Area) Inspection

Some documentation may provide evidence of prior disturbance, such as:

- photographs
- maps
- detailed descriptions and blueprints of prior projects

If complete disturbance isn't clear from documents available, an archaeologist licensed for marine archaeology can be hired to undertake an underwater and/or remote-sensing inspection of the study area to determine whether there is any remaining marine archaeological potential.

9. Are there two or more reported or registered ship wreck sites or reports of lost ships within a five kilometre radius of the property or project area?

The presence of two or more ship wreck sites or reports of lost ships in the vicinity may indicate increased marine archaeological potential for additional marine wrecks.

10. Is the property or project area within one kilometre of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road?

Focussed areas of marine activity on- and off-shore are indicators for potential marine archaeology due to:

- deliberate structures built in or on the water, such as:
 - mooring and anchoring structures
 - weirs, piers, docks, cribwork
 - groynes, breakwaters, artificial reefs
 - vessels scuttled for utilitarian or other purposes
 - infrastructure related to the construction or operation of a facility like marine railways
- incidental features, such as:
 - beached or sunken vessels or aircraft
 - dropped objects

As a result, there is potential for marine archaeological features or artifacts.

11. Where the project impacts fourth order or higher watercourses, are there existing narrows, rapids, waterfalls or does the watercourse enter or leave a body of water within 300 metres of the property or project area?

Fourth order and higher watercourses (on the Strahler scale) have potential association with human activity around narrows, rapids, waterfalls and proximity to waterbodies such as lakes due to:

- fish harvesting and related dams or weirs
- portage locations for navigable waterways
- early historical fording locations
- early historical water power sources for mills

These activities may result in marine archaeological features or artifacts.

12. Are there potential built heritage or cultural heritage landscape resources that may be of cultural heritage value or interest adjacent to the watercourse or water body?

Euro-Canadian settlement immediately adjacent to water bodies or watercourses may be focussed on the water for specific industrial, commercial or residential uses resulting in marine archaeological features or artifacts. For guidance, see the MTCS [Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes](#)

13. Are there inundated beaches, bluffs, lakeshores, streams or river banks within 300 metres of the property or project area?

The margins of water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

- water body types:
 - primary - lakes, rivers, streams, creeks
 - secondary - springs, marshes, swamps and intermittent streams and creeks
- water bodies can include constructed water bodies or watercourses, such as:
 - temporary channels for surface drainage
 - rock chutes and spillways
- Accessible or inaccessible shorelines can also have archaeological potential, for example:
 - high bluffs or cliffs
 - sandbars

You can get information about inundated shoreline features through:

- a site visit
- aerial photographs
- bathymetric data
- geological and physiographic studies

14. Are there inundated beaches, lakeshores or river/creek banks beyond 300 metres and at greater depth than the project area with evidence of two or more of the following in the project area?

- elevated bathymetric features such as drumlins, eskers, kames, ridges, etc.
- pockets of sandy lakebed
- distinctive bathymetric formations such as escarpments, shoals, promontories, reefs, etc.
- inundated resource extraction areas (quarry, fishery)
- inundated historical settlement including built heritage resources or cultural heritage landscapes
- inundated historical transportation routes

Landforms associated with past human occupations that have later been inundated, as historically documented or demonstrated through water-level chronologies, retain their archaeological potential.

- **Elevated bathymetric features**

Higher ground and elevated positions, surrounded by low or level topography, often indicate past settlement and land use. Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands or other such features are a strong indication of archaeological potential.

Find out if your property or project area had elevated topography prior to inundation through:

- nautical charts
- bathymetric data

- **Pockets of sandy lakebed**

Areas of sandy soil, prior to being inundated, that would be well-drained and in areas characterized by heavy soil or rocky ground may indicate archaeological potential

Find out if your property or project area had sandy soil through:

- site visits
- lakebed studies and sediment borehole data

- **Distinctive bathymetric formations**

Distinctive land formations include – but are not limited to:

- waterfalls
- rock outcrops or faces
- caverns
- mounds

Prior to inundation such features were often important to past inhabitants as special or sacred places. The following sites may be present at – or close to – these formations:

- burials
- structures
- offerings
- rock paintings or carvings

Find out if your property or project area has a distinctive land formation through:

- site visits
- aerial photographs
- bathymetric data

- **Inundated resource extraction areas**

Prior to inundation, the following resources were collected in these extraction areas:

- food or medicinal plants e.g. migratory routes, spawning areas, prairie
- scarce raw materials e.g. quartz, copper, ochre or outcrops of chert
- resources associated with early historic industry e.g. fur trade, logging, prospecting, mining

Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Inundated early historic settlement**

Early Euro-Canadian settlements include – but are not limited to:

- early military or pioneer settlement, e.g. pioneer homesteads, isolated cabins, farmstead complexes
- early wharf or dock complexes
- pioneers churches and early cemeteries

- **Inundated early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

For more information, see:

- historical maps or atlases
 - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
 - [Archives of Ontario](#) holds a large collection of historical maps and atlases
 - digital versions of historical atlases are available on the [Canadian County Atlas Digital Project](#)
- commemorative markers or plaques such as those posted by local, [provincial](#) or [federal](#) agencies
- [municipal heritage committees](#) or [other local heritage organizations](#)
 - for information on early historic settlements or landscape features (e.g. fences, mill races)
 - for information on commemorative markers or plaques

Table A: Summary of Potential Environmental Impacts and Mitigating Measures			
Evaluation Criteria		Potential Environmental Impacts	Mitigating Measures
Natural Environment	English River	Project not expected to impact aquatic habitat and species during implementation	- Proposed intake pipe installed via directional drilling - Study Area not located within any designated spawning areas. - Consultation with MNR regarding timing windows and permit/approval requirements. - Implementation of erosion and sediment control plan.
	Vegetation	Small quantity of trees may need to be removed to the southwest of the LLPS for proposed wet well	- Removals to be kept to a minimum - Consultation with MNR regarding timing windows and permit/approval requirements.
	Species at Risk	- Species at Risk identified in or near the English River: - Canadian Warbler - Olive-sided Flycatcher - Barn Swallow - Common Nighthawk - Evening Grosbeak - Rusty Blackbird	- Complete and submit "<i>Client's Guide to Preliminary Screening for Species at Risk</i>" to MECP Species at Risk branch. - 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. - Construction signage posted along Highway 657 - Construction equipment and vehicles equipped with proper and effective muffling devices. - Properly maintain construction equipment to ensure exhaust emissions meet industry standards. - Use of dust suppression activities during dry periods - Efforts made to minimize mud track-out to Highway 657 - Provide advance notice of construction to adjacent property owners.
	Heritage Resources	Low potential for impacts on archaeological resources.	If archaeological resources are discovered, construction will be halted immediately and MHSTCI notified.

Table A: Summary of Potential Environmental Impacts and Mitigating Measures			
Evaluation Criteria		Potential Environmental Impacts	Mitigating Measures
		No heritage/cultural heritage landscapes will be impacts.	
	Indigenous Communities	- Three (3) Indigenous Communities were identified as potentially being directly affected by the proposed undertaking: - Wabauskang First Nation - Lac Seul First Nation - Northwestern Ontario Métis Community	All Indigenous Communities are being consulted throughout the MCEA process to ensure any potential impacts are mitigated.
	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 total eligible expenditures through the <i>Investing in Canada Infrastructure Program – Green Funding Stream</i> in addition to available funds from the Township of Ear Falls for the project.	Alternative design concepts will be explored during detailed design to confirm most technically and economically feasible solution